EXHIBIT 30

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of	)	
	)	Docket No. 52-040 and 52-041
Florida Power & Light Company	)	
	)	
Combined License Application for Turkey Point Units 6 & 7	)	
	)	

DECLARATION OF DR. MARK A. COOPER

I, Dr. Mark A. Cooper, do hereby declare as follows:

1. My name is Dr. Mark A. Cooper. I reside at 504 Highgate Terrace, Silver Spring, Maryland.

2. I have a Ph.D. from Yale University and have been providing economic and policy analysis for energy and telecom for almost thirty years. I have been the Director of Energy and the Director of Research at the Consumer Federation of America for 27 years, although the opinions I express in this testimony are my personal opinions and not those of the Consumer Federation. I am a Fellow at various universities on specific issues, including the Institute for Energy and the Environment at Vermont Law School. I have testified over 100 times before public utility commissions in 44 jurisdictions in the U.S. and Canada on energy and telecommunications issues and about twice as many times before federal agencies and Congress on a variety of issues, including energy and electricity.

3. I have provided expert testimony for the Southern Alliance for Clean Energy ("SACE") before the Florida Public Service Commission ("FL PSC") dealing with the early cost recovery for the proposed nuclear reactors at Turkey Point in 2009 and 2010 for the Nuclear Cost Recovery Clause ("NCRC") dockets. Copies of that testimony, to which I refer in this declaration, are provided as Attachments 1 and 2 respectively. A copy of my resume with energy related activities is included in my 2010 NCRC testimony.

4. I am familiar with the application of Florida Power & Light ("FPL") for a combined license (the "COL") for Units 6 & 7. I have reviewed excerpts of the Environmental Report (the "ER") prepared by FPL in the COL applications to the U.S. Nuclear Regulatory Commission (the "NRC").

5. I have been asked by SACE to review and give my opinion upon FPL's analysis in the ER regarding (1) the need for power and demand forecasts, and (2) Demand Side Management ("DSM") and renewable energy alternatives.

6. I conclude that the issues raised by contentions 8 and 9 regarding the need for power, demand forecasts, DSM, and renewable energy alternatives are consistent with the issues I raised in the FL PSC proceeding. Additionally, I conclude that (1) the energy forecasting in the ER suffers from the same inadequacies as FPL's forecasting in the FL PSC proceeding, (2) the electricity demand forecast information in the ER is flawed and outdated and (3) there are viable alternatives to nuclear power. Over two years ago the FL PSC approved the Certificate of Need for Units 6 & 7, relying on data that was from 2007 and earlier. The fundamental assumptions on which the FL PSC analysis was based have proven to be far off the mark. Additionally, the process for review at the FL PSC does not include a comprehensive analysis of the full range of alternatives available to the utility. The NRC should not rely on analysis that is out of date, incomplete or erroneous.

7. In support of contention 8.1, in my 2009 Testimony (included as attachment 1), I concluded that the projected load growth on which the Certificate of Need was based did not reflect the new realities that the Turkey Point reactors are likely to face (2009, pp. 8-9). In 2009 I estimated that the decline in load growth would push the need for Units 6 & 7 out by half a decade from the original date. In fact, FPL has moved their in-service date back, hoping demand will pick up (2010, pp. 4-5, 12-14).

Moreover, the analysis FPL placed before the Florida Commission rests on a fundamental contradiction that undermines the justification for the reactors. The assumption of the adoption of Federal environmental policies that put a price on carbon is critical to the FPL's need analysis, but the likelihood that such a policy would come with mandates for greater efficiency and renewables is nowhere reflected in the analysis submitted to the FL PSC. Modeling HR2454, the piece of legislation that has progressed the farthest in Washington, D.C., I estimate that the need for the proposed new reactors would be pushed out by as much as two decades (2009, 16-20; 2010, 17, 24-26).

I have also identified a number of other factors that lead me to conclude that the reactors are not viable in the long-term (2009, pp. 204; 2010, pp. 6-8). The most important of these include natural gas prices (2009, pp. 11-13; 2010, p. 20) and financial risks (2009, pp. 25-30; 2010, 35-41).

8. Regarding contention 8.2, in my 2009 and 2010 Testimony I note that the regulatory review process in Florida is not well integrated or comprehensive. A full range of alternatives is not reviewed and system wide need, resource flexibility and excess capacity are never considered (2009, pp. 33-36; 2010, pp. 35-38, 42).

9. Regarding contention 9, in my 2009 and 2010 Testimony I have noted that efficiency and renewables have not received adequate attention in the analysis of alternatives (2009, pp. 20-22; 2010, pp. 32-34).

10. I am providing this declaration in support of the Petition for Intervention.

I declare under penalty of perjury that the foregoing is true and correct.

Date: 8/17/10

DECLARANT: Mark Cooper

Executed in Accord with 10 CFR 2.304(d)

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EXHIBIT 30

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Plant Cost Recovery Clause	)	**DOCKET NO. 090009-EI**
	)	**FILED: July 15, 2009**

DIRECT TESTIMONY OF DR. MARK COOPER

ON BEHALF OF SOUTHERN ALLIANCE FOR CLEAN ENERGY (SACE)

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EXHIBIT 30

IN RE: NUCLEAR PLANT COST RECOVERY CLAUSE

BY THE SOUTHERN ALLIANCE FOR CLEAN ENERGY

FPSC DOCKET NO. 090009-EI

DIRECT TESTIMONY OF

DR. MARK COOPER

Introduction and Qualifications

Q. Please state you name and address.

A. My name is Dr. Mark Cooper. I reside at 504 Highgate Terrace, Silver Spring, Maryland.

Q. Briefly describe your qualifications

A. I have a Ph.D. from Yale University and have been providing economic and policy analysis for energy and telecom for almost thirty years. I have been the Director of Energy and the Director of Research at the Consumer Federation of America for 27 years, although the opinions I express in this testimony are my personal opinions and not those of the Consumer Federation. I am a Fellow at various universities on specific issues, including the Institute for Energy and the Environment at Vermont Law School. I have testified over 100 times before public utility commissions in 44 jurisdictions in the U.S. and Canada on energy and telecommunications issues and about twice as many times before federal agencies and Congress on a variety of issues, including energy and

electricity. A copy of my resume with energy related activities is attached as Appendix A.

Purpose and Summary of Testimony

Q. What is the Purpose of your testimony?

A. I have been asked by the Southern Alliance for Clean Energy ("SACE") to examine the long-term feasibility of Florida Power & Light's ("FPL") Turkey Point 6 & 7 Reactors ("Turkey Point") and Progress Energy Florida's ("PEF" or "Progress") Levy Nuclear Reactors ("Levy") (collectively "reactors" or "projects") as required by F.A.C. Rule 25-6.0423(5)(c)5.

Q. Please summarize your findings.

A. I have identified dramatically changed circumstances since affirmative determinations of need were made by this Commission for these reactors and present in my testimony evidence on the current marketplace, regulatory, technological, and financial risks of these reactors proposed for construction in Florida by Progress and FPL. These changed circumstances and resulting risks lead me to conclude that completion of the Turkey Point and Levy reactors is no longer feasible in the long term and that incurring additional costs on these reactors would not be prudent.

The decisions by Progress and FPL to build these nuclear reactors were based on four important assumptions that have been called into question in the time since the evidence was filed in their petitions for determination of need ("Need Docket").

(1) They assumed a high rate of demand growth.

(2) They downplayed the contribution that efficiency and renewables can make to meet the need for electricity.

(3) They assumed high prices for fossil fuels based on both commodity prices and the belief that public policy would put a high price on carbon.

(4) They used a low estimate of the cost of nuclear reactors.

The impact of the changed factors on these assumptions that have developed since the Need Docket can be summarized as follows:

Market Factors	
Declining Demand	Eliminates need for large quantity of new generation
Falling price of natural gas	Makes natural gas more attractive
Regulatory Factors	
Efficiency/renewable standards	Reduces need for non-renewable generation
Carbon cost reduction	Makes low carbon resources less attractive
Technological Factors	
Nuclear cost uncertainties	Raises prospects of cost overruns
Growing confidence in cost and availability of alternatives	Makes alternatives more attractive
Financial Factors	
Tight Financial markets	Makes finance more difficult
Increasing concerns on Wall Street about Nuclear reactors	Makes finance more expensive

Any of these changed factors alone could demonstrate that completion of these reactors is not feasible in the long term Taken together, these factors thoroughly undermine the case that the companies have tried to make to demonstrate the long-term feasibility of these nuclear reactors at this time. The evidence presented by the companies to the Commission does not take these changed factors fully into account and does not reflect the highly uncertain future that nuclear reactors face.

If the Commission were to merely conclude that the changes in conditions make the future highly uncertain, that conclusion alone would argue strongly against continuing with these reactors. In an uncertain environment, the assets a prudent person acquires should be flexible, have short lead times, come in small increments and not involve the sinking of large capital costs. The characteristics of nuclear reactors are the antithesis of those best suited to an uncertain environment. They are large, "lumpy" investments that require extremely long lead times and sink massive amounts of capital. Therefore, it would be imprudent to allow the companies to incur any more expenses or recover those costs from ratepayers at this time because the companies have failed to demonstrate the long-term feasibility of completing the reactors.

There are other factors that will be documented by other witnesses that reinforce the conclusion that the reactors are no longer feasible in the long-term, including the failure of some of the projects to obtain regulatory approvals, which were being counted on to stay on schedule and uncertainties and delays in the Nuclear Regulatory Commission ("NRC") licensing process. While one can point to some positive developments in the policy space, such as the possibility of the creation by the U.S.

Congress of a Clean Energy Development Authority, these are vastly outweighed by the negative developments.

Q. How is your testimony organized?

A. First, I set forth how I approach the analysis of the long-term feasibility of these proposed nuclear reactors. Next, I define the conditions that have developed since the Need Dockets that have changed the terrain of nuclear reactors and describe in qualitative terms how these conditions impact the long-term feasibility of the nuclear reactors. Then I provide quantitative evidence to support my conclusions. The bulk of my analysis focuses on the FPL evidence because FPL has presented a recent recalculation of its need analysis. I also raise some concerns that the changes in the economic landscape highlight some aspects of the methodology that FPL has developed specifically to evaluate nuclear reactor economics that may be distorting the picture presented to the Commission.

In contrast, Progress has presented little tangible evidence that it is actually conducting any ongoing analysis, other than the statement of its witnesses that they are thinking about the relevant issues. However, all of the concerns raised about the proposed FPL reactors apply with even greater force to the Progress reactors. The case for building reactors was weaker in the case of Progress than FPL. Progress had higher reserve margins, a more diverse fuel mix, and higher costs for the Levy nuclear reactors, because it is a site that does not have an existing reactor. While all of the changes I have discussed in the case of FPL also affect Progress, Progress has suffered a unique setback, having been forced to shift its schedule by 20 months and renegotiate its EPC contract with the vendor.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes, I am sponsoring the following exhibits:

MNC-1:Impact Of Declining Demand On Summer Peak Load

MNC-2: Natural Gas Wellhead, Henry Hub And Futures Prices

MNC-3: Projected Natural Gas Prices Compared To Nymex Futures Prices

MNC-4: Projections Of Carbon Compliance Costs

MNC-5: Estimates Of Potential Mid-Term Efficiency Savings: By State

MNC-6: Estimates Of Costs Of Alternatives To Meet Electricity Needs

MNC-7: Impact Of Climate Policy On Peak Load: FPL

MNC-8: Impact Of Climate Policy On Peak Load: Progress

MNC-9: Estimates Of Nuclear Reactor Overnight, Costs: 2001-2009

MNC-10: Nuclear Operators, Reactor Cancellations And Moody's Downgrades

MNC-11: Standard And Poor's Credit Profile Considerations

MNC-12**:** Diversity Of Resource Under Various Technology Scenarios

MNC-13: The $1/Kw Cost Factor

MNC-14: The Narrow Margin In FPL's Breakeven Analysis

ANALYZING THE RISK FACTORS

Approach

Q. How do you approach the analysis of the long-term feasibility of the nuclear reactors?

A. The rule adopted by the Commission requires an assessment of the long-term feasibility of the projects. I believe a thorough review of the projects is vital to protect the public interest. In a competitive marketplace firms must constantly review whether their investment decisions continue to be economically viable and justified in light of the changing market, technological, financial and regulatory conditions. For utility services that are offered under franchise monopoly conditions subject to regulatory oversight, the commission is charged with protecting the public from imprudent actions by the utility. It must ensure that utilities exercise the same vigilance with respect to the prudence of their actions as firms in a competitive market.

This regular review of the long-term feasibility of a project is particularly important in the case of nuclear reactors, which are, by their nature, extremely vulnerable to these four types of risk. As very large investments that take a long time to construct, and produce large quantities of electricity, they represent a huge quantity of inflexible, sunk costs. These investments are incapable of responding to change. They are inherently "go-no-go" decisions that should be made before costs are incurred. Because of their size and nature, the Commission needs to address the long-term feasibility of the projects before additional, substantial costs have been incurred.

The companies are well aware that this proceeding requires an affirmative showing of the long-term feasibility of completing these reactors. FPL has redone its breakeven analysis under new sets of assumptions. Progress states that it is considering a wide range of factors that affect the decision to proceed. However, Progress has presented no "detailed analysis" as required by Rule 25-6.0423(5)(c)5 demonstrating the long-term feasibility of completing the Levy project.

The factors that FPL has reanalyzed are appropriate for a decision on whether these projects should proceed, and these are the factors that the Commission should be looking at as the ultimate arbiter of prudence and long-term feasibility. Exercising this judgment before money is spent is infinitely preferable to arguing about it after the money has been spent. Both companies assert that, having reviewed recent changes in the factors that affect the decision to build these reactors, it is prudent to continue and that the completion of the reactors is feasible. However, the companies' review of the changes now faced by these reactors is cursory and insufficient to justify that conclusion.

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MARKETPLACE CONDITIONS

Demand

Q. Have there been changes in the marketplace that affect the long-term feasibility of these nuclear reactors?

A. Yes. There has been a dramatic change in the marketplace since the companies prepared their need analyses in the respective need dockets. The nation has plunged into the worst recession since the Great Depression. Some even call it a depression. Moreover, there is a growing recognition that this change is not simply a severe dip in the business cycle, but rather a major shift in the economy. The spending binge on which the U.S. embarked for a decade, in which households and business became highly leveraged, is likely over. A massive amount of household wealth was destroyed when the housing market bubble burst. Retirement accounts have been devastated by the collapse of the stock market.

Ironically, the decade on which the projections were based in the need docket coincided almost exactly with the decade in which the housing and consumption bubbles were pumped up by excessive leverage. That level of growth was unsustainable. It is my opinion that the shift in consumption is permanent and signals slower growth in the future. However, even if this were just a severe downturn in the business cycle, it would affect the demand for electricity sufficiently to raise questions about the long-term feasibility of these new nuclear reactors.

FPL

Q. Is there evidence that load growth has changed in the FPL service territory?

A. Yes there is strong evidence of a dramatic reduction in consumption that should sharply reduce projected load growth. FPL provides sufficient detail to examine closely the problem of excess capacity created by the nuclear reactors, as shown in Exhibit MNC-1, page 1. The reduction in peak demand between the 2008 and 2009 feasibility analysis is striking. In 2017, which is a crucial year in the 2008 analysis because that was the year the reserve margin hit the limit of 20 percent, the 2009-projected peak is 11 percent lower than the peak projected in 2008. Under the 2009 projection, the FPL does not reach the 2017 peak projected in 2008 until 2022, five years later. By 2040, the projected peak is 20 percent lower.

Q. Is this dramatic shift in demand fully reflected in the 2009 Economic Analysis?

A. With a dramatic decline in demand, averaging between 10 and 11 percent in the decade between 2010 and 2020, all else equal, one would expect to see an equally dramatic increase in FPL's reserve margins. That is not the case. With a drop in the summer peak of more than 10 percent in 2017, FPL shows only a 1 percent increase in reserve margin. In order to achieve that level, it must use the flexibility of natural gas plants to react to the decline of projected peak demand. Comparing Schedule 8 in the 2008 and 2009 10-year plans, we can see natural gas plants moved back a year or two, reduction of inactive reserves and elimination of some additions altogether, while making room for the Turkey Point reactors. Thus in contrast to the ten year time horizon needed for nuclear reactors, the short time frame for deploying gas alternatives is much more flexible for dealing with the uncertainties in demand.

Progress Energy

Q. Is the Progress demand projection similar to that of FPL?

A. The demand reduction projected by Progress is substantial, but much lower than that projected by FPL, as shown in Exhibit MNC-1, page 2. From the peak in 2007 to the trough in 2010, Progress shows a 2.5 percent decline in peak, compared to FPL, which shows a 6.2 percent decline. FPL assumes a more vigorous growth of peak from 2010 forward, but the depth of the decline in the recession still leaves it with a projected peaks in 2017 that is almost 10 percent lower than in the 2008 10-yer plan. For Progress, the reduction in the projected peak for 2017 is only about 2.6 percent lower.

To put these declines in demand into perspective, I note that taken together, the reduction in projected peak summer demand between the 2008 and 2009 10-year plans is

almost 3500 MW, which exceeds the combined capacity of three of the four reactors. Since these utilities represent just under three quarters of the total statewide peak summer demand, and assuming the other utilities in the state have suffered similar reductions in demand, the lowering of the peak statewide in the past year would exceed the capacity of all four plants being considered in this docket.

There are two important implications from this change in demand. First, a lack of demand can undermine the long-term feasibility of the reactor. This played a critical role in the cancellation and abandonment of nuclear reactors in the 1970s and 1980s. Back then, it was oil price shocks and rate shock that undermined demand. Today it is the great recession and, as I describe below, climate policy, that can undermine demand, but the historical experience teaches us that inadequate demand can definitely render nuclear reactors infeasible in the long term. Second, hoping to sell pieces of the plant – either with off system sales at wholesale or equity stakes – in an attempt to salvage failing economics brought on by declining demand may not be feasible with a state-wide reduction in demand.

NATURAL GAS PRICES

Q. Are there other market changes that the Commission should consider?

A. Yes, the price of gas, which plays a central role in Florida, bears close scrutiny. Natural gas was the best alternative to nuclear in the economic analysis of the FPL Need Docket, and FPL has focused on gas in this proceeding. In that Need Docket analysis, the variable cost of gas accounts for 90 percent of the difference between the nuclear

scenario and the gas scenario, and the cost of natural gas is the single largest determinant of the variable cost by far.

In this proceeding, FPL concludes that the prospects for nuclear reactors have actually brightened because of rising fossil prices – both commodity prices and carbon compliance costs. "The primary reasons for the projected general increase in the economic advantage of the Turkey Point 6 & 7 project, compared to the 2007 Need Determination filing, are: (i) currently projected higher natural gas costs, particularly in the early years; and (ii) higher projected environmental compliance costs." (Florida Power & Light Company, Docket No. 0900009-EI, Responses to Staff's Second Set of Interrogatories, Interrogatory No. 45, page 1 of 1).

This conclusion does not comport with the emerging reality. As shown in Exhibit MNC-2, page 1, the price of natural gas has not only tumbled, but it has separated from the price of oil. There are a number of reasons that natural gas might not continue to track oil as closely in the future as it has in the past. It is much more of a regional market than oil. There is increasing optimism about natural gas resources. There are efficiency programs targeted at natural gas consumption in the climate change legislation moving through Congress, which may free up supply and put downward pressures on price. Finally, there is considerable evidence that a significant part of the volatility in the natural gas market over the past decade was caused by excessive speculation brought on by excessive deregulation. The rise in prices and volatility was coincident with the creation of what is known as the Enron loophole and the entry of index traders into the market. There are strong regulatory and legislative measures being put into place to

prevent excessive speculation from again afflicting energy markets. In short, the past decade should be the exception, rather than the rule in natural gas markets.

FPL

Q. Please provide empirical evidence to support your concerns about the natural gas projections employed by FPL.

A. The evidence relies on futures prices. As shown in Exhibit MNC-2, page 2, the Henry Hub futures price, which is the standard base for natural gas pricing, is a near perfect predictor of natural gas wellhead prices. As shown in Exhibit MNC-2, page 3, the Henry Hub price is a near perfect predictor of Florida prices for gas for electric utilities.

Exhibit MNC-3, page 1 shows that the dramatic change in natural gas prices is not reflected in the FPL's analysis. The price of natural gas shown in FPL's "Key Assumption" analysis, is a cross between the mid and the high estimates from the Need Docket. These very high price projections stand in sharp contrast to the prices that prevail in the natural gas futures market. Exhibit MNC-3-page 1 shows the August futures price for Nymex Henry Hub natural gas, in years matching those used in the need docket. On average, the natural gas price in the "Key Assumption" page is about 50 percent higher than the Nymex price.

Needless to say, overestimating the single most important factor in the economic analysis can have a huge impact on the economic calculation made by the company. The Nymex futures prices are a lot closer to the low gas cost scenario from the FPL 2007 Need Docket than they are to the "Key Assumptions" prices used by the company in this

feasibility assessment. In the Need Docket, two of the three nuclear cost scenarios had higher overnight costs than the break even capital cost point in the low gas case.

PROGRESS ENERGY

Q. Do Progress Energy's natural gas prices raise similar concerns?

A. Yes. The assumed natural gas prices used by Progress suggest a dramatic shift in the relationship between the price of natural gas for utilities in Florida and the futures price of gas, as shown in Exhibit MNC-3, page 2. For most of the past decade, the price of gas for electric utilities in Florida tracked the futures price closely, but in the past three years the gap between Florida utility gas prices and futures prices grew, then declined. Compared to Nymex futures prices, the natural gas prices used by Progress suggest a gap between Florida prices and futures prices of $2 to 3$ per mmbtu greater than the historical pattern. The differences represent 20 to 30 percent of the assumed price.

Q. Did the low gas cost scenario also have low environmental costs?

A. Yes it did and I will examine the issue of compliance cost in the analysis of regulatory conditions.

REGULATORY CONDITIONS

Q. Should regulatory conditions enter into the Commission's evaluation of the long-term feasibility of these reactors?

A. Yes. The companies' Need Docket analyses were driven by assumptions about federal regulatory policy. The companies have put a high price on carbon in their

economic analyses. Without the high price on carbon, the economics of nuclear reactors would look very different. To my knowledge, the state of Florida has not put a price on carbon, nor is it contemplating doing so. Thus, the companies have decided to pursue these projects and the Commission has allowed cost recovery based, in part, on assumptions about federal climate change policy.

Q. Are you suggesting that the Commission should not take future climate change policy into account when considering the long-term feasibility of these reactors?

A. Quite the contrary. I believe the Commission should take federal policy into account when considering the long-term feasibility of these reactors, since that is a major source of regulatory risk to state decisions. However, I believe the Commission must take the **entirety** of federal policy into account. The prospect of federal climate change legislation is growing. The idea of putting a price on carbon is only a part of the legislation that is moving through the Congress. H.R. 2454, the American Clean Energy and Security Act, the first piece of climate change policy legislation to pass a house of Congress, does not simply put a price on carbon directly. Rather, it establishes an elaborate scheme of allowances to emit carbon, which will indirectly set a price on carbon. Moreover, policies other than putting a price on carbon, particularly policies to promote efficiency and renewables, play a large role as well.

Q. Please describe the full suite of federal policies that affect the long-term feasibility of these nuclear reactors.

A. On the supply-side, the legislation has a renewable energy standard that would require utilities to meet an increasing part of their load with renewables. Within a decade, they would be required to get 20 percent of their generation from renewables, with as much as 8 percent of that total coming from efficiency. At the same time, the legislation includes a number of provisions that have sharply lowered projections of the cost of carbon credits, such as efficiency and renewable mandates, subsidies for carbon control technologies and domestic and international offsets. All of these lower the demand for allowances and therefore the price. This means that the assumed compliance costs of fossil fuels are lower than projected by the companies in prior proceedings and this proceeding.

On the demand side, there is a substantial mandate for energy efficiency. This is embodied, in part, in the ability to meet 40 percent of the renewable resource standard with efficiency and, in part, in dramatic improvements in building codes and appliance standards. Mandates to improve the energy efficiency of new buildings by 30 percent in the near term and 50 percent in the longer term will have a substantial impact on energy demand over the life of the reactors being considered in this proceeding. Funds from certain allowances are set-aside to improved efficiency, particularly for natural gas. Similarly, the American Recovery and Reinvestment Act of 2009 includes a huge increase in funding to improve the energy efficiency of existing buildings. As the efficiency of buildings and appliances improves, the demand for electricity and natural gas declines.

These regulatory factors – increased renewables, lower demand through efficiency, and a lower price on carbon – must be considered in the evaluation of

alternative scenarios for future supply of electricity. Extracting only the price of carbon from the policy landscape and inserting it in the economic analysis, while ignoring the other aspects of policy, distorts the picture being presented to the Commission. These other policies would further undercut the claim that nuclear reactors are feasible in the long-term. Many of these other aspects have been part of the climate change policy debate for quite some time. Taken together, these changes on the demand side, as well as the renewable standard, will have a substantial impact on the need for new non-renewable generation and undermine the long-term feasibility of building these reactors.

FPL

Q. Would the cost of compliance of fossil fuels be affected as a result of these policies?

A. One would expect that it would. Decreasing demand for allowances due to the efficiency and renewable policies and access to low cost offsets would depress the price. In its "Key Assumptions" FPL has increased the price of carbon compliance above the highest level from the 2007 analysis. As Exhibit MNC–4, page 1 shows, the long run price under all the environmental scenarios has more than doubled. As Exhibit MNC-4, page 2 shows, the "Key Assumption price" is roughly equal to the Env II price. In 2040 the price is almost 50 percent higher than the EPA estimate of carbon costs in the wake of HR 2454. Over the 25-year period, the key assumption price on carbon is over 35 percent higher than the EPA price. In fact, the EPA prices are close to the Env I price.

Progress

Q. Does the compliance cost assumption of Progress suffer from similar problems?

A. Yes. As shown in Exhibit MNC-4, page 3, the EPA compliance costs associated with HR 2454 are slightly lower than those listed in the Progress prudency filing. The high cost scenarios are way above the most recent projections. Focusing attention on the low range of estimates dramatically alters the perspective the Commission should take on the proposed reactors. In the case of Progress, the reactors were as likely to fail the economic test as pass it with carbon compliance costs in the low range.

Q. Would the cost of natural gas be affected by the suite of federal policies?

A. Yes. The EPA analysis indicates a 20 percent reduction in the cost of gas in 2025. The delivered cost of gas for electricity in 2025 is lower that the Henry Hub futures price in 2021.

TECHNOLOGICAL CONDITIONS

Efficiency and Renewables

Q. Should changing technological conditions factor into the analysis of the long-term feasibility of these reactors?

A. Yes. While climate policy is seen as giving a direct advantage to reactors by putting a price on carbon, that policy does much the same for other technologies. In fact, there are ways in which the alternative technologies are likely to receive an even larger boost. There are also many programs targeted at various technologies that are in earlier

stages of development that may enjoy larger cost reductions as the science advances and the scale of production ramps up.

I believe there are three technological developments that are shifting the terrain in ways that disfavor nuclear reactors – the availability and cost of conserved energy, the availability and cost of renewables, and the availability and cost of nuclear reactors.

Q. Please describe the emerging terrain for efficiency technologies.

A. There is a growing consensus that the cost of many alternatives is lower than that of nuclear reactors. For efficiency, the change in the terrain is largely a matter of increasing confidence that substantial increases in efficiency are achievable at relatively low cost. The detailed analysis of potential measures and the success of some states at reducing demand through energy policies have increased the confidence that efficiency is a reliable option for meeting future needs for electricity by lowering demand, as shown in Exhibit MNC-5.

I believe that the technology of efficiency has come into much sharper focus in the past year. Numerous studies of the potential for and cost of improvements in efficiency in the residential, commercial and industrial sectors have shown that large quantities of energy can be saved at relatively low cost, as summarized in Exhibit MNC-5. One study was done specifically for Florida, which found that aggressive policies to reduce energy consumption could lower demand by 20 percent at a cost of less than 3.5 cents per kWh.

Thus, independently of any regulatory mandate, as the technology of efficiency is proven out, the Commission should consider greater reliance on it as part of the least cost

approach to meeting the need for electricity. The combination of regulatory and technological changes will drive efficiency into the electricity sector, undermining the long-term feasibility of the reactors.

Q. Please describe the emerging terrain of renewables.

A. The concern with climate change has sharpened the focus on the cost and availability of renewable technologies. For renewables, the change is in strong cost reductions that are expected as new technologies ramp up production. As shown in Exhibit MNC-6, paged 1 and 2, in half a dozen studies the cost of alternatives that included renewables and/or efficiency, every analyst found several non-fossil resources less costly than nuclear.

The only two technologies on which there is a wide difference of opinion about cost are solar photovoltaics and nuclear, as shown in Exhibit MNC-6, page 3. The other technologies included in recent studies there is much better agreement. The combination of regulatory and technological changes will drive renewables into the electricity sector, undermining the long-term feasibility of the reactors.

Q. How do the regulatory and technology changes alter the context for assessing the long-term feasibility of these reactors?

A. They dramatically alter the context. HR 2454 intends to lower demand for nonrenewable generation resources. It could do so significantly. The renewable energy standard ("RES") builds to 20 percent by 2022. Improvements in the building codes start quickly with a 30 percent reduction in consumption from new buildings by 2010 and

build to a 50 percent reduction by 2014 for residential building and 2015 for commercial buildings. Additional improvements of 5 percent are called for every three years after 2017/2018. Revenue for retrofitting of existing buildings would begin when the allowances go into force. Appliance efficiency standards will unfold over time. Studies by the American Council for an Energy Efficient Economy suggest that the building codes, appliance standards and retrofitting of existing buildings could lower demand by as much as 7 percent. The renewable energy standard would be on top of the building code, appliance standards and retrofit impacts, pushing the theoretical total reduction of demand for nonrenewable generation past 25 percent, but there are a number of mechanisms that would lower that impact. In particular, states that cannot or choose not to expand renewables can make alternative compliance payments of $25 per MWh to states that exceed the combined efficiency renewable energy standard.

On a national average basis, the EPA projects a 10 percent reduction in demand and growth in renewables equal to 1.1 percent of demand.[1] An earlier analysis suggests the weatherization program in the American Recovery and Reinvestment Act would lower demand by 1.4 percent.[2] The impact varies from state-to-state, however. The American Council for an Energy Efficient Economy estimated the impact of the improvement in building codes and appliance standards in Florida would be 20 percent

[1] EPA Analysis of toe American Clean Energy and Security Act of 2009 H.R. 2454 in the 111th Congress, 6/23/09, p. 26

[2] Contrast EPA Analysis of toe American Clean Energy and Security Act of 2009 H.R. 2454 in the 111th Congress, 6/23/09, p. 26, with EPA Preliminary Analysis of toe Waxman Markey Discussion Draft: American Clean Energy and Security Act of 2009 H.R. 2454 in the 111th Congress, 4/20/09, p. 23. the former includes the effect of the ARRA in the reference case, the latter does not. I attribute the difference to the ARRA

above the national average.[3] In a state where so much efficiency is available at less than 2.5 cents per KWh, it would make sense to petition for the maximum efficiency contribution to the RES (8 percent) and develop as much renewable energy as is economic, before sending money to California, Washington, Minnesota and Massachusetts. Combining these factors, a reasonable range for the impact on Florida would be a 10 to 20 percent reduction in the demand for non-renewable generation.[4]

FPL

Q. What impact does including the efficiency and renewable policies in HR 2454 have on FPL's projections for load growth and demand for nonrenewable resources such as nuclear reactors?

A. They would have a major impact. The 20 percent scenario is described in Exhibit MNC-7, page 1. Under this scenario, FPL does not reach the peak for 2017 projected in the Need Docket until 2036. Exhibit MNC-7, page 2 presents the 10 percent scenario, and under this scenario, FPL does not reach the peak projected in the Need docket for 2017 until 2028. The combination of the great recession and H.R 2454 climate policy extends the decision horizon by one to two decades. In an uncertain environment, that is a lot of breathing room. Utilities should be managing their resources to accommodate this

[3] Energy Savings from Codes and Standards Count Towards EERS Savings Goals, available at http://www.aceee.org/energy/national/EERScssavings.pdf

[4] The American Council for and Energy Efficient Economy puts the savings from Title I and Title II of HR2454 at 5.4 quds in 2020 and 12.2 quads in 2030. These savings work out to 12.2 percent of the energy consumed in the electricity sector and in 2020 and 25.6 percent of the energy consumed in 2030 (see HR. 2454 Addresses Climate Change Through a Wide Variety of Energy Efficiency Measures, available at http://www.aceee.org/energy/national/HR2454_Estimate06-01.pdf)

shift and the first thing they should do is take the least flexible projects out of the queue, such as new nuclear reactors.

Progress

Q. What is the impact of including the efficiency and renewables scenarios on Progress Energy's load growth and demand for nonrenewable resources?

A. It is in the same direction, but smaller because the company assumes a smaller near term impact of the recession on the growth of demand, as shown in Exhibit MNC-8. The peak load for 2017 projected in the 2008 10-year plan does not occur until 2034 under the 20 percent scenario (Exhibit MNC-8, page 1) and 2026 under the 10 percent scenario (Exhibit MNC-8, page 2). Moreover, the 2017 peak has considerable excess capacity above the reserve margin requirement of 20 percent, which adds several years to a projection of when generation resources become constrained.

Q Do the analyses presented to the Commission by the companies reflect these developments?

A. It does not appear to. The demand projections appear to reflect the effects of the "great recession" to differing degrees, but not the aggressive efficiency policy embodied in the legislation that passed the House of Representatives. There is no hint of a renewable energy standard of 12 to 20 percent.

NUCLEAR REACTOR COSTS

Q. Pleases describe the uncertainties about the cost of nuclear reactors.

A. For nuclear reactor costs, the evidence on technology points in the opposite direction. Early in this decade vendors and contractors at the Department of Energy produced very low estimates of the cost of nuclear reactors, claiming that things have changed since the first generation of reactors. In the eight years since those initial, promotional studies were released, the estimate of the cost of nuclear reactors has increased dramatically, especially among Wall Street and independent analysts. As long as the costs placed before the Commission are "non-binding," the Commission must be aware of the growing uncertainty about the cost of nuclear reactors. As long as they are "non-binding," the prospect of cost escalation places ratepayers at risk, especially where costs for construction work in progress is being granted.

In fact, the extreme uncertainty about nuclear reactor costs has caused FPL to create a whole new framework for evaluating options. As FPL put it in the Need Docket:

> The second difference in the economic analysis approach step that developed the CPVRR costs for the resource plans is that no generation or transmission capital costs associated with Turkey Point 6 & 7 were included in the analysis. The reason for this is that *FPL does not believe it is currently possible to develop a precise projection of the capital cost associated with new nuclear units with in-service dates of 2018-on*. Consequently, FPL's economic analysis approach normally used to evaluate generation options has been modified to include a second economic analysis step." ("Need Study for Electrical Power, Docket No. 07-0650-EI, Florida Power and Light Company, October 16, 2007, pp. 104-105, emphasis added).

In the 21 months since that statement was made, there have been dozens of studies of the projected costs of nuclear reactors. The cost in 2008 $ have ranged from a low of just under $2400/kW to a high of just over $10,000/kW, as shown in Exhibit MNC-9.

As described in the FPL need study, FPL's cost estimate was derived from an early low estimate for a different type of reactor and its current estimates remain in the low range of projections. Each of FPL's estimates (low, middle and high) is in the bottom quarter of the comparable estimates. The wide range of cost scenarios considered within each of the studies attests to the uncertainty that afflicts all of the studies and to which FPL has testified.

The two conclusions I would draw from this analysis are (1) the range of costs considered by FPL is narrow and too low and (2) the uncertainty is huge. This only reinforces my opinion that the prudent course would be to avoid rigid, expensive choices, especially if there is time to let the uncertainties diminish before decisions must be made.

FINANCIAL CONDITIONS

Q. What financial factors are affecting the long-term feasibility of these reactors?

A. There are two categories of factors – the general financial environment and the specific plant finance. The general environment for raising large sums of money has clearly deteriorated. Money is tight. How long that will last and the nature of the long-term environment remains to be seen.

In a sense, the marketplace, regulatory and technological risks combine with the nature of nuclear reactors to create the severe financial risk that nuclear reactors face. The financing of the construction of large nuclear reactors has also come under greater scrutiny by Wall Street.

A recent special comment by Moody's underscores the challenges that these huge projects pose. Moody's identifies the developments in the project and regulatory areas that are positives for nuclear reactor construction, but still concludes that the negatives are a great concern and declares that it "is considering taking a more negative view for those issuers seeking to build new nuclear power plants" (p. 1) because "We view nuclear generation plans as a "bet the farm" endeavor for most companies, due to the size of the investment and length of time needed to build a nuclear power facility." (p. 4).

Moody's goes on to outline the complex factors affecting nuclear reactor construction and operation.

> Project risks are somewhat more clear today than during the last build cycle, in the 1970s, since we now have a track record that measures nuclear power's operating performance; strong plant economics due to low fuel cost; proven efficient and safe operating capabilities; new and refined regulatory procedures; and more certainty over reactor designs before construction begins. (p. 2)
>
> Much has changed since the last major nuclear-generation construction cycle (1965-1995). The industry has learned from experience, including up-front regulatory oversight of development and investment; streamlined

federal NRC approval procedures; and enhanced construction cycles and techniques.

In addition, new environmental regulations, specifically those aimed at reducing carbon dioxide emissions; appear well positioned for near-term implementation. These environmental developments should otherwise bolster the case for new nuclear generation, as it is viewed as one of the only large-scale generation technology with a no-carbon footprint. (p. 7)

On the other side, there are a host of issues and challenges in Moody's view that weigh in the opposite direction. In each of the important areas of risk, uncertainties and challenges abound.

The inherent nature of the projects continues to be a challenge and creates marketplace and technological risk.

The sheer size, cost and complexity of new nuclear construction projects will increase a utility's or power company's business and operating risk profile, leading to downward rating pressure. The length of a nuclear construction effort also entails lengthy regulatory reviews and potential delays in recovering investments, changing market conditions, shifting political and policy agendas, and technological developments on both the supply and demand side. (p. 5)

Notwithstanding the fact that public policy has created favorable conditions for reactor construction in some aspects of regulation, there are other aspects that pose continued risk at in both execution risk and regulatory risk.

> While a constructive regulatory relationship will help mitigate near-term credit pressures, we will remain on guard for potential construction delays and cost overruns that could lead to future rate shock and/or disallowances of cost recovery. Given the lengthy construction time needed for nuclear projects, there is no guarantee that tomorrow's regulatory, political, or fuel environments will be as supportive to nuclear power as today's. (p. 7)
>
> Less clear today is the effect that energy efficiency programs and national renewable standards might have on the demand for new nuclear generation. National energy policy has also begun eyeing lower carbon emissions as a key desire for energy production—theoretically a huge benefit for new nuclear generation—but the price tags associated with these development efforts are daunting, especially in light of today's economic turmoil. It isn't clear what effect such shifts, or changes in technology, will have for new nuclear power facilities. (p. 2)

The result of these market, regulatory and technological uncertainties and risks is to create financial pressure on projects, pressures that are reflected by project specific concerns and the general turmoil in the credit markets.

> Given these long-term risks, a company's financial policy becomes especially critical to its overall credit profile during construction. In general, we believe a company should prepare for the higher risk associated with construction by maintaining, if not strengthening, its balance sheet, and by maintaining robust levels of available liquidity capacity. (p. 5)

> Credit conditions are yet another question. Few, if any, of the issuers aspiring to build new nuclear power have meaningfully strengthened their balance sheets, and for several companies, key financial credit ratios have actually declined. Moreover, recent broad market turmoil calls into question whether new liquidity is even available to support such capital-intensive projects. (p. 2)

Moody's continues to see execution risk in these projects and points to the history of the financial difficulties that utilities building reactors in the 1970s and 1980s as instructive for evaluating current projects.

> Moody's is considering applying a more negative view for issuers that are actively pursuing new nuclear generation. History gives us reason to be concerned about possible significant balance-sheet challenges, the lack of tangible efforts today to defend the existing ratings, and the substantial execution risk involved in building new nuclear power facilities. (p. 2)

Q. Do these concerns apply to the nuclear reactors proposed by FPL and Progress?

A. Yes. As I have shown above these marketplace, regulatory and technology risks weigh heavily on the proposed Florida reactors. The execution risk remains a serious concern as well. In the case of Florida, where both of these reactors before the commission are still awaiting approval for the 16th and 17th revision in its "standard" design, where the NRC has determined that one utility could not proceed under a Limited Work Authorization ("LWA") and therefore has been forced to delay the project and renegotiate its EPC contract, paying fees just to stand in line, and where the developer of

the prototype has shelved its plans to make its project the "model," Moody's concerns seem well founded and the assumption that execution risk has been solved deserves to be questioned.

The downgrades of utility ratings cut to the heart of the problems encountered by the industry during "the last major nuclear-generation construction cycle (1965-1995)." As shown in Exhibit MNC-10, I have identified 68 firms that engaged in the construction or operation of nuclear reactors in the U.S. Of those 68 firms, three quarters endured cancellation of at least one plant and half suffered a ratings downgrade. Both of the utilities involved in this proceeding suffered downgrades. Cancellations are the ultimate proof of that reactors can become infeasible and financial risk plays a key role in triggering the cancellation.

Moody's is not the only Wall Street firm to recognize the challenges facing nuclear reactors, as shown in Exhibit MNC-11. Even at a promotional conference, Standard and Poor's noted that "challenges for the industry participants abound" (p. 18). Even recognizing that there are positive aspects of the current environment, as Moody's did, Standard and Poor's identifies more aspects of the current situation that are negative. Interestingly, even with a loan guarantee, Standard and Poor's sees significant financial issues. The utilities proposing the reactors in Florida are not on the list for the first round of loan guarantees, so the challenges facing these projects are even greater.

Thus, the Commission needs to be sensitive to the potential financial risks of these plants. Credit downgrades raise the cost of capital and can have a significant impact on the cost of electricity and undermine not only the long-term feasibility of the reactors, but also the viability of the utility.

Let me stress again that the importance of uncertainty is a key fact for the Commission to take into account and the importance of demand projections. One of the key factors contributing to the bust of the nuclear boom of the 1970s was the inability or unwillingness of utilities that had become committed to nuclear construction to cope with reduced demand growth. The oil price shocks of the 1970s and the rate shock of the 1980s destroyed the demand that the nuclear reactors were intended to supply.

Today we have a similar demand shock created by the great recession and the pending climate change policy. It is highly unlikely that demand will reach the levels predicted in the Need Dockets for decades. Between the two utilities, FPL and Progress have lowered their projection of peak demand for 2017 by almost 3700 MW. That is equivalent to the capacity of three of the four units they are planning to build. Climate change policy could reduce the need for nonrenewable capacity by another 3300 to 6600 MW in their service territories in the next two decades. The chance that Florida will actually need these four reactors should climate change legislation be enacted along the line of HR 2454 is virtually zero. If climate change legislation were not enacted now or in the future, the carbon compliance prices assumed by the companies would not come to pass. In that case, the reactors could not be justified on economic grounds. Either way, these reactors are not feasible in the long-term.

DIVERSITY

Q. Do the other goals the Florida legislature has set for the electricity sector alter you conclusion?

A. Not at all. The goal of promoting diversity of resources to lower vulnerability to a variety of threats argues for efficiency and renewables just as much as nuclear. Efficiency is the most reliable form of meeting needs because it is always on. Lowering demand lowers the reliance on all other forms of energy. Renewables also provide diversity.

To evaluate the effect of alternatives on the diversity of sources, I have calculated an index known as the HHI index. The index is used frequently in economics to evaluate the concentration of markets. In fact, the Merger Guidelines of the Department of Justice and the Federal Trade Commission are written in terms of the HHI. The index is calculated by taking the share of each entity making up the market (in this case the share of the resource in the total) squaring it, summing the squares and multiplying by 10,000 to clear the fraction. A monopoly or utility reliant on a single source would have an HHI of 10,000 [(1 * 1) *10,000].

Exhibit MNC-12 shows the HHI for three scenarios for both FPL and Progress. It has the nuclear and gas scenarios from the Need Docket and contrasts this to an efficiency and renewables scenario in which HR 2454 induced efficiency and renewables are at 15 percent (half way between the 10 and 20 percent scenarios discussed above). Efficiency is assumed to be 12 percent of the total resource, while incremental renewables are set at 3 percent. In both cases, the efficiency and renewable mix is more diverse than either the nuclear or the gas scenarios, when one counts efficiency as a "resource."

ECONOMIC ANALYSIS

FPL's Breakeven Analysis

Q. Is the breakeven analysis the common approach to making the comparison between alternatives?

A. No. Because FPL is unsure of the cost of nuclear reactors it has created a new methodology to evaluate one option, whether or not to build nuclear reactors. The typical methodology is a levelized cost comparison of the different alternatives.

Q. Are there aspects of the break-even analysis that bear close scrutiny in light of the changed conditions you have identified?

A. Yes there are several aspects. At a general level, the breakeven analysis improperly narrows the scope of the review. Generally, analysts calculate the projected cost per kilowatt-hour. Each alternative would be considered on its merits. In the breakeven analysis, FPL compares two or three large-scale alternatives. It does not ask whether other alternatives would be less costly.

More specifically, there are two aspects of the breakeven framework that FPL has developed which should be examined carefully in light of the changing conditions I have identified. These aspects are escalation and excess capacity.

Q. Please describe your concerns about escalation.

A. The wide variation in the projected costs of power from nuclear reactors stems from a difference of opinion over the overnight costs and escalation of construction costs. In the FPL analysis cost escalation is equal to one-quarter of the overnight costs and it is

treated separately form overnight costs. FPL assumes a zero real cost escalation. That is, the rate of increase in the cost of construction equals the rate of inflation. Many other studies assume significant, real cost escalation.

FPL calculated a fixed cost recovery factor, which is the cumulative present value of the revenue requirement per $1/kW of overnight capacity (the $1/kW factor). It is not clear to me how the escalation of construction costs is included in the calculation of the revenue requirement. It could have been embedded in the stream of costs as a percentage of the construction cost. If one wants to test an alternative escalation rate, one would have to modify the calculation of the $1/kW recovery factor. The $1/kW factor has changed significantly between 2007 and 2009, as shown in Exhibit MNC-13. The decline in the implicit $1/kW factor accounts for between one-tenth and one-quarter of the increase in the breakeven capital figure.

Q. Please describe your concerns about excess capacity.

A. The breakeven analysis essentially calculates how much nuclear capacity can be purchased with the variable cost savings from building new nuclear reactors. Over 90 percent of the savings comes from variable costs, largely fuel costs. In other words, nuclear capacity is paid for with fuel cost savings. The analysis proceeds in two steps. First, the system costs are calculated with and without nuclear capital costs, then the cost of building nuclear reactors is compared to the amount of money available from the savings.

The operating cost estimates should not include excess production and the variable costs associated with that production. If capacity is idled because of excess, then

the carrying cost of that excess should be subtracted from the savings. These are costs that would not be incurred if the system were "right" sized. Because nuclear reactors come in larger units and have higher capital costs, while natural gas units are small, lower in capital cost and have higher operating costs, ensuring that the model takes these differences into account become more important when demand declines and excess capacity increases.

Absorbing excess capacity with "off-system" sales raises two issues. First, to the extent that off-system sales are claimed, the net costs of production and net revenues should be deducted from the system cost total for purposes of the breakeven analysis. Second, in an environment where demand is slackening and reserve margins are rising all around, the assumption that off-system sales can take place should be examined.

The cost of operating the system is driven by assumptions about plant capacity, capacity factors and heat rates. The 20 percent reserve margin creates a circumstance in which the implicitly capacity factor (80 percent) is lower than the assumed capacity factors for the major alternatives being compared. The reserve margin is the insurance premium that Floridians pay to ensure that the lights stay on. Reserves in excess of the reserve margin are excessive. Over a long time horizon, the ability to match supply and demand (plus the reserve margin requirement) should be rewarded. If excess capacity is used to make off-system sales, those revenues should be subtracted from the system costs in the break-even analysis.

While the excess capacity is a few percentage points spread over a number of years, it can make a difference if it is handled properly. The economic advantage claimed for nuclear is actually quite small, when compared to the total costs of the

system. As shown in Exhibit MNC-14, using the high capital costs and the 2007 $1/kW factor, but leaving all other assumptions alone, the cost advantage of nuclear is less than five percent in eight of the nine cost cases. The handling of excess capacity in the context of such a small difference between system costs with and without nuclear reactors could be quite important.

Progress

Q. Does the economic analysis offered by Progress raise similar concerns?

A. Yes. While Progress has pursued a more traditional approach to assessing the economics of nuclear reactors compared to other options, its analysis raises concerns that are similar to those I have expressed for FPL. The excess capacity question is important in the case of Progress because its base case already has a large excess above the reserve margin requirements and the large project creates even greater excess.

This is particularly important in the case of Progress because it has argued that the construction periods of the two reactors must be kept close together to achieve cost savings. Since the economic analysis is done at the average cost of the two reactors and the link between them in time is so tight, this project is not really two 1100 MW reactors, it is one 2200 MW project. If the decision were made to drop the second reactor, the cost of the first reactor would rise and the Commission would have to redo the whole economic analysis at a much higher cost. Slackening demand growth drives a time wedge between the first and second units, as it takes more time for demand growth to reduce the excess capacity resulting from the addition of large units. Progress does not

need the second units as quickly and capturing the cost economies of the rapid build creates excess capacity that last longer.

This obviously ties directly to the cost escalation issue. Progress used a single point estimate for cost, which was between FPL's mid and high point, but the cost is nonbinding from the Commission's point of view and is being renegotiated in light of the long slippage in schedule. The Commission is being asked to allow the recovery of hundreds of millions of dollars of costs from a project, whose total cost, and therefore long run feasibility, are unknown in the context of an industry that suffered severe cost overruns in the past and is exhibiting a rapid run up in cost projections.

Q. Please summarize your conclusions.

A. The small cost advantages claimed for these nuclear units in the future underscores how important all of the changing conditions I have identified are. The Florida legislature has created an environment that provides incentives for nuclear reactors, but it has not written a blank check nor created a blindfold. The utilities and the Commission must act prudently within the confines of the incentive structure the legislature has established. In this prudence review the utilities ask for cost recovery for these proposed nuclear reactors by constructing an economic analysis that gives nuclear a slight, or 4-5 percent, cost advantage. However, that analysis rests on a series of assumptions that are no longer consistent with reality, if they ever were – high demand growth, very little contribution from efficiency and renewables, high fossil fuel costs, and low nuclear reactor costs.

My testimony has identified seven factors that are moving strongly against nuclear reactors. Any one of the seven could reverse the conclusion reached by the utilities that nuclear reactors are less expensive.

(1) Slowing demand growth due to a major shift in the economy

(2) Moderating natural gas prices

(3) Federal policies to require a growing role of efficiency and renewables

(4) Moderating CO2 compliance costs

(5) Improving technology and cost of efficiency

(6) Improving technology and cost of renewables

(7) Escalating nuclear reactor costs.

Given that all seven of these factors are moving strongly against nuclear reactors, it is highly likely that the reactors will cost consumers much more than the alternatives. And, given that relatively little has been spent on the proposed reactors now, this is the moment for the Commission to take the required hard look at the long-term feasibility of the completion of these reactors. Spending more on nuclear reactors and allowing the utilities to recover those costs from ratepayers would be imprudent.

Q. Does this conclude your testimony?

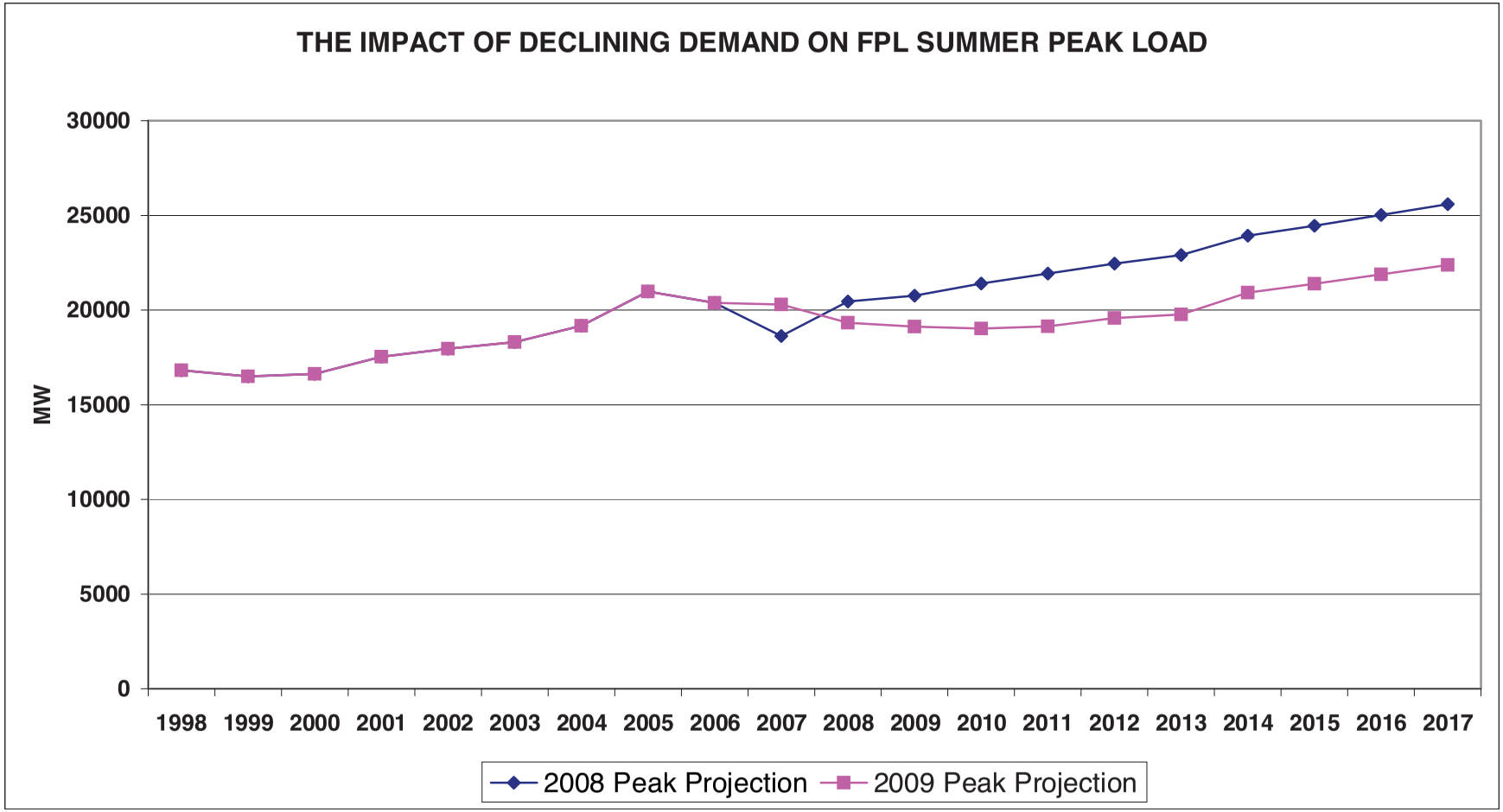
A. Yes it does.

EXHIBIT 30

EXHIBITS ACCOMPANYING DIRECT TESTMONY OF MARK N. COOPER

EXHIBIT 30

Docket No. 090009-EI
Exhibit MNC-1
Page 1 of 2
IMPACT OF DECLINING DEMAND ON SUMMER PEAK LOAD



Source: 2008 10-year plan, p. 40; 2009 10-year plan, p. 45.

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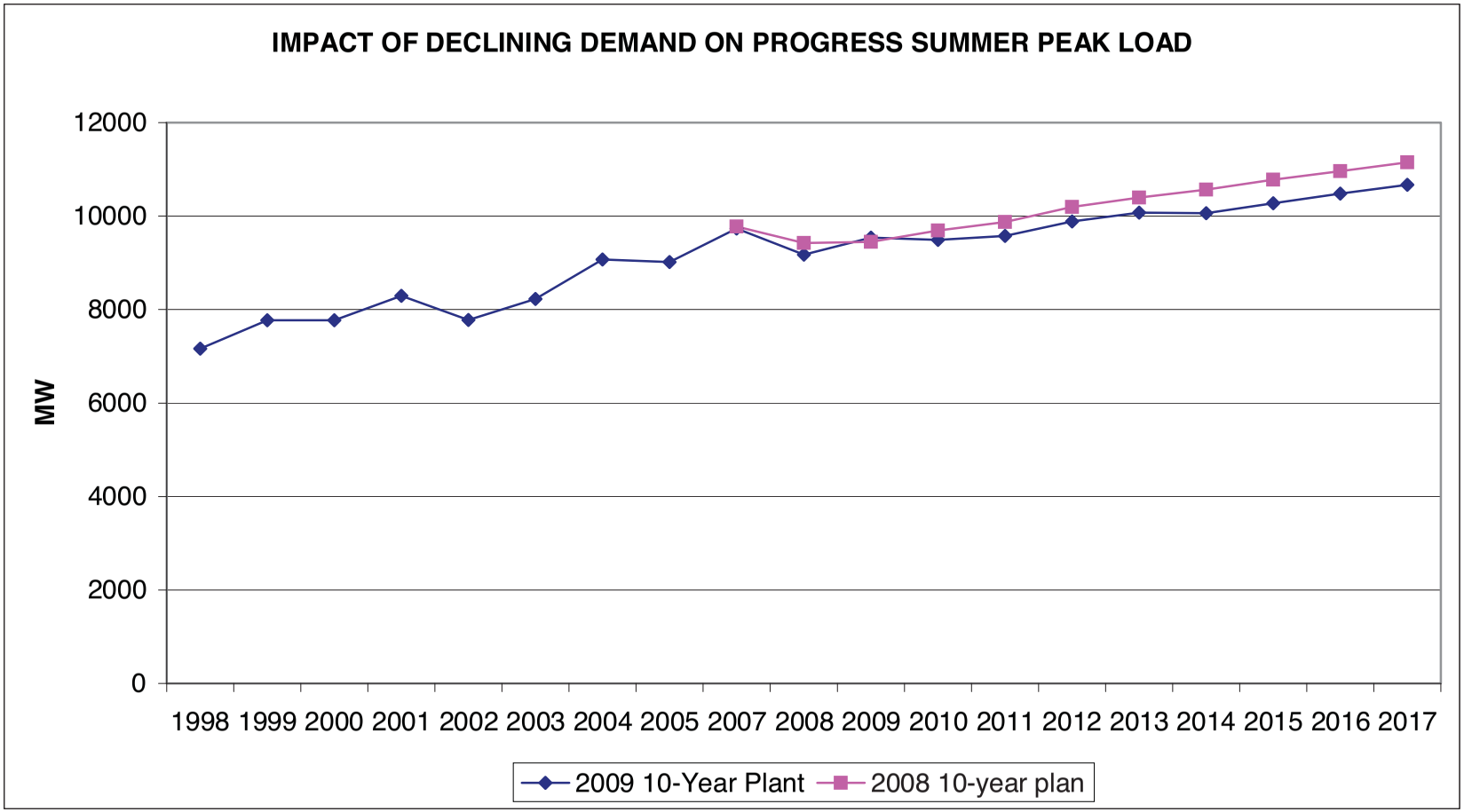
Docket No. 090009-EI
Exhibit MNC-1
Page 2 of 2
IMPACT OF DECLINING DEMAND ON SUMMER PEAK LOAD



Source: 2008 10-year plan, p. 2-7; 2009 10-year plan, p. 2-6.

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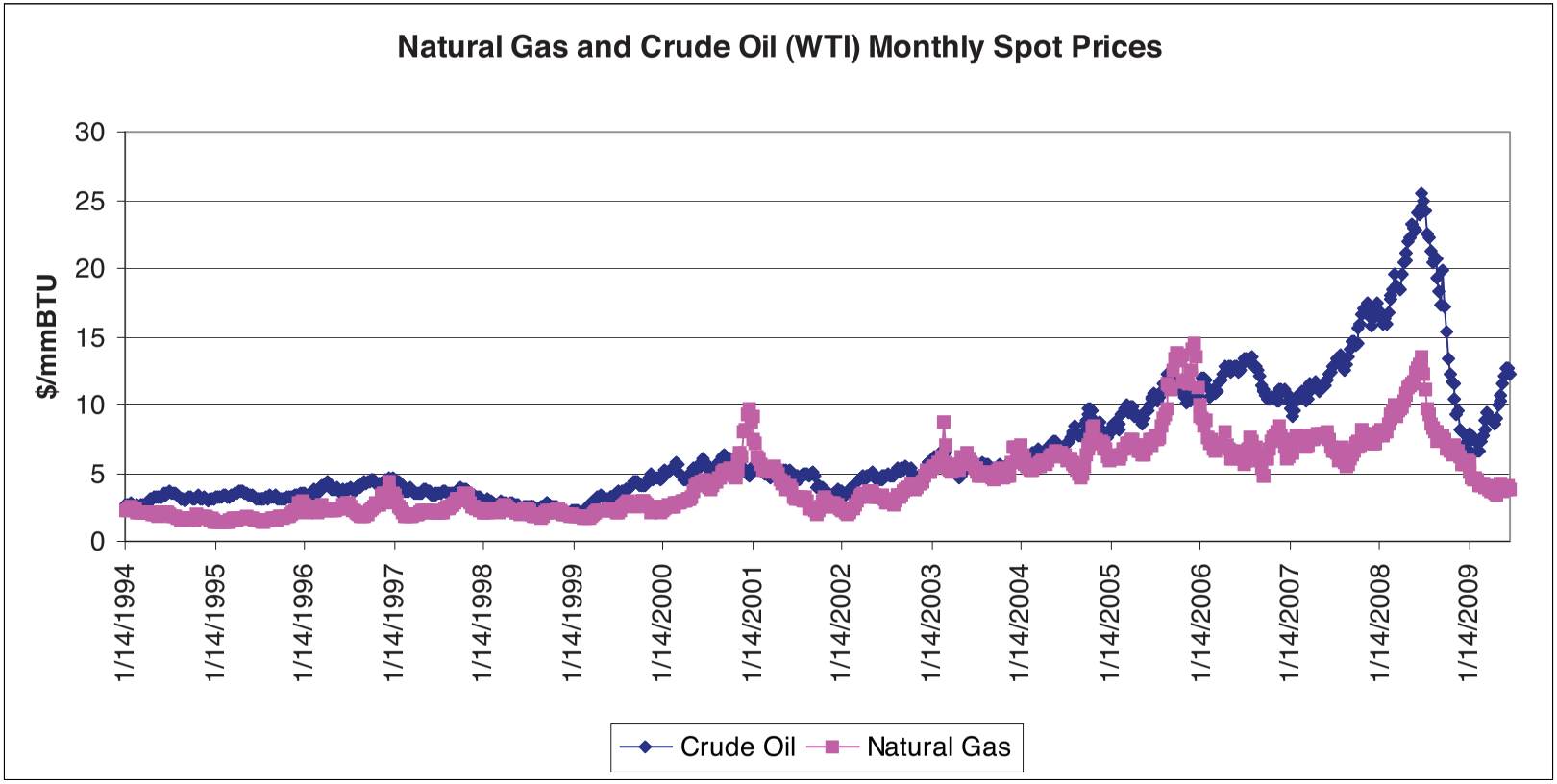
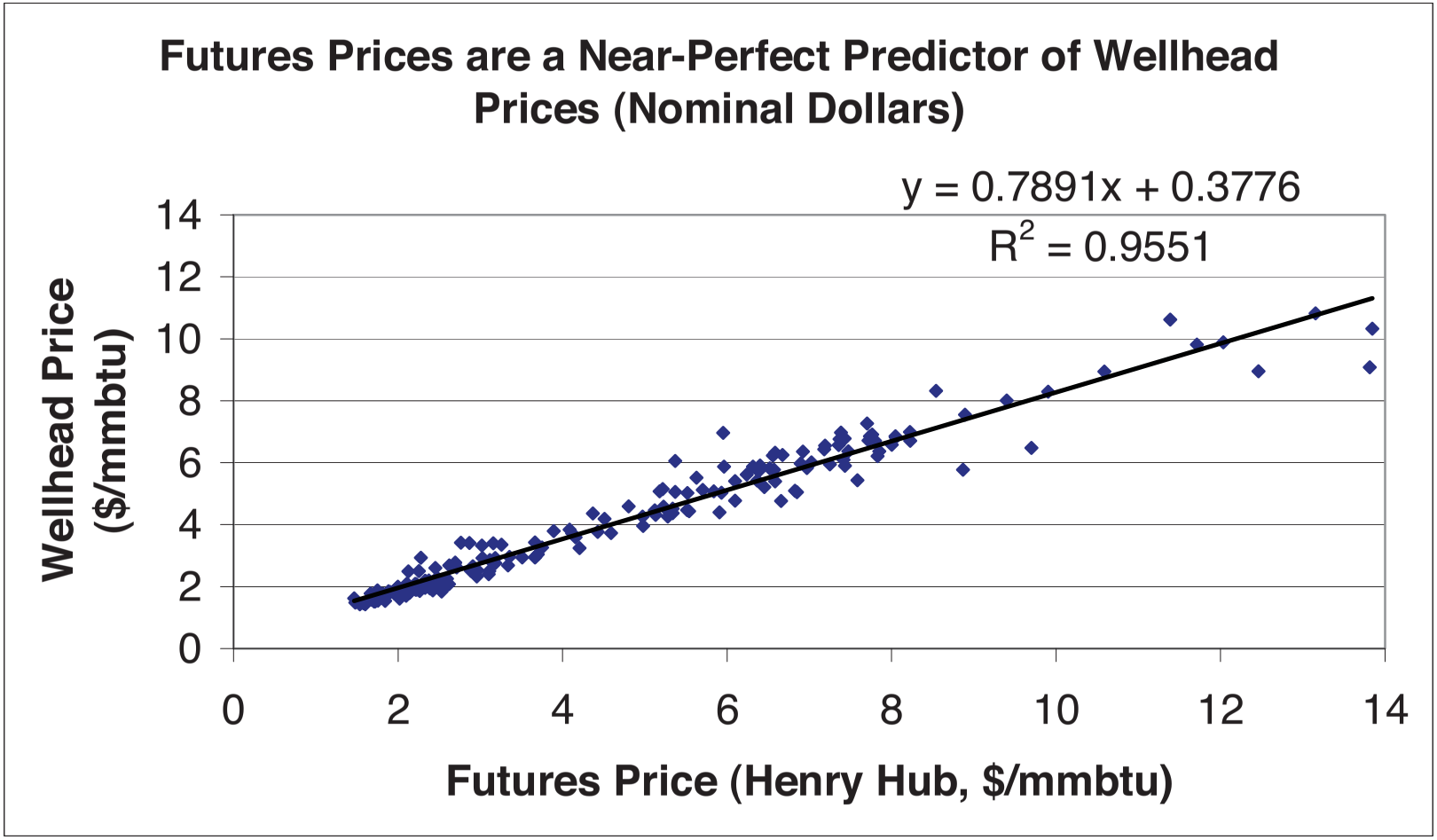
Exhibit MNC-2
Page 1 of 3
NATURAL GAS WELLHEAD, HENRY HUB AND FUTURES PRICES



Source: Energy Information Administration, Petroleum Spot Prices,
http://tonto.eia.doe.gov/dnav/pet/xls/PET_PRI_SPT_S1_M.xls
Natural Gas Future Prices, Contract 1: http://tonto.eia.doe.gov/dnav/ng/xls/NG_PRI_FUT_S1_M.xls

NATURAL GAS WELLHEAD, HENRY HUB AND FUTURES PRICES



Source: Energy Information Administration: http://tonto.eia.doe.gov/dnav/ng/ng_pri_fut_s1_m.htm, http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_nus_m.htm, visited 7/11/2009

NATURAL GAS WELLHEAD, HENRY HUB AND FUTURES PRICES

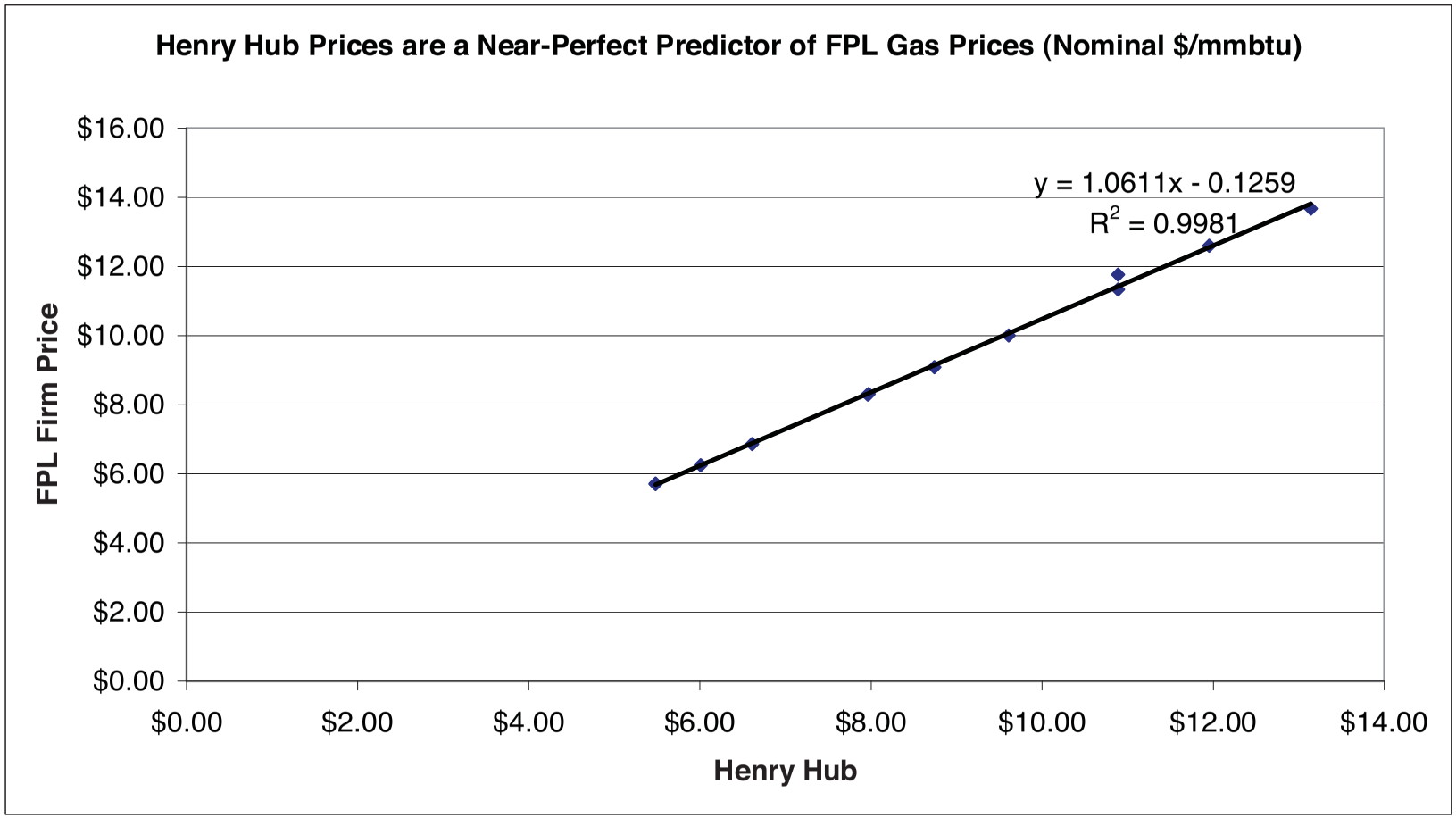
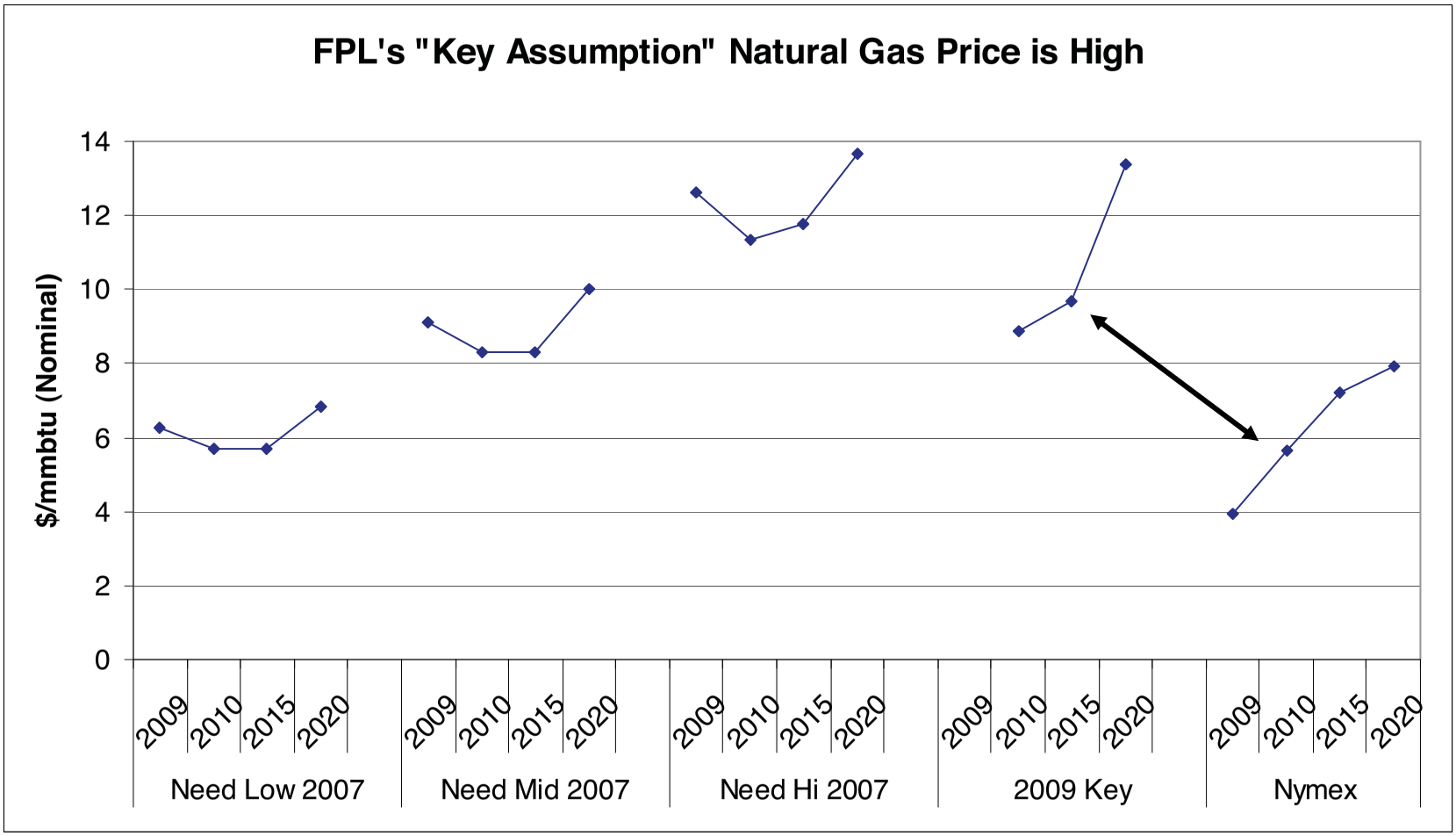


EXHIBIT 30

Source: FPL Need Study for electrical Power Docket No. 07-0650, Appendix E

Docket No. 090009-EI
Exhibit MNC-3
Page 1 of 2

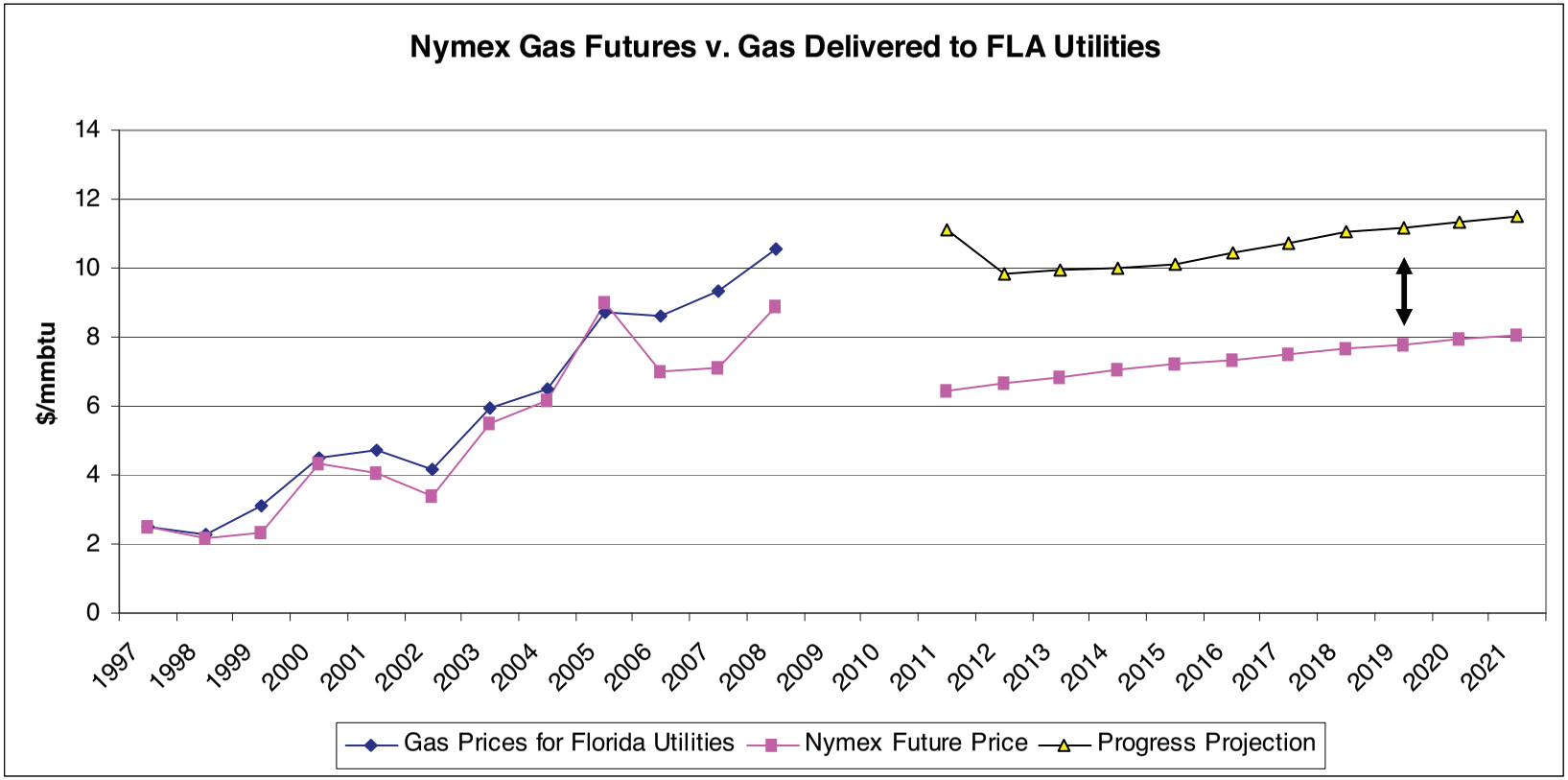
PROJECTED NATURAL GAS PRICES COMPARED TO NYMEX FUTURES PRICES



Source: FPL Need Study for Electrical Power Docket No. 07-0650, Appendix E; Nymex Futures Contract, http://www.nymex.com/ng_fut_csf.aspx, visited 7/11/2009

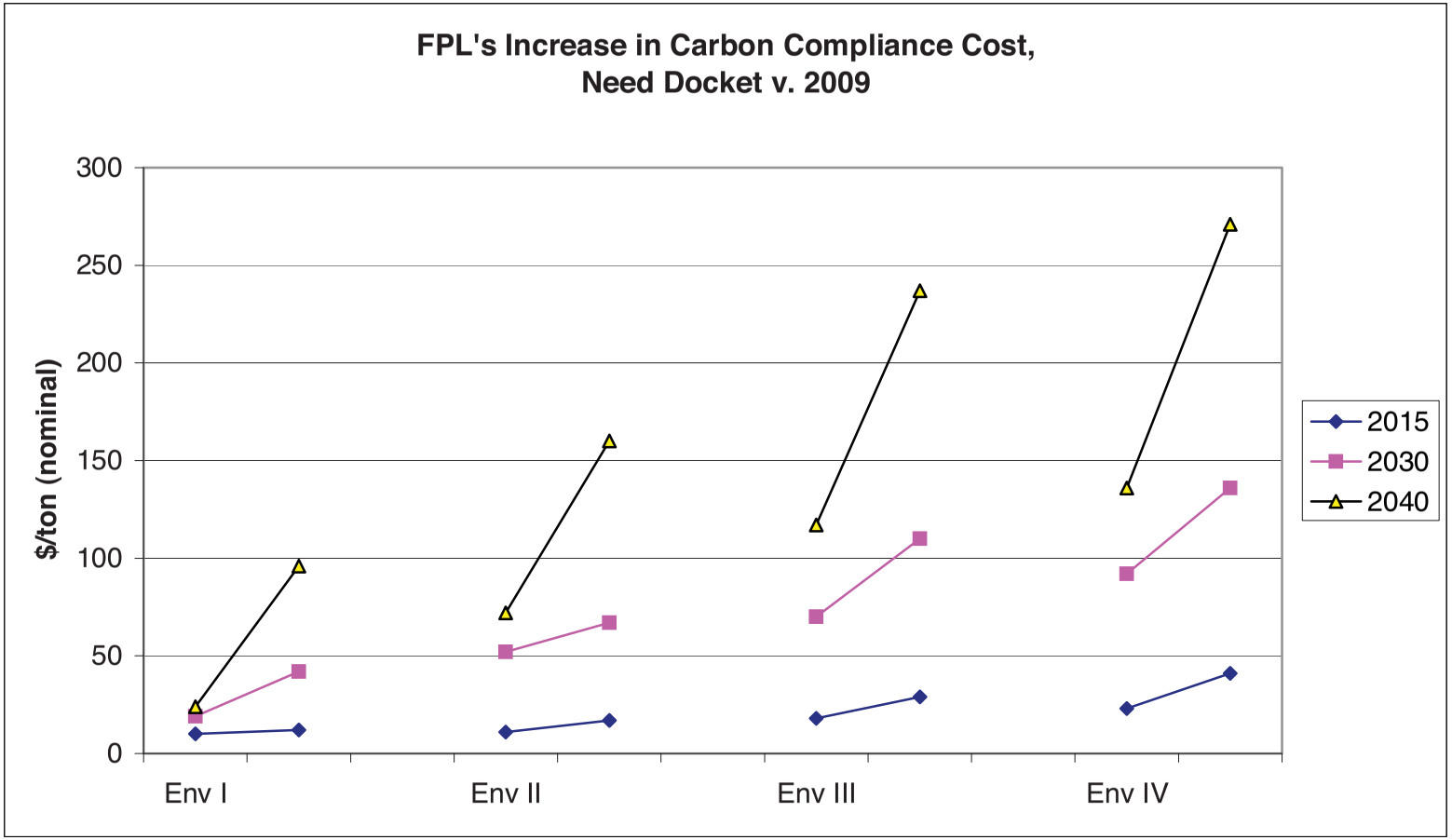
Docket No. 090009-EI
Exhibit MNC-3
Page 2 of 2

PROJECTED NATURAL GAS PRICES COMPARED TO NYMEX FUTURES PRICES



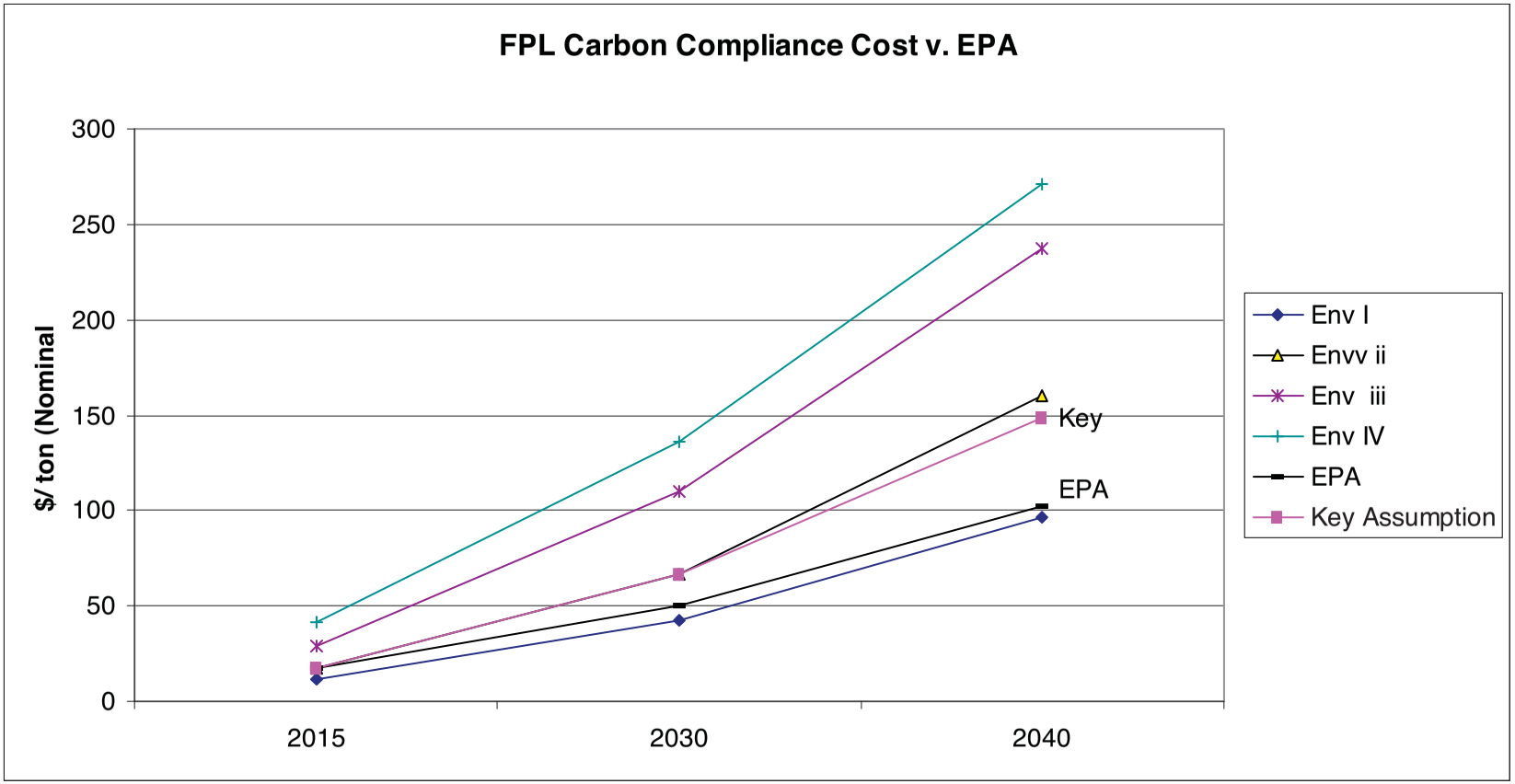
Source: Testimony of Garry Miller, Docket No. 090009, May 1, 2009, Exhibit GM-1, page 2of 2; Energy Information Administration, Annual Natural Gas Futures Contract 1, http://tonto.eia.doe.gov/dnav/ng/xls/NG_PRI_FUT_S1_M.xls
Annual Florida Gas Price Sold to Electric Power Companies; *http://tonto.eia.doe.gov/dnav/ng/hist/n3045fl3a.htm;*
FPL Need Study for electrical Power Docket No. 07-0650, Appendix E;
Nymex Futures Contract, http://www.nymex.com/ng_fut_csf.aspx, visited 7/11/2009

Docket No. 090009-EI
Exhibit MNC-4
Page 1 of 3
PROJECTIONS OF CARBON COMPLIANCE COSTS



Source: Florida Power and Light, Need Study for Electrical Power, Docket No. 070650-EI, Appendix F, page 3 of 4; Florida Power and Light Docket No. 090009 EI, OPC's Third Set of Interrogatories, Question No. 47, p 1 of 2.

Docket No. 090009-EI
Exhibit MNC-4
Page 2 of 3
PROJECTIONS OF CARBON COMPLIANCE COSTS



Source: Florida Power and Light, Docket No. 090009 EI, OPC's Third Set of Interrogatories, Question No. 47, p 1 of 2; EPA Analysis of toe American Clean Energy and Security Act of 2009 H.R. 2454 in the 111th Congress, 6/23/09, p. 14, using the highest price and converting real to nominal dollars at the 2.5% rate of inflation assumed by FPL

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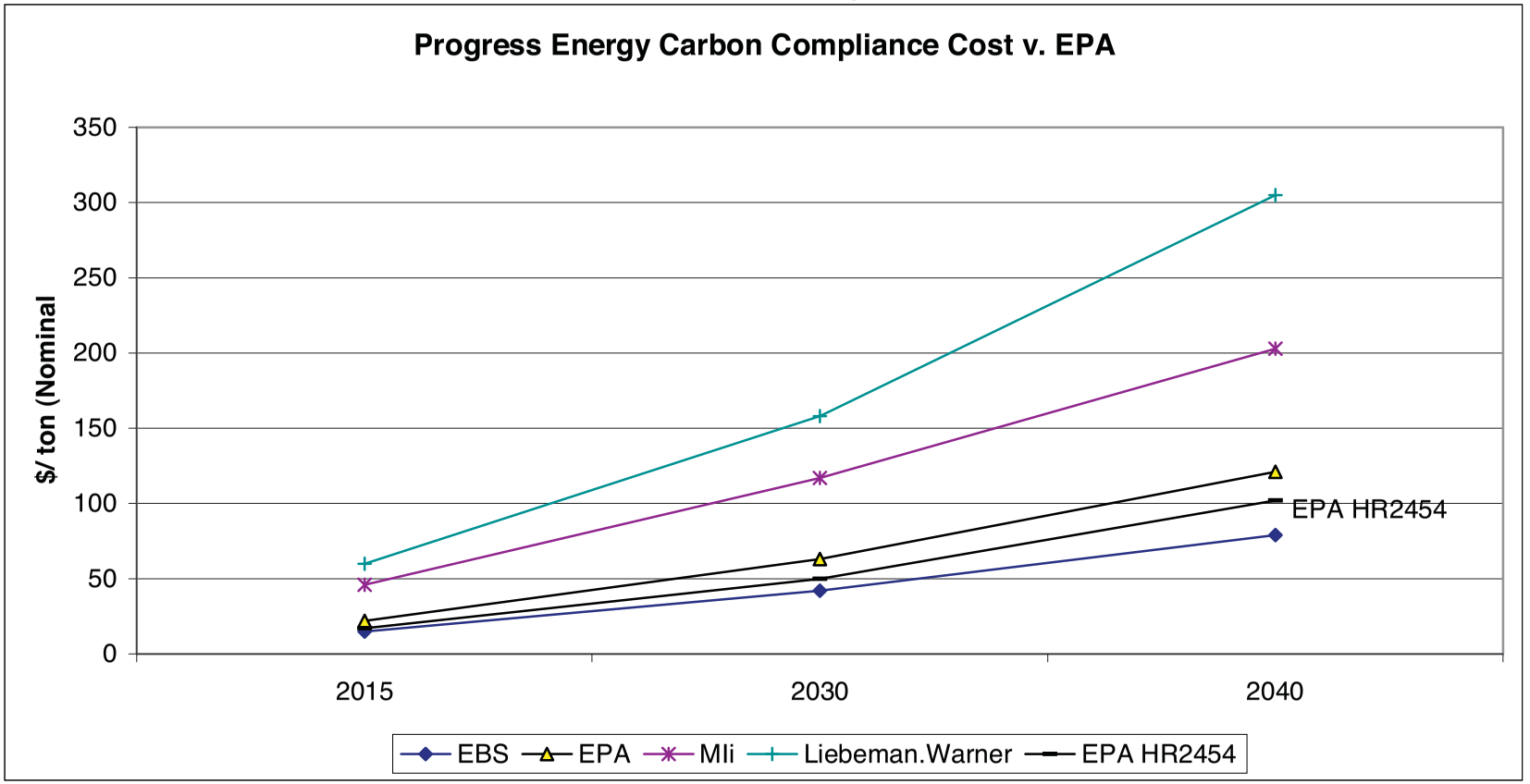
PROJECTIONS OF CARBON COMPLIANCE COSTS



Source: Testimony of Garry Miller, Docket No. 090009, May 1, 2009, Exhibit GM-1, page 1 of 1; EPA Analysis of toe American Clean Energy and Security Act of 2009 H.R. 2454 in the 111th Congress, 6/23/09, p. 14, using the highest price and converting real to nominal dollars at the 2.5% rate of inflation assumed by FPL

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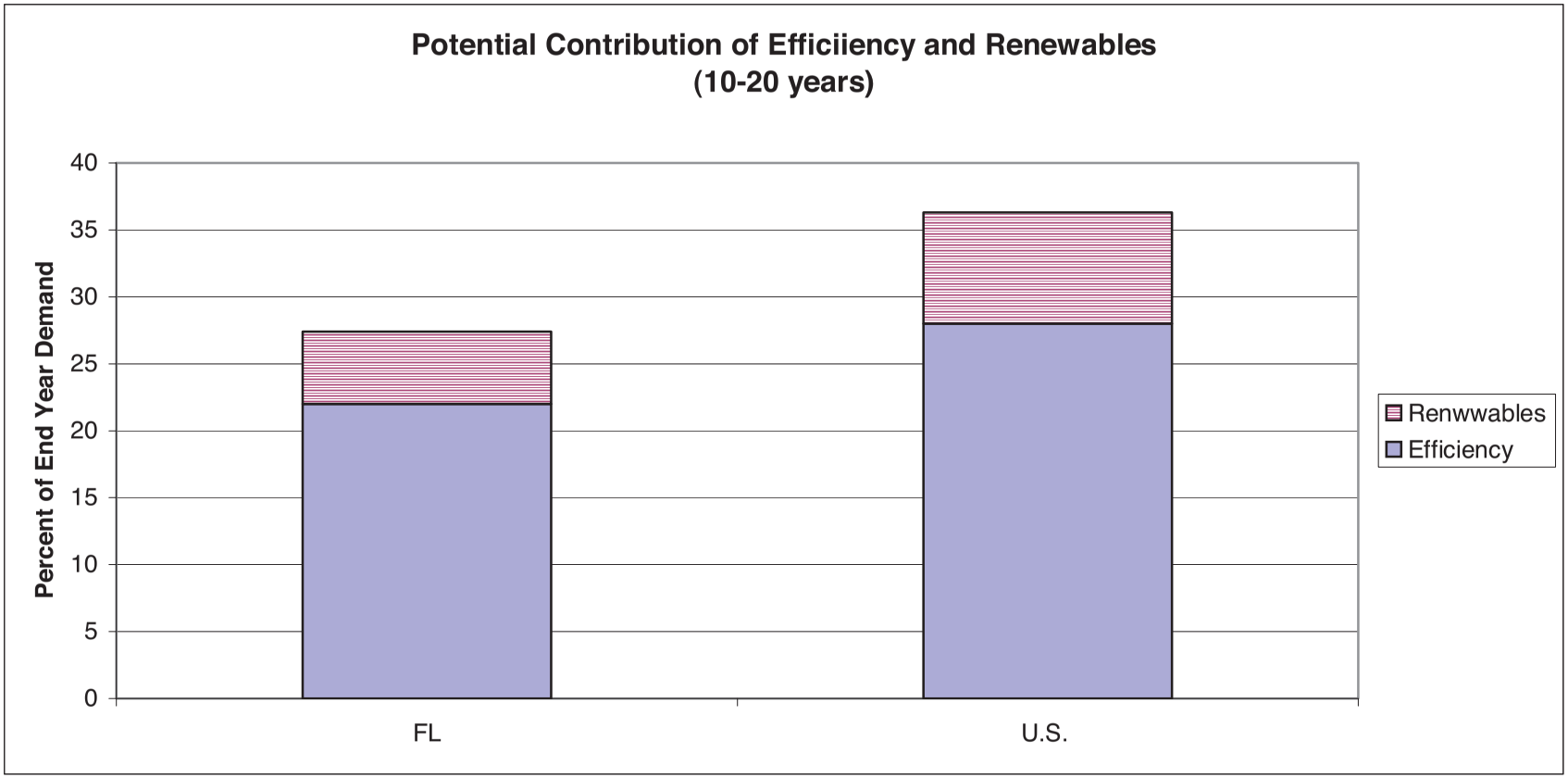
ESTIMATES OF POTENTIAL MID-TERM EFFICIENCY SAVINGS



ESTIMATES OF POTENTIAL MID-TERM EFFICIENCY SAVINGS

Source: **Florida is from Elliott, R. Neal, et al.** ***Potential for Energy Efficiency and Renewable Energy to Meet Florida's Growing Energy Demands,*** **American Council for an Energy Efficient Economy, June 2007, p. 9, 12. The national average is the simple average individual state studies in the following. American Council of an Energy- Efficient Economy, et al., 2009,** ***Shaping Ohio's Energy Future,*** **March 2009, p.13, 15, 17. American Council of an Energy-Efficient Economy, et al., 2008,** ***Energizing Virginia: Efficiency First,*** **September 2008, p. 14, 16, 18. American Council for an Energy-Efficient Economy, 2007, Howard Geller, et al.,** ***Utah Energy Efficiency Strategy: Policy Options,*** **November 2007. American Council for an Energy- Efficient Economy, 2007,** ***Energizing Virginia: Efficiency First,"*** **September 2008. Beck, Frederic, et al. 2002,** ***Powering the South: A Clean & Affordable Energy Plan for the Southern United States,*** **REPP, January 2002. Ecotope, Inc., American Council for an Energy-Efficient Economy, Tellus Institute, Inc., 2003,** ***Energy Efficiency and Conservation Measure Resource Assessment,*** **(Energy Trust of Oregon Inc., January 2003. Elliott, R. Neal, et al., 2007,** ***Potential for Energy Efficiency, Demand Response and Onsite Renewable Energy to Meet Texas' Growing Electricity Needs,*** **American Council for an Energy-Efficient Economy, March 2007. Laitner, John "Skip," Maggie Eldridge, and R. Neal Elliot, 2007,** ***The Economic Benefits of an Energy Efficiency and Onsite Renewable Energy Strategy to Meet Growing Electricity Needs in Texas,"*** **American Council for an Energy-Efficient Economy, September 2007. Optimal Energy Inc, et al., 2003,** ***Energy Efficiency and Renewable Energy Resource Development Potential in New York State,*** **August 2003. Prindle, William, R. Rooney, Tom, et al., 2004,** ***Estimating the Potential for Cost Effective Electric and Peak Demand Savings in Connecticut,*** **2004 ACEEE Summer Study on Energy Efficiency in Buildings, 2004. Southwest Energy Efficiency Project,** ***The New Mother Lode: The Potential for More Efficient Electricity Use in the Southwest,*** **November 2002, p. 3-13. Stoft, Steven,** ***The Economics of Conserved-Energy "Supply" Curves,*** **Program on Workable Energy Regulation, April 1995. Wyandotte Municipal Services Optimization Plan, Michigan Public Service Commission, Case No. U-18558, p. 6.**

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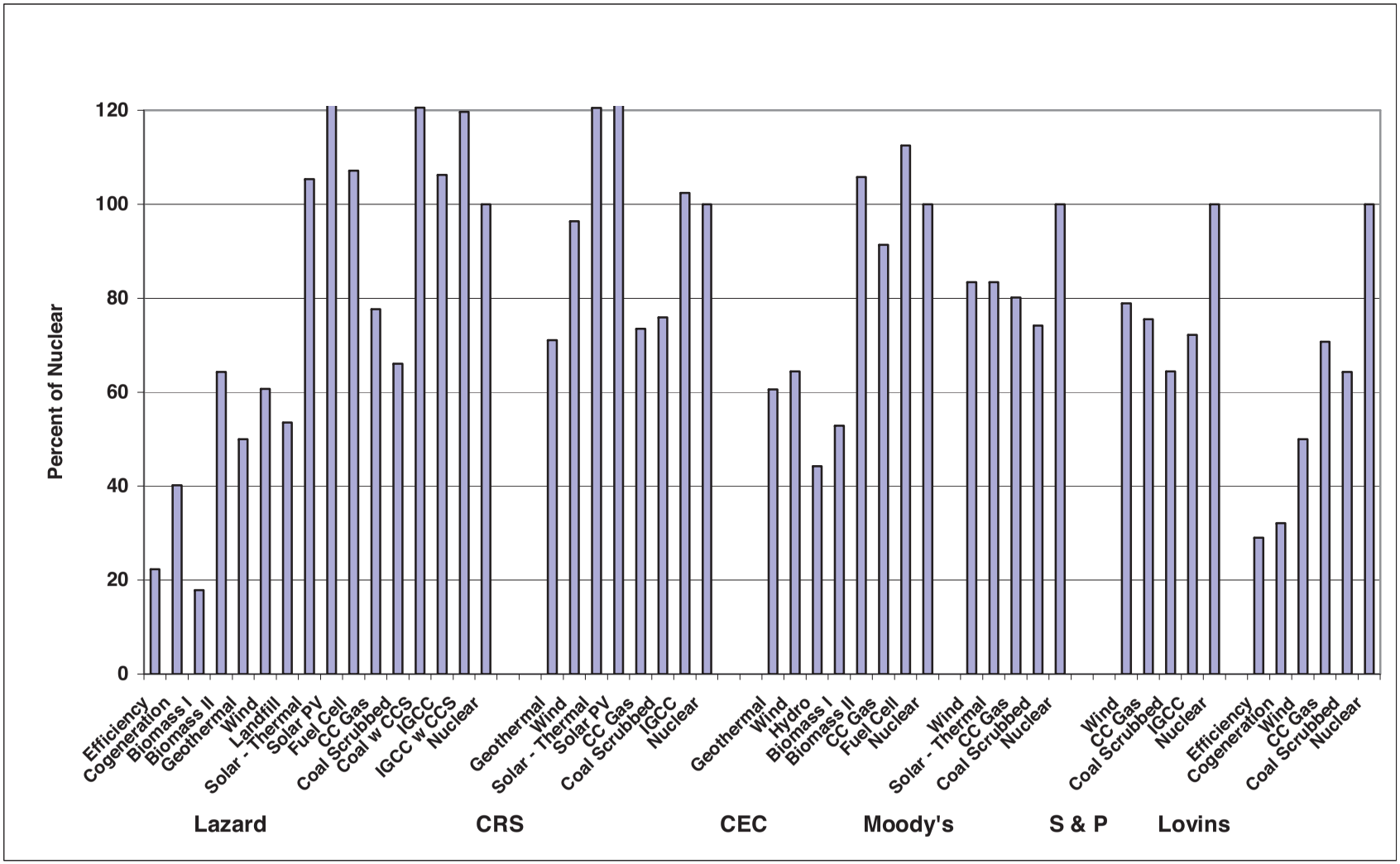
ESTIMATES OF COSTS OF ALTERNATIVES TO MEET ELECTRICITY NEEDS

(Arranged by Author; Nuclear Reactor Cost = 100%)



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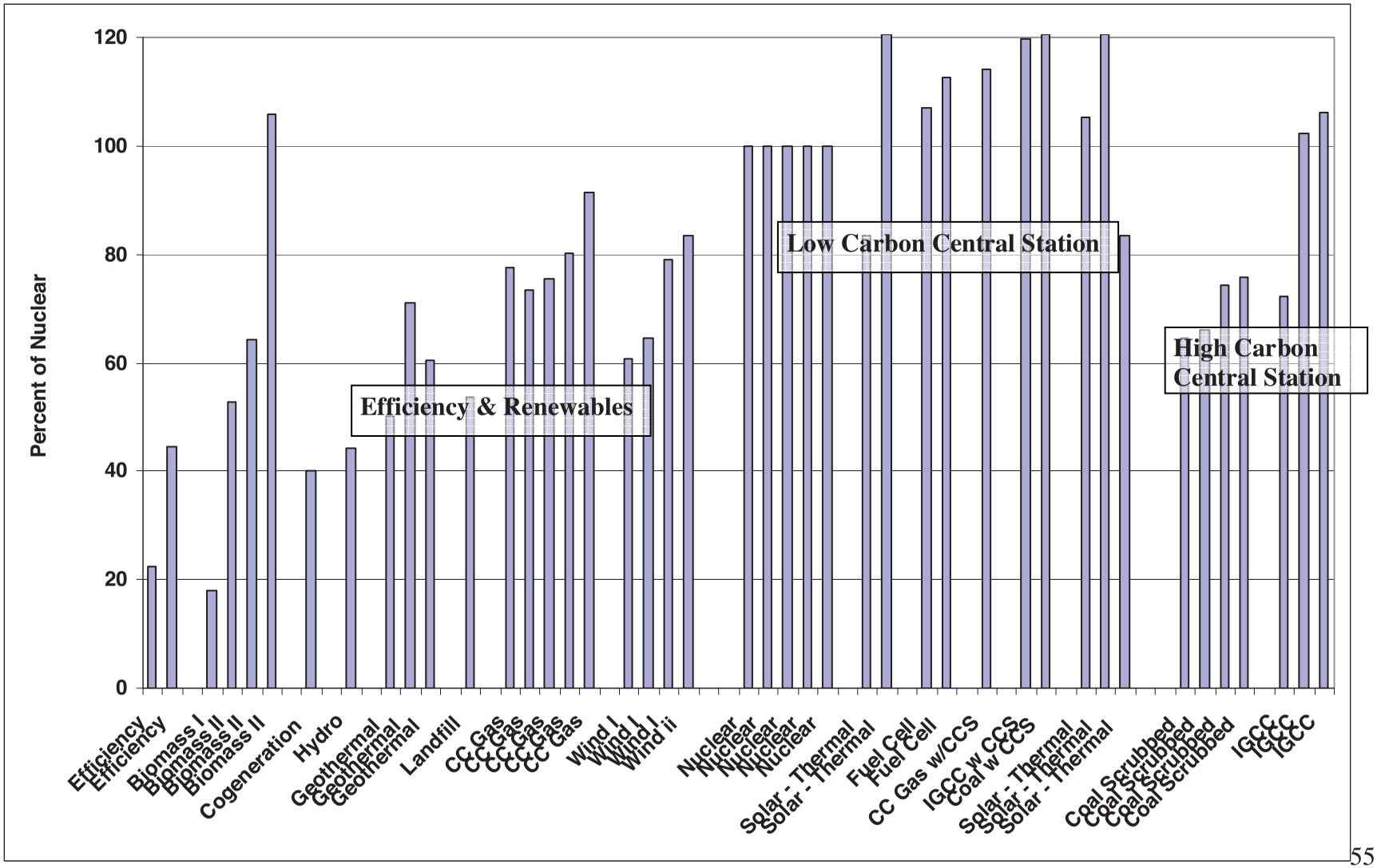
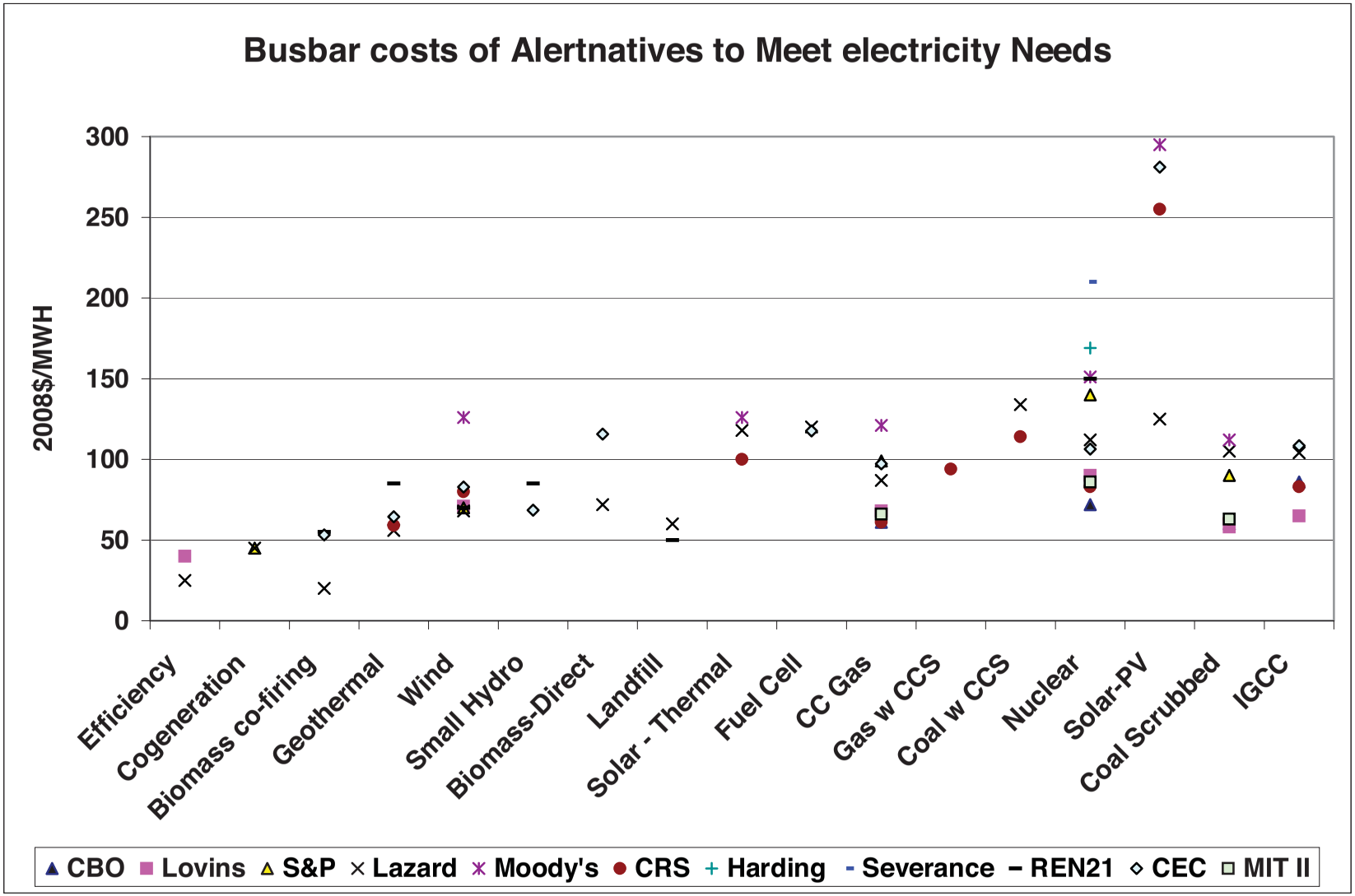
Page 2 of 3.

ESTIMATES OF COSTS OF ALTERNATIVES TO MEET ELECTRICITY NEEDS
(Arranged by Technology; Nuclear Reactor Costs = 100%)



ESTIMATES OF COSTS OF ALTERNATIVES TO MEET ELECTRICITY NEEDS



Sources: Congressional Budget Office, 2008, *Nuclear Power's Role in Generating Electricity*, May 2008, p.13; Kaplan, Stan, 2008, *Power Plants: Characteristics and Costs,* Congressional Research Service, November 13, 2008, Appendix B; Deutch, John, M. et al., 2009, *Update of the MIT 2003 Future of Nuclear Power*, MIT Energy Initiative, 2009; p. 6; Du Yangbo and John E. Parsons, 2009, *Update on the Cost of Nuclear Power, Center* for Energy and Environmental Policy Research, May 2009, MIT II; Joel Klein, 2007,Comparative *Costs of California Central Station Electricity Generation Technologies Cost of Generation Model*, ISO Stakeholders Meeting Interim Capacity Procurement Mechanisms, October 15, 2007, p. 14; Lazard, 2008, *Levelized Cost of Energy Analysis—Version 2.0*, June 2008, p. 10; **Lovins Amory, and Imran Shiekh, and Alex Markevich, 2008b, *Nuclear Power: Climate Fix or Folly?,* December 31, 2008.**Draft, p. 2; Moody's, 2008, New Nuclear Generating Capacity: Potential Credit Implications for U.S. Investor Owned Utilities, May 2008, p. 15; **Renewable Energy Policy Network for the 21st century, 2008, *Renewables 2007: Global Status Report,* 2008; Severance, Craig A. 2009, *Business Risks and Costs of New Nuclear Power*, January 2, 2009;** Standard and Poors, 2008b, *Assessing the Credit Risk of Competing Technologies for New U.S. Nuclear Power Plants*, August 13, 2008, p. 11.

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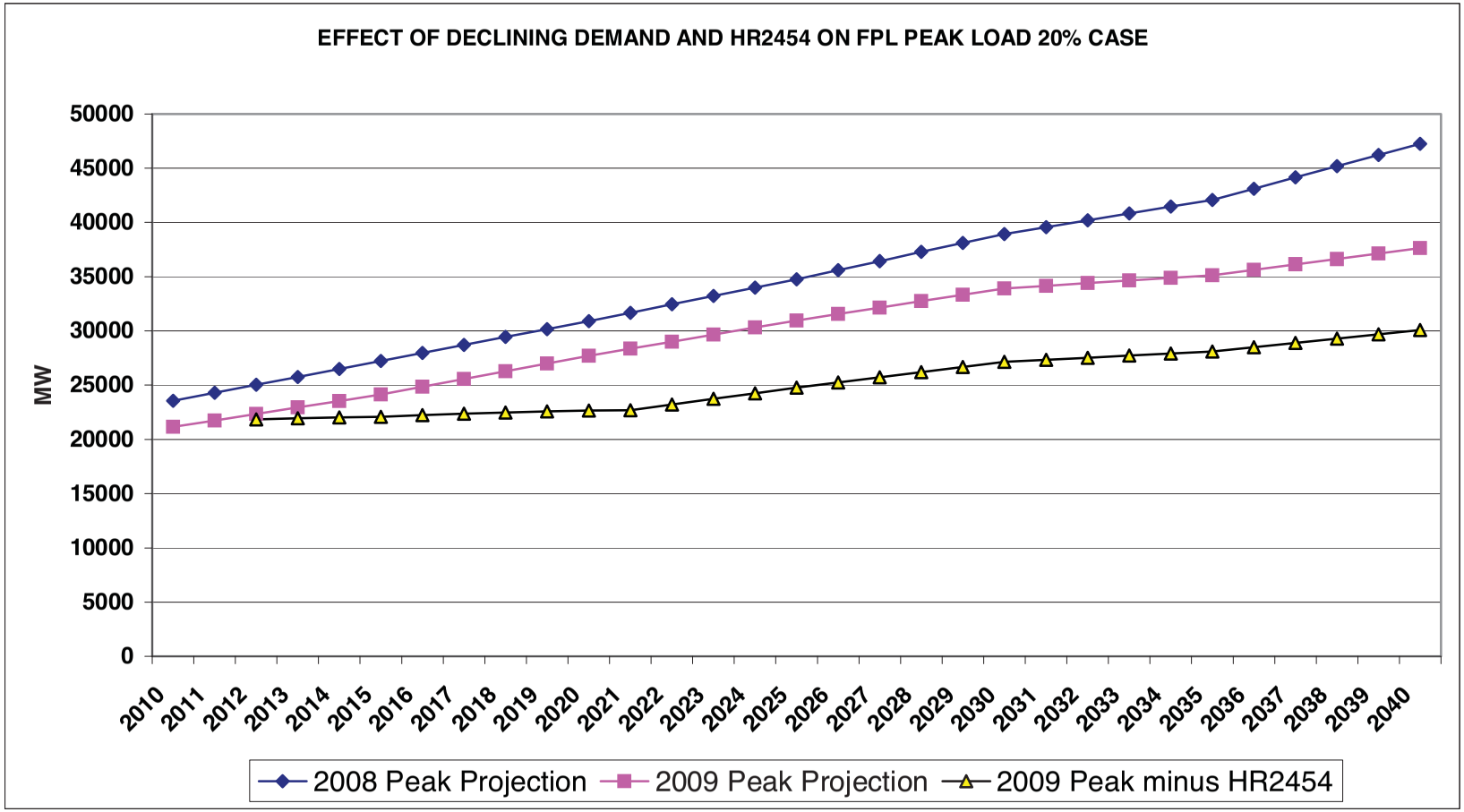
IMPACT OF CLIMATE POLICY ON PEAK LOAD: FPL



Source: Direct Testimony of Steven R. Sims, Docket No. 090009-EI, SRS-1; linear interpolation of five-year interval data. H.R. 2454 is set at 20% below 2009 Peak Projection

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Exhibit MNC-7
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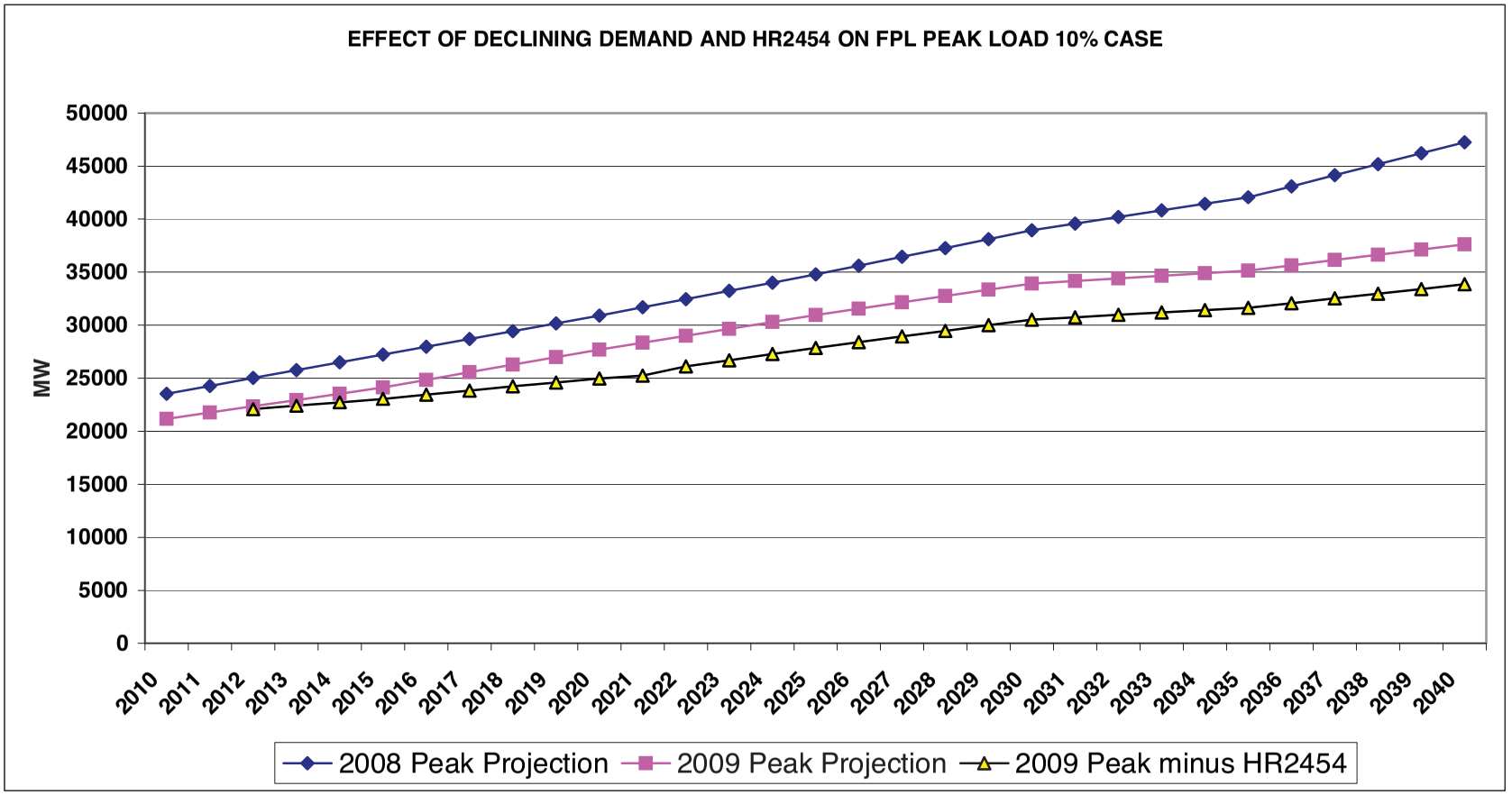
IMPACT OF CLIMATE POLICY ON PEAK LOAD: FPL



Source: Direct Testimony of Steven R. Sims, Docket No. 090009-EI, SRS-1; linear interpolation of five-year interval data. H.R. 2454 is set at 20% below 2009 Peak Projection

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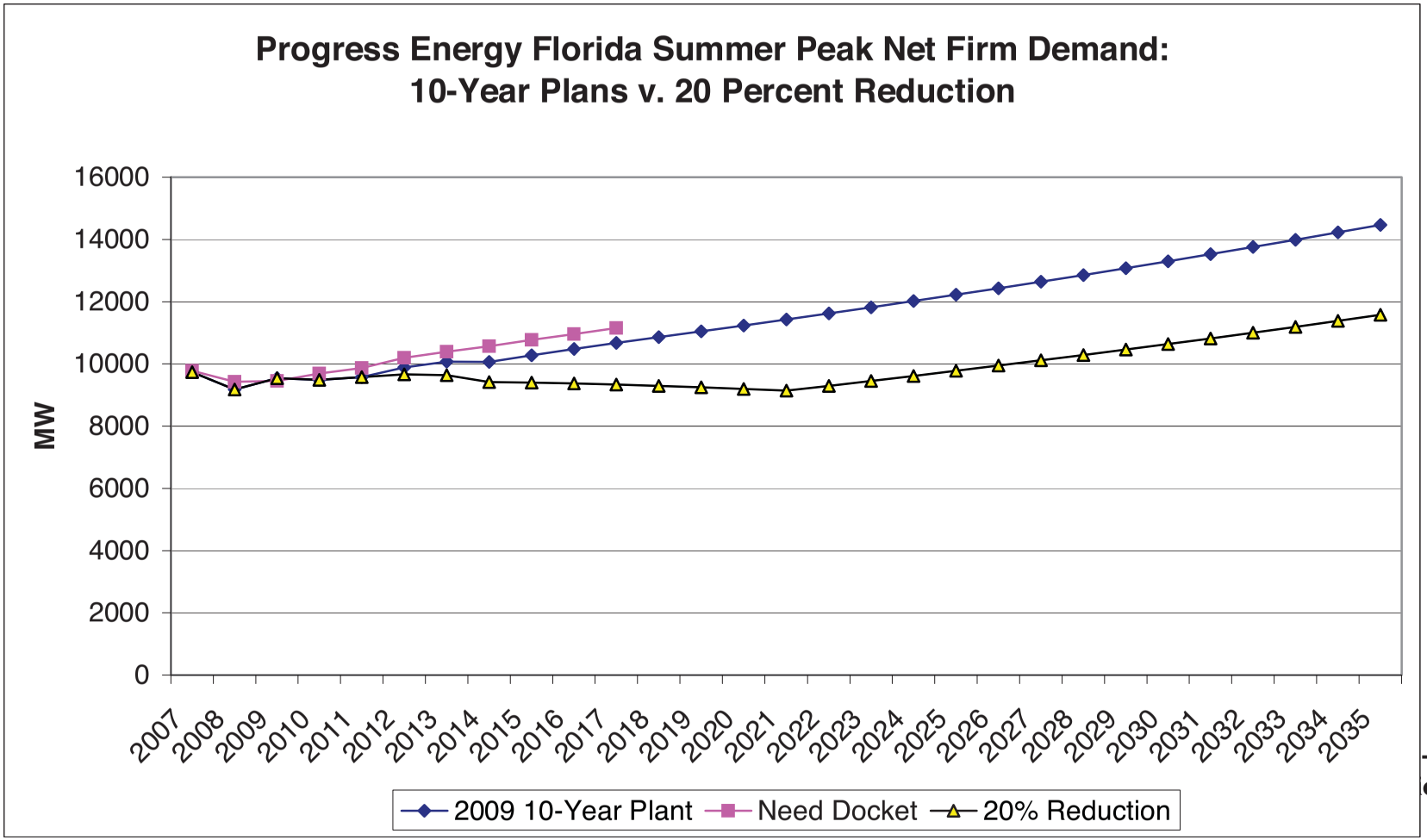
IMPACT OF CLIMATE POLICY ON PEAK LOAD: PROGRESS



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on

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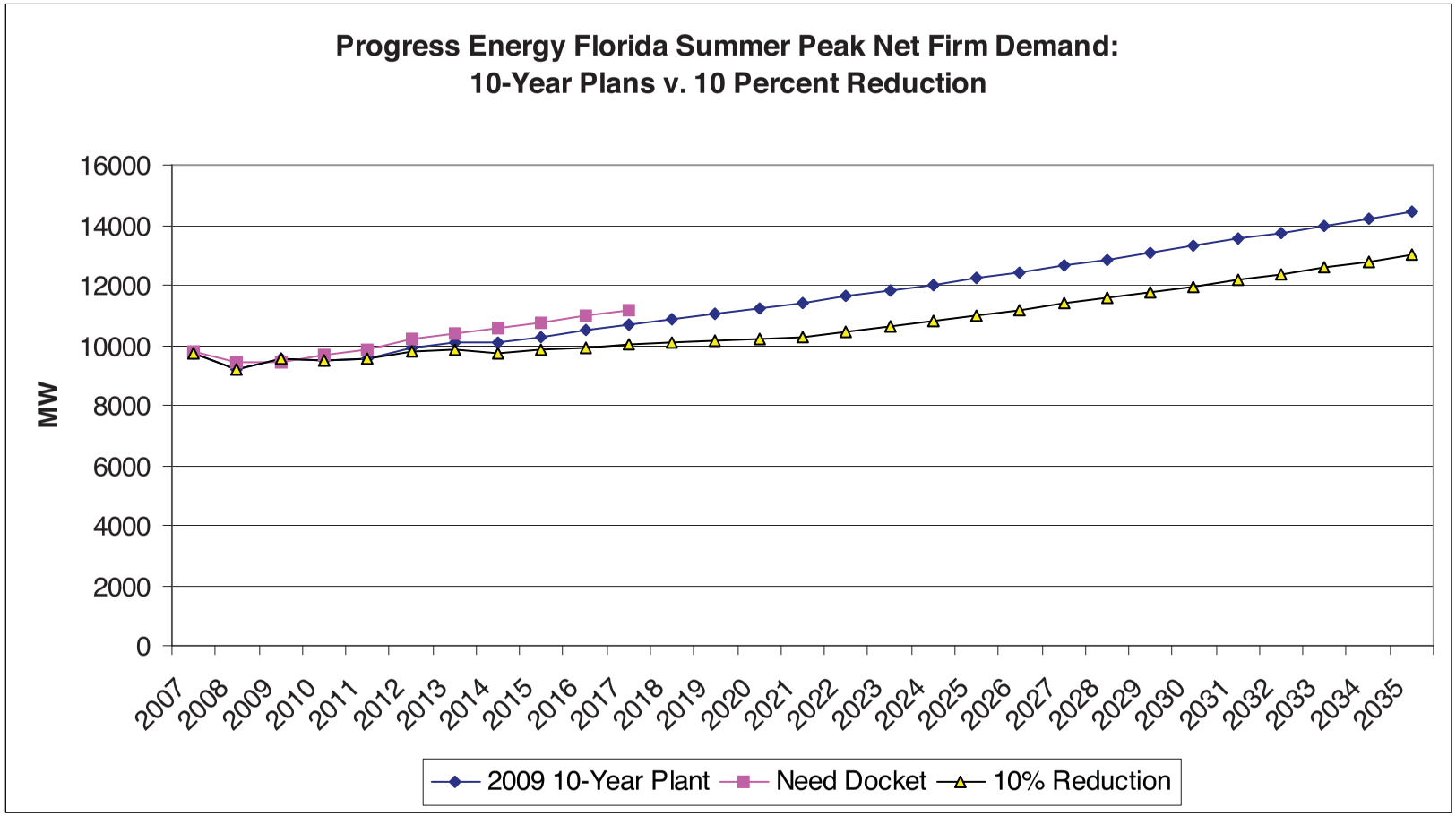
IMPACT OF CLIMATE POLICY ON PEAK LOAD: PROGRESS



Source: 2008 10-year plan, p. 2-7; 2009 10-year plan, p. 2-6.
H.R. 2454 set at 20% of projection

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ESTIMATES OF NUCLEAR REACTOR OVERNIGHT, COSTS: 2001-20089
(2008$ derived with the GDP deflator)

Original Estimate	Date of Estimate	Source of Estimate	Overnight Cost kW		
			Low	Mid	High
SAIC	2001	U of C	2300	2300	2300
SAIC	2001	U of C	1840	1840	1840
SAIC	2001	U of C	1570	1570	1570
SAIC	2001	U of C	1295	1295	1295
Scully	2002	U of C	1434	1434	1674
Sandia	2002	U of C	2131	2131	2131
EIA	2003	U of C	215	2015	2217
EIA	2003	U of C	1241	1563	1784
MIT	2003	MIT	1175	2350	
U of C	2004	U of C	1380	1725	2070
TVA	2005	TVA		1853	
CEC	2007	CEC		3021	
Keystone	2007	Keystone	3018		3018
Harding	2007	Harding		3329	
South Texas 3&4	2007	CRS	2931	3214	3754
Turkey Point 3&4	2007	FPL	3179	3678	4644
Calvert 3	2007	CRS		5778	
Levy 1&2	2008	CRS		4260	
Summer 2&3	2008	CRS		4387	
Vogtle	2008	GA PUC		4381	
Callaway 1	2008			4250	
Duke	2008	Lovins		4800	
S&P	2008	S & P		4100	
EIA	2008	EIA		3400	
CRS	2008	CRS		3900	
CBO	2008	CBO		2358	
Lazard	2008	Lazard	3750		5250
Moody's	2008	Moody's		6250	
Severance	2008	Severance	3596	4070	
MIT II	2009	MIT		4092	
Bell Bend	2009	PPL			9375
Harding - Medium	2009	Harding 09	5524	7263	9217
Harding -	2009	Harding	6189	8184	10383

High		09			

ESTIMATES OF NUCLEAR REACTOR OVERNIGHT, COSTS: 2001-20089

Sources: Congressional Budget Office, 2008, *Nuclear Power's Role in Generating Electricity*, May 2008, p.13; Deutch, John, M. et al., 2009, *Update of the MIT 2003 Future of Nuclear Power*, MIT Energy Initiative, 2009; p. 6; Du Yangbo and John E. Parsons, 2009, *Update on the Cost of Nuclear Power, Center* for Energy and Environmental Policy Research, May 2009. Energy Information Administration, 2009, "Electricity Market Module," *Annual Energy Outlook*, March 2009, p. 89. Harding, Jim, 2007, "Economics of Nuclear Power and Proliferation Risks in a Carbon-constrained World," *Public Utilities Fortnightly*, December 2007, p. 71;Harding, Jim, 2009, Economics of Nuclear Reactors and Alternatives, Carnegie/NPEC Conference, February 2009; p. 7; Joskow, Paul, 2006, *Prospects for Nuclear Power a U.S. Perspective*, May 19, 2006; Kaplan, Stan, 2008, *Power Plants: Characteristics and Costs,* Congressional Research Service, November 13, 2008, Appendix B.; Keystone Center, 2007, *Nuclear Power Joint Fact-Finding*, June 2007, p. 42; Joel Klein, 2007,Comparative *Costs of California Central Station Electricity Generation Technologies Cost of Generation Model*, ISO Stakeholders Meeting Interim Capacity Procurement Mechanisms, October 15, 2007, p. 14; Lazard, 2008, *Levelized Cost of Energy Analysis—Version 2.0*, June 2008, p. 10; Lovins Amory, and Imran Shiekh, and Alex Markevich, 2008b, *Nuclear Power: Climate Fix or Folly?,* December 31, 2008, Draft, p. 2; MIT, 2003 *The Future of Nuclear Power*, 2003, p. 42; Moody's, 2008, New Nuclear Generating Capacity: Potential Credit Implications for U.S. Investor Owned Utilities, May 2008, p. 15; Schlissel, David and Bruce Biewald, 2008, *Nuclear Power Plant Construction Costs,* Synapse, July 2008, p. 2; Severance, Craig A. 2009, *Business Risks and Costs of New Nuclear Power*, January 2, 2009; Standard and Poors, 2008b, *Assessing the Credit Risk of Competing Technologies for New U.S. Nuclear Power Plants*, August 13, 2008, p. 11; Tennessee Valley Authority, 2005, ABWR Cost/Schedule/COL Project at TVA's Bellafonte Site, August 2005, p. I-7; University of Chicago, 2004, *The Economic Future of Nuclear Power: A Study Conducted* at the University of Chicago, August 2004.

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NUCLEAR OPERATORS, REACTOR CANCELLATIONS AND MOODY'S DOWNGRADES

Operator	Current Operator	Cancelled Plant	Moody's Downgrade	Period	Highest Grade	Lowest Grade	Ranks Moved
Alabama Power & Light		1	1	1975-1987	A2 FMB	Baa3	4
Amerern/Union electric	1						
Indiana Michigan/AEP	1		1	1973-1979	A2 FMB	Baa2	3
Arizona Public Service Co.	1	1	1	1981-1993	A2 FMB	Baa3	4
Baltimore Gas & Electric Co./Constellation	1	1	1	1974-1979	A2 FMB	A2	--
Boston Edison Co.		1					
Carolina Power & Light Co.	1	1					
Central Maine Power		1					
Cincinnati Gas & Electric Co.		1					
Cleveland Electric Illuminating. Co./First Energy	1	1	1	1981-1993	Aa2 FMB	Baa3	7
Commonwealth Edison Co./Exelon	1		1	1968-1990	Aa2 FMB	Baa1	5
Connect. Power & Light		1		1972-1978	Aa2 FMB	A2	3
Consolidated Edison Co.		1	1	1972-1978	A2 FMB	Baa2	3
Consumers Power Co.		1	1	1969-1974	Aaa FMB	Aa2	2
Delmarva Power & Light Co.		1					
Detroit Edison Co.	1	1	1	1985-1992	Baa1 SS	Baa2	1
Duke Power Co.	1	1					
Duquesne Power			1	1974-1988	Aa2 FMB	Baa2	6
Florida Power & Light Co.	1	1	1	1972-1984	Aa2 FMB	A2	3
Florida Power Corp.		1					
Georgia Power Co./Southern Company	1	1	1	1975-1990	Baa2 FMB	Baa2	--
Gulf States Utilities Co./Entergy		1		1980-1988	A2 FMB	Ba3	7

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Houston Lighting & Power Co.		1	1	1987-1994	A2 FMB	A3	1
Illinois Power Co/Amergen	1	1	1	1984-1989	A2 FMB	Baa3	4
Iowa Power & Light Co.		1		1973-1977	Aa2 FMB	Baa2	6
Jersey Central Power & Light Co./First Energy		1	1	1968-1980	A2 FMB	Ba2	6
Kansas City G & E				1982-1986	Baa2 FMB	Baa3	1
Long Island Lighting Co.		1	1	1972-1990	Aa2 FMB	B2	12
Metropolitan Edison/Amergen	1		1	1973-1984	A2 FMB	B2	9
Louisiana Power & Light/Entergy	1	1	1	1983-1988	Baa3 FMB	Ba2	2
New England Power Co.		1	1	1971-1992	Aa2 FMB	A1	2
Niagara Mohawk			1	1968-1988	Aaa FMB	Baa2	8
New York State Electric & Gas		1					
Northeast Nuclear Energy Co.		1	1				
Northern Indiana Public Service Co.		1		1973-1985	Aa2 FMB	Baa2	6
Northern States Power Co.		1		1970-1976	Aa2 FMB	Aa2	--
Nuclear Management Company	1						
Ohio Edison Co./First Energy	1	1	1				
Pacific Gas & Electric Co.	1	1	1	1983-1988	A1 FMB	A1	--
Philadelphia Electric Co.		1	1	1973-1991	Aaa FMB	Baa3	9
PPL	1			1982-1986	Aa2 FMB	A2	3
Portland General Electric Co.		1					
Potomac Electric Power Co.		1					
Power Authority of the State of New York		1					
Progress FLA	1			1975-1981	A2 FMB	A2	--
Progress Carolina	1			1970-1987	Aa2 FMB	Baa2	6
Public Service Colorado			1	1976-1990	Aa2 FMB	A3	4
Public Service Co. of New Hampshire		1	1	1980-1991	Baa2 FMB	Caa2	9
Public Service Company of Oklahoma		1					
Public Service Electric & Gas Co.	1	1	1	1973-1987	Aa2 FMB	Aa3	1
Public Service of Indiana		1					
Puerto Rico Water Resources Authority		1					

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Puget Sound Power & Light Co.		1	1	1978-1986	Baa2 FMB	A3	2
Rochester Gas & Electric Corp.		1	1	1969-1975	Aa2 FMB	A2	3
San Diego Gas & Electric Co.		1					
SC Electric & Gas			1	1979-1985	A2 FMB	A1	1
Southern Company	1						
Southern California Edison Co.	1	1	1	1979-1985	Aa2 FMB	Aa2	--
System Energy Resources Inc.		1					
Tennessee Valley Authority		1					
TXU	1						
Toledo Edison Co./First Energy	1	1	1				
Union Electric Co.		1	1				
Virginia Electric & Power Co./dominion	1	1	1				
Wisconsin Electric Power Co.		1	1				
Woolf	1						
Total Unique	22	50	35				

Source: Moody's "New Nuclear Generation: Ratings Pressure Increasing," Special Comment, June 2009; pp. 11-12; Cancelled plants are from http://clonemaster.homestead.com/files/cancel.htm; Current owners from http://www.nei.org/resourcesandstats/documentlibrary/reliableandaffordableenergy/graphicsandcharts/usnuclearpowerplantownersoperatorsandholdingcompanies/; as Moody's only rated investor owned utility reactors owned or cancelled by rural co-ops of munis are not included.

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STANDARD AND POOR'S CREDIT PROFILE CONSIDERATIONS

Business risk profile

- New Technology Risk ⇧
- Construction Risk ⇧
- How much risk is mitigated by EPC contract? ⇧⇩
- Nuclear operating exposure will increase ⇧
- Regulatory framework for recovery of investment ⇧

Financial risk Profile

- Debt imputation: 25% for projects vs. 50% for regulated utilities ⇧
- Even with DOE guarantee, debt loads can increase significantly ⇧
- 80/20 vs. 60/40 capital structure ⇧
- Despite DOE guarantee, debt service will be fully accounted for ⇧
- Ability to recover cash return on work in progress ⇩

Source: Dimitri Mikas, "Financing New Nuclear Construction & Implications for Credit Quality," *Is there a Nuclear Renaissance,* p. 20 Standard and Poor's May 28, 2009, arrows point in the direction of the impact on risk

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DIVERSITY OF RESOURCE UNDER VARIOUS TECHNOLOGY SCENARIOS

Resource	FPL No Nuclear % of total	FPL Gas % of total	FPL Efficiency % of total	PEF No Nuclear % of total	PEF Gas % of total	PEF Efficiency % of total
Coal	6.95	6.95	5.91	24	20	20.4
Gas	73.70	70.00	62.65	56	36	47.6
Oil	1.75	1.95	1.49	5	3	4.25
Nuclear	17.30	20.80	14.71	12	38	10.2
Other	0.30	0.30	7.00	3	3	8
Efficiency			8.00			9
HHI	5782	5385	4290	3890	3158	2949

Source: FPL, average of scenarios at FPL Need Study for electrical Power Docket No. 07-0650, p. 117, PEF: Testimony of John Benjamin Crisp, Docket No. 080148-EI, JBC-8, page 1 of 1;

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THE $1/KW COST FACTOR

Total Cost Diff. 2007	Break Even Cost 2007	Implicit $1/kW Factor 2007	Total Cost Diff. 2009	Break Even Cost 2009	Implicit $1/kW Factor 2009	2009 Breakeven @2007 Factor	Factor Change as % of Break even change
6325	3206	1.972863	9909	5234	1.893198	5022.649	10.42165
8965	4543	1.973366	11943	6308	1.89331	6052.097	14.49876
9994	5065	1.973149	12892	6810	1.893098	6533.718	15.83277
10512	5327	1.973343	14352	7581	1.893154	7272.936	13.66743
11207	5680	1.973063	15334	8099	1.89332	7771.671	13.53157
12148	6157	1.973039	13981	7385	1.893162	7086.024	24.3466
13222	6701	1.973138	14965	7905	1.893106	7584.364	26.63087
13711	6949	1.97309	16377	8650	1.893295	8300.18	20.56553
14367	7281	1.973218	17415	9199	1.893141	8825.685	19.46377

Source: Testimony of Steven R. Sims, Docket No. 070650-EI, Exhibits SRS-7 and SRS-8; Direct Testimony of Steven R. Sims, Docket No. 090009-EI, Table 45

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THE NARROW MARGIN IN FPL'S BREAKEVEN ANALYSIS

Nuclear w/o Capital	Capital Cost (Case A)	No Nuclear Gas	Nuclear advantage % of Gas
122528	131940	132437	0.4
143521	152933	155464	1.6
153171	162583	166063	2.1
168265	177677	182617	2.7
164719	174131	190583	8.6
175249	184661	178700	-3.3
174367	183779	189332	2.9
189638	199050	206015	3.4
196670	206082	214085	3.7

Source: Direct Testimony of Steven R. Sims, Docket No. 090009-EI, Table 45; Capital costs calculated as Case A multiplied by $1/kW cost factor.

APPENDIX A
CV OF DR. MARK COOPER WITH ENERGY RELATED ACTIVITIES

MARK N. COOPER

504 HIGHGATE TERRACE

SILVER SPRING, MD 20904

(301) 384-2204

markcooper@aol.com

EDUCATION:

Yale University, Ph.D., 1978, Sociology

University of Maryland, M.A., 1974, Sociology

City College of New York, B.A., 1968, English

PROFESSIONAL EXPERIENCE:

President, Citizens Research, 1983 - present

Senior Fellow for Economic Analysis, Institute for Energy and the Environment, Vermont Law School - Present

Research Director, Consumer Federation of America, 1983 - present

Fellow, Stanford Center on Internet and Society, 2000 - Present

Fellow, Donald McGannon Communications Research Center, Fordham University, 200 5-present

Director, Digital Society Project, Consumer Federation of America, 2002 - Present

Associated Fellow, Columbia Institute on Tele-Information, 2003-2006

Principle Investigator, Consumer Energy Council of America, Electricity Forum, 1985-1994

Director of Energy, Consumer Federation of America, 1984-1986

Director of Research, Consumer Energy Council of America, 1980-1983

Consultant, Office of Policy Planning and Evaluation, Food and Nutrition Service, United States Department of Agriculture, 1981-1984

Consultant, Advanced Technology, Inc., 1981

Technical Manager, Economic Analysis and Social Experimentation Division, Applied Management Sciences, 1979

Research Associate, American Research Center in Egypt, 1976-1977

Research Fellow, American University in Cairo, 1976

Staff Associate, Checchi and Company, Washington, D.C., 1974-1976

Consultant, Division of Architectural Research, National Bureau of Standards, 1974

Consultant, Voice of America, 1974

Research Assistant, University of Maryland, 1972-1974

TEACHING EXPERIENCE:

Lecturer, Washington College of Law, American University, Spring, 1984 - 1986, Seminar in Public Utility Regulation

Guest Lecturer, University of Maryland, 1981-82, Energy and the Consumer, American University, 1982, Energy Policy Analysis

Assistant Professor, Northeastern University, Department of Sociology, 1978-1979, Sociology of Business and Industry, Political Economy of Underdevelopment, Introductory Sociology, Contemporary Sociological Theory; College of Business Administration, 1979, Business and Society

Assistant Instructor, Yale University, Department of Sociology, 1977, Class, Status and Power

Teaching Assistant, Yale University, Department of Sociology, 1975-1976, Methods of Sociological Research, The Individual and Society

Instructor, University of Maryland, Department of Sociology, 1974, Social Change and Modernization, Ethnic Minorities

Instructor, U.S. Army Interrogator/Linguist Training School, Fort Hood, Texas, 1970-1971

PROFESSIONAL ACTIVITIES:

Member, Advisory Committee on Appliance Efficiency Standards, U.S. Department of Energy, 1996 - 1998

Member, Energy Conservation Advisory Panel, Office of Technology Assessment, 1990-1991

Fellow, Council on Economic Regulation, 1989-1990

Member, Increased Competition in the Electric Power Industry Advisory Panel, Office of Technology Assessment, 1989

Participant, National Regulatory Conference, The Duty to Serve in a Changing Regulatory Environment, William and Mary, May 26, 1988

Member, Subcommittee on Finance, Tennessee Valley Authority Advisory Panel of the Southern States Energy Board, 1986-1987

Member, Electric Utility Generation Technology Advisory Panel, Office of Technology Assessment, 1984 - 1985

Member, Natural Gas Availability Advisor Panel, Office of Technology Assessment, 1983-1984

Participant, Workshop on Energy and the Consumer, University of Virginia, November 1983

Participant, Workshop on Unconventional Natural Gas, Office of Technology Assessment, July 1983

Participant, Seminar on Alaskan Oil Exports, Congressional Research Service, June 1983

Member, Thermal Insulation Subcommittee, National Institute of Building Sciences, 1981-1982

Round Table Discussion Leader, The Energy Situation: An Open Field For Sociological Analysis, 51st Annual Meeting of the Eastern Sociological Society, New York, March, 1981

Member, Building Energy Performance Standards Project Committee, Implementation Regulations Subcommittee, National Institute of Building Sciences, 1980-1981

Participant, Summer Study on Energy Efficient Buildings, American Council for an Energy Efficient Economy, August 1980

Member, University Committee on International Student Policy, Northeastern University, 1978-1979

Chairman, Session on Dissent and Societal Reaction, 45th Annual Meeting of the Eastern Sociological Society, April, 1975

Member, Papers Committee, 45th Annual Meeting of the Eastern Sociological Society, 1975

Student Representative, Programs, Curricula and Courses Committee, Division of Behavioral and Social Sciences, University of Maryland, 1973-1974

President, Graduate Student Organization, Department of Sociology, University of Maryland, 1973-1974

HONORS AND AWARDS:

American Sociological Association, Travel Grant, Uppsala, Sweden, 1978

Fulbright-Hayes Doctoral Research Abroad Fellowship, Egypt, 1976-1977

Council on West European Studies Fellowship, University of Grenoble, France, 1975

Yale University Fellowship, 1974-1978

Alpha Kappa Delta, Sociological Honorary Society, 1973

Phi Delta Kappa, International Honorary Society, 1973

Graduate Student Paper Award, District of Columbia Sociological Society, 1973

Science Fiction Short Story Award, University of Maryland, 1973

Maxwell D. Taylor Award for Academic Excellence, Arabic, United States Defense Language Institute, 1971

Theodore Goodman Memorial Award for Creative Writing, City College of New York, 1968

New York State Regents Scholarship, 1963-1968

National Merit Scholarship, Honorable Mention, 1963

PUBLICATIONS:

ENERGY

Books and Chapters

"Recognizing the Limits of Markets, Rediscovering Public Interest in Utilities," in Robert E. Willett (ed), Electric and Natural Gas Business: Understanding It! (2003 and Beyond) (Houston: Financial Communications: 2003)

"Protecting the Public Interest in the Transition to Competition in New York Industries," The Electric Utility Industry in Transition (Public Utilities Reports, Inc. & the New York State Energy Research and Development Authority, 1994)

"The Seven Percent Solution: Energy Prices, Energy Policy and the Economic Collapse of the 1970s," in Energy Concerns and American Families in the 1980s (Washington, D.C.: The American Association of University Women Educational Foundation, 1983)

"Natural Gas Policy Analysis," in Edward Mitchell (Ed.), Natural Gas Pricing Policy (Washington, D.C.: American Enterprise Institute, 1983)

Equity and Energy: Rising Energy Prices and the Living Standard of Lower Income Americans (Boulder, Colorado: Westview Press, 1983)

Articles and Papers:

"The Failure of Federal Authorities to Protect American Energy Consumers From Market Power and Other Abusive Practices," *Loyola Consumer Law Review,* 19:4 (2007)

"Too Much Deregulation or Not Enough," *Natural Gas and Electricity*, June 2005

"Real Energy Crisis is $200 Billion Natural Gas Price Increase," Natural Gas and Electricity, August 2004

"Regulators Should Regain Control to Prevent Abuses During Scarcity," Natural Gas, August 2003

"Economics of Power: Heading for the Exits, Deregulated Electricity Markets Not Working Well," *Natural Gas*, 19:5, December 2002

"Let's Go Back," Public Power, November-December 2002

"Conceptualizing and Measuring the Burden of High Energy Prices," in Hans Landsberg (Ed.), High Energy Costs: Assessing the Burden (Washington, D.C.: Resources For the Future, 1982)

"Energy Efficiency Investments in Single Family Residences: A Conceptualization of Market Inhibitors," in Jeffrey Harris and Jack Hollander (Eds.), Improving Energy Efficiency in Buildings: Progress and Problems (American Council for An Energy Efficient Economy, 1982)

"Policy Packaging for Energy Conservation: Creating and Assessing Policy Packages," in Jeffrey Harris and Jack Hollander (Eds.), Improving Energy Efficiency in Buildings: Progress and Problems (American Council for An Energy Efficient Economy, 1982)

"The Role of Consumer Assurance in the Adoption of Solar Technologies," International Conference on Consumer Behavior and Energy Policy, August, 1982

"Energy and the Poor," Third International Forum on the Human Side of Energy, August, 1982

"Energy Price Policy and the Elderly," Annual Conference, National Council on the Aging, April, 1982

"Energy and Jobs: The Conservation Path to Fuller Employment," Conference on Energy and Jobs conducted by the Industrial Union Department of the AFL-CIO, May 1980

Research Reports

A Consumer Analysis of the Adoption of the California Clean Cars Program in Other States: Florida, Consumer Federation of America, November 2008

Climate Change and the Electricity Consumer: Background Analysis to Support a Policy Dialogue, Consumer Federation of America, June 2008

Ending America's Oil Addiction: A Quarterly Report on Consumption, Prices and Imports, Consumer Federation of America, April 2008

A Consumer Analysis of the Adoption of the California Clean Cars Program in Other States: Arizona, Consumer Federation of America, March 2008

A Step Toward A Brighter Energy Future, Consumer Federation of America, December 2007

A Consumer Analysis of the Adoption of the California Clean Cars Program in Other States: New Mexico, Consumer Federation of America, November 2007

Not time to Waste: America's Energy Situation Is Dangerous, But Congress Can Adopt New Policies to Secure Our Future, Consumer Federation of America, October 2007

Technology, Cost and Timing, Consumer Federation of America, July 2007

Florida's Stake in the Fuel Economy Battle, July 2007

Big Oil v. Ethanol, Consumer Federation of America, July 2007

Too Little, Too Late: Why the Auto Industry Proposal To Go Low and Slow on Fuel Economy Improvements Is Not in the Consumer or National Interest, Consumer Federation of America, July 2007

EXHIBIT 30

The Senate Commerce Committee Bill Is Much Better For Consumers and The Nation Than the Automobile Industry Proposal, Consumer Federation of America, June 2007

Rural Households Benefit More From Increases In Fuel Economy, Consumer Federation of America, June 207

A Consumer Pocketbook And National Cost-Benefit Analysis of "10 in10", Consumer Federation of America, June 2007

Time to Change the Record on Oil Policy, Consumer Federation of America, August 2006

50 by 2030: Why $3.00 Gasoline Makes the 50-Miles Per Gallon Car Feasible, Affordable and Economic, Consumer Federation of America, (May 2006)

The Role of Supply, Demand, Industry Behavior and Financial Markets in the Gasoline Price Spiral (Prepared for Wisconsin Attorney General Peggy A. Lautenslager, May 2006)

Debunking Oil Industry Myths and Deception: The $100 Billion Consumer Rip-Off (Consumer Federation of America and Consumers Union, May 3, 2006)

The Role of Supply, Demand and Financial Markets in the Natural Gas Price Spiral (prepared for the Midwest Attorneys General Natural Gas Working Group: Illinois, Iowa, Missouri, Wisconsin, March 2006)

The Impact of Rising Prices on Household Gasoline Expenditures (Consumer Federation of America, September 2005)

Responding to Turmoil in Natural Gas Markets: The Consumer Case for Aggressive Policies to Balance Supply and Demand (consumer Federation of America, December 2004)

Record Prices, Record Oil Company Profits: The Failure Of Antitrust Enforcement To Protect American Energy Consumers (Consumer Federation of America, Consumers Union, September 2004)

Fueling Profits: Industry Consolidation, Excess Profits, & Federal Neglect: Domestic Causes of Recent Gasoline and Natural Gas Price Shocks (Consumer Federation of America and Consumers Union, May 2004)

Spring Break in the U.S. Oil Industry: Price Spikes, Excess Profits and Excuses (Consumer Federation of America, October 2003)

How Electricity Deregulation Puts Pressure On The Transmission Network And Increases It's Cost (Consumer Federation of America, Consumers Union and U.S. PIRG, August 2003)

A Discouraging Word (or Two, or Three, or Four) About Electricity Restructuring in Texas, Pennsylvania, New England and Elsewhere Consumer Federation of America, U.S. Public Interest Research Group and Consumers Union, March 2003)

All Pain, No Gain: Restructuring and Deregulation in the Interstate Electricity Market (Consumer Federation of America, September 2002)

EXHIBIT 30

U.S. Capitalism and the Public Interest: Restoring the Balance in Electricity and Telecommunications Markets (Consumer Federation of America, August 2002)

Electricity Deregulation and Consumers: Lesson from a Hot Spring and a Cool Summer (Consumer Federation of America, August 30, 2001)

Ending the Gasoline Price Spiral: Market Fundamentals for Consumer-Friendly Policies to Stop the Wild Ride (Consumer Federation of America, July 2001)

Analysis of Economic Justifications and Implications of Taxing Windfall Profits in the California Wholesale Electricity Market (Consumer Federation of America and Consumers Union, June 13, 2001)

Behind The Headlines Of Electricity Restructuring A Story Of Greed, Irresponsibility And Mismanagement Of A Vital Service In A Vulnerable Market (Consumer Federation of America, March 20, 2001)

Reconsidering Electricity Restructuring: Do Market Problems Indicate a Short Circuit or a Total Blackout? (Consumer Federation of America, November 30. 2000)

Mergers and Open Access to Transmission in the Restructuring Electric Industry (Consumer Federation of America, April 2000)

Electricity Restructuring and the Price Spikes of 1998 (Consumer Federation of America and Consumers Union, June 1999)

The Residential Ratepayer Economics of Electric Utility Restructuring (Consumer Federation of America, July 1998)

Consumer Issues in Electric Utility Restructuring (Consumer Federation of America, February 12, 1998)

A Consumer Issue Paper on Electric Utility Restructuring (American Association of Retired Persons and the Consumer Federation of America, January, 1997)

Transportation, Energy, and the Environment: Balancing Goals and Identifying Policies, August 1995

A Residential Consumer View of Bypass of Natural Gas Local Distribution Companies, February 1988

The National Energy Security Policy Debate After the Collapse of Cartel Pricing: A Consumer Perspective, January 1987

The Energy, Economic and Tax Effects of Oil Import Fees, October 25, 1985

The Bigger the Better: The Public Interest in Building a Larger Strategic Petroleum Reserve, June 12, 1984

The Consumer Economics of CWIP: A Short Circuit for American Pocketbooks, April, 1984

Public Preference in Hydro Power Relicensing: The Consumer Interest in Competition, April 1984

Concept Paper for a Non-profit, Community-based, Energy Services Company, November 1983

The Consumer and Energy Impacts of Oil Exports, April 1983

Up Against the Consumption Wall: The Impact of Rising Energy Prices on Lower Income Consumers, March 1983

A Decade of Despair: Rising Energy Prices and the Living Standards of Lower Income Americans, September 1982

The Impact of Rising Energy Prices on the Delivery of Public Service by Local Governments, August 1982

The Impact of Rising Energy Prices on the Low Income Population of the Nation, the South, and the Gulf Cost Region, July, 1982

A Comprehensive Analysis of the Impact of a Crude Oil Import Fee: Dismantling a Trojan Horse, April 1982

The Past as Prologue II: The Macroeconomic Impacts of Rising Energy prices, A Comparison of Crude Oil Decontrol and Natural Gas Deregulation, March, 1982

The Past as Prologue I: The Underestimation of Price Increases in the Decontrol Debate, A Comparison of Oil and Natural Gas, February 1982

Oil Price Decontrol and the Poor: A Social Policy Failure, February 1982

Natural Gas Decontrol: A Case of Trickle-Up Economics, January 1982

A Comprehensive Analysis of the Costs and Benefits of Low Income Weatherization and Its Potential Relationship to Low Income Energy Assistance, June 1981

Summary of Market Inhibitors, February 1981

Program Models and Program Management Procedures for the Department of Energy's Solar Consumer Assurance Network Project: A Rapid Feedback Evaluation, February 1981

An Analysis of the Economics of Fuel Switching Versus Conservation for the Residential Heating Oil Consumer, October 1980

Energy Conservation in New Buildings: A Critique and Alternative Approach to the Department of Energy's Building Energy Performance Standards, April, 1980

The Basics of BEPS: A Descriptive Summary of the Major Elements of the Department of Energy's Building Energy Performance Standards, February, 1980

TESTIMONY:

FEDERAL AGENCIES AND COURTS

"Initial Comments of the Consumer Federation of America," Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity market Design, Federal Energy Regulatory Commission, Docket No. RM-01-12-000, October 15, 2002

EXHIBIT 30

"An Economic Explanation of Why the West and South Want to Avoid Being Infected by FERC's SMD and Why Market Monitoring is Not an Effective Cure for the Disease," SMD Market Metrics Conference, Federal Energy Regulatory Commission, October 2, 2002

"Motion To Intervene And Request For Rehearing Of The Consumer Federation Of America," before the Federal Energy Regulatory Commission, San Diego Gas & Electric Company, Complaint, v. All Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, Docket Nos. EL00-95-000 et al,

"Reply Comments of the Consumer Federation Of America," before the Federal Energy Regulatory Commission, San Diego Gas & Electric Company, Complaint, v. All Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, Docket Nos. EL00-95-000 et al,

"Consumer Federation Of America, Request For Reconsideration Regional Transmission Organizations," Federal Energy Regulatory Commission, Docket No. RM99-2-000; Order No. 2000, January 20, 2000

"Comments of the Consumer Energy Council of America Research Foundation," before the Environmental Protection Agency, 40 CFR Part 73, July 5, 1991

"Joint Comments of the Consumer Federation of America and the Environmental Action Foundation," Federal Energy Regulatory Commission, Dockets Nos. RM88-4, 5,6-000, July 18, 1988

"Comments of the Consumer Federation of America on the Initiation of National Security Investigations of Imports of Crude Oil and Refined Petroleum Products," Notice of Investigation Under Section 232 of the Trade Expansion Act of 1962, U.S. Department of Commerce, January 28, 1988

"Comments of the Consumer Federation of America on the Department of Energy's Study of the Impact of Falling Oil Prices on Crude Oil Production and Refining Capacity in the United States, U.S. Department of Energy, November 30, 1986

"Comments of the Consumer Federation of America on the Notice of Proposed Rule making Issued May 30, 1985," before the Federal Energy Regulatory Commission, Docket No. RM85-1-000 (Part A-D), July 15, 1985

"Utility Fuels, Inc. v. Burlington Northern Railroad Co., Fort Worth and Denver Ry. Co, and Atchison, Topeka and Santa Fe Ry. Co, before the Interstate Commerce Commission, Docket No. 39002, December 16. 1983, on Behalf of Utility Fuels, Inc.

"In the Matter of Coal Rate Guidelines -- Nationwide, ExParte No. 347 (Sub No. 1)," before the Interstate Commerce Commission, July 28, 1983

"Federal Energy Conservation Programs," before the United States Environmental Protection Agency, July 14, 1981

"Building Energy Performance Standards," before the Department of Energy, March 27, 1980

"Comment on the Incremental Pricing Provisions of the Natural Gas Policy Act," before the Federal Energy Regulatory Commission, Docket No. RM 80-10

FEDERAL CONGRESSIONAL

"Excessive Speculation In Energy Commodities," Agriculture Committee, United States House of Representatives, July 10, 2008

"Oversight of Energy Markets and Oil Futures Contract," Joint Hearing of the Senate Appropriations Subcommittee on Financial Services and General Government and The and the Committee on Agriculture, Nutrition and Forestry United States Seante, June 17, 2008

"Energy Market Manipulation and Federal Enforcement Regimes," Committee On Commerce, Science And Transportation, United States Senate, June 3, 2008

"Consumer Effects of Retail Gas Prices," before the Judiciary Committee Antitrust Task Force, United States House of Representatives, May 7, 2008

"Pumping up Prices: The Strategic Petroleum Reserve and Record Gas Prices," Select Subcommittee on Energy Independence and Global Warming, United States House of Representative, April 24, 2008

"Prices at the Pump: Market Failure and the Oil Industry," House Judiciary Committee, May 16, 2007

"Price Gouging," Senate Committee on Commerce, Science and Transportation, May 23, 2006

"Gasoline: Supply, Price and Specifications," House Committee on Energy and Commerce, May 10, 2006

"Antitrust Should Promote Competition on Top of Well Regulated Infrastructure Platforms," Antitrust Modernization Commission, December 5, 2005

"Testimony of Mark Cooper on behalf or The Consumer Federation of America and Consumers Union on the Status of the U.S. Refining Industry," Subcommittee on Energy and Air Quality, Committee on Energy, U.S. House of Representatives, July 15, 2004

"Testimony of Dr. Mark N. Cooper on Behalf of the Consumer Federation of American and Consumers Union on Environment Regulation in Oil Refining," Environment and Public Works Committee, May 12, 2004

"Testimony Of Dr. Mark Cooper, On Behalf Of Consumer Federation Of America And Consumers Union On Crude Oil: The Source Of Higher Prices? Before The Senate Judiciary Committee, Antitrust, Competition Policy And Consumer Rights Subcommittee, April 7, 2004

"Testimony Of Dr. Mark Cooper, Director Of Research On Gasoline Price Volatility," Senate Commerce Committee, October 9, 2003

EXHIBIT 30

"Statement of Dr. Mark Cooper on Behalf of the Consumer Federation of America and Consumers Union on The Federal Response to the 2003 Blackout: Time to Put the Public Interest First," Subcommittee on Oversight of Government Management, The Federal Workforce and the District of Columbia, Committee on Government Affairs, United States Senate, September 10, 2003

"Statement Of Dr. Mark Cooper on Electricity Markets: California," Subcommittee On Energy And Air Quality House Energy And Commerce Committee's Subcommittee, March 22, 2001

"Testimony of Dr. Mark N. Cooper on behalf of the Consumer Federation of America and Consumers Union," Electricity Restructuring at the Federal Level, Subcommittee on Energy and Power, U.S. House of Representatives, October 6, 1999

"Testimony of Dr. Mark N. Cooper on Electricity Competition: Consumer Protection Issues," before the Subcommittee on Energy and Power, Energy and Commerce Committee, United States House of Representatives, May 26, 1999

"Testimony of Dr. Mark N. Cooper on The Regulation of Public Utility Holding Companies," Committee on Banking, Housing, and Urban Affairs, United States Senate, April 29, 1997

"Testimony of Dr. Mark N. Cooper on Behalf of the Consumer Federation of America and the Environmental Action Foundation on Exempting Registered Holding Companies from the Public Utility Holding Company Act for Diversification into Telecommunications," Committee on Energy and Commerce, United States House of Representatives, July 29, 1994

"Testimony of Dr. Mark N. Cooper on Regulatory Reform in the Electric Utility Industry," before the Committee on Energy and Natural Resources, U.S. Senate, March 14, 1991

"Testimony of Mark Cooper and Scott Hempling on Electric Utility Policies of the Federal Energy Regulatory Commission," before the Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, U.S. House of Representatives, October 11, 1990

"Testimony of Dr. Mark N. Cooper on Independent Power Producers and the Public Utility Holding Company Act of 1935" Subcommittee on Energy and Power, Committee on Energy and Commerce, United States House of Representatives, September 14, 1989

"Testimony of Dr. Mark N. Cooper on Acid Rain Legislation, Subcommittee on Energy and Power, Committee on Energy and Commerce, United States House of Representatives, September 7, 1989

"Joint Testimony of the Consumer Federation of American and the Citizen Labor Energy Coalition on Bypass of Natural Gas Local Distribution Companies," before the Subcommittee on Energy Regulation and Conservation, Committee, on Energy and Natural Resources, United States House of Representatives, September 29, 1988

"Independent Power Producers and the Public Utility Holding Company Act of 1935, Subcommittee on Energy and Power of the Energy and Commerce Committee, U.S. House of Representatives, September 14, 1988

EXHIBIT 30

"Joint Testimony of the Consumer Federation of American and the Citizen Labor Energy Coalition on Bypass of Natural Gas Local Distribution Companies," before the Subcommittee on Energy and Power, Energy and Commerce Committee, United States House of Representatives, May 25, 1988

"Administrative Modifications in the Implementation of the Public Utility Regulatory Act of 1978," before the Committee on Energy and Natural Resources, U.S. Senate, February 2, 1988

"Excess Deferred Taxes," before the Subcommittee on Select Revenue Measures, Ways and Means Committee, U.S. House of Representatives, December 14, 1987

"Electric Utility Regulation," Testimony before the Subcommittee on Energy and Power of the Energy and Commerce Committee, U.S. House of Representatives, September 23, 1987

"Oil Industry Taxes," before the Committee on Finance, U.S. Senate, June 5, 1987

"Comprehensive Natural Gas Legislation," before the Subcommittee on Regulation, Committee on Energy and Natural Resources, U.S. Senate, May 20, 1987

"Comprehensive Natural Gas Legislation," before the Subcommittee on Regulation, Energy and Natural Resources Committee, U.S. Senate, May 20, 1986

"Electric Utility Regulation," before the Subcommittee on Energy Conservation and Power, Energy and Commerce Committee, U.S. House of Representatives, March 20, 1986

"Oil Import Fees," Committee on Energy and Natural Resources, U.S. Senate, March 20, 1986

"Recent Developments in the Natural Gas Industry," before the Subcommittee on Energy Regulation and Conservation of the Energy and Natural Resource Committee, U.S. Senate, July 11, 1985

"The World Energy Outlook," before the Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, United States House of Representatives, April 1, 1985

"Legislative Proposals Governing Construction Work In Progress," before the Subcommittee on Energy Regulation of the Energy and Natural Resources Committee, United States Senate, April 12, 1984

"Legislation Affecting Oil Company Mergers," before the Subcommittee on Energy and Mineral Resources of the Committee on Energy and Natural Resources, United States Senate, April 10, 1984

"Review of Federal Policies Affecting Energy Conservation and Housing," before the Subcommittee on Housing and Community Development of the Committee on Banking, Finance and Urban Affairs, United States House of Representatives, March 21, 1984

"The Export of Alaskan Crude Oil," before the Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations, United States Senate, July 19, 1984

"Economics of Natural Gas Deregulation," before the Joint Economic Committee, United States Congress, April 15, 1983

"Bills to Amend the Export Administration Act," before the Subcommittee on International Finance and Monetary Policy of the Committee on Banking, Housing and Urban Affairs, United States Senate, April 14, 1983

"Reauthorization of the Export Administration Act," before the Subcommittee on International Economic Policy and Trade of the Committee on Foreign Affairs, United States House of Representatives, April 12, 1983

"Pending Natural Gas Legislation," before the Subcommittee on Fossil and Synthetic Fuels of the Committee on Energy and Commerce, United States House of Representatives, March 22, 1983

"Energy Conservation and Jobs," before the Subcommittee on Energy Conservation and Power of the Committee on Energy and Commerce, United States House of Representatives, March 15, 1983

"Natural Gas Hearings," before the Committee on Energy and Natural Resources, United States Senate, March 10, 1983

"The Impacts of Various Energy Tax Options," before the Subcommittee on Fossil and Synthetic Fuels of the Committee on Energy and Commerce, June 15, 1982

"Various Energy Tax Options," before the Subcommittee on Energy and Agricultural Taxation of the Committee on Finance, United States Senate, June 9, 1982

"Natural Gas Policy and Regulatory Issues," before the Committee on Energy and Natural Resources, United States Senate, March 23, 1982

"The Economic Implications of Natural Gas Deregulation," before the Subcommittee on International Trade, Finance and Security Economics of the Joint Economic Committee, United States Congress, February 18, 1982

"The Implementation of Title I of the Natural Gas Policy Act of 1978," before the Committee on Energy and Natural Resources, United States Senate, November 5, 1981

"The National Home Weatherization Act of 1981," before the Subcommittee on Energy Conservation and Supply of the Committee on Energy and Natural Resources, United States Senate, July 15, 1981

"An Alternative Energy Budget," before the Subcommittee on Energy Conservation and Power of the Energy and Commerce Committee, United States House of Representatives, February 27, 1981

"Institutional Analysis of Policy Options to Promote Energy Conservation in New Buildings," before the Subcommittee on Energy Development and Applications of the Committee on Science and Technology, United States House of Representatives, September 25, 1980

"Building Energy Performance Standards," before the Subcommittee on Energy Regulation of the Committee on Energy and Natural Resources, United States Senate, June 26, 1980

"Analysis of No. 2 Distillate Prices and Margins with Special Focus on the Department of Energy's Methodology," before the Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, United States House of Representatives, February 12, 1980

STATE AND PROVINCE

"Prefiled Testimony Of Dr. Mark N. Cooper On Behalf Of The Virginia Citizen Consumers Council," In The Matter Of Application Of Virginia Electric And Power Company For Approval Of A Functional Separation Plan, Virginia State Corporation Commission, Case No. Pue000584, August 24, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Public Service Company of Oklahoma To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00096, May 18, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Oklahoma Gas and Electric Company To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00095, May 18, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Arkla, A Division of Reliant Energy Resources Corporation To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00094, May 18, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Oklahoma Natural Gas Company To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00097, May 14, 2001

"Statement of Dr. Mark N. Cooper before the Governor's Task on Electricity Restructuring," Las Vegas Nevada, November 30, 2000

"Testimony of Dr. Mark N. Cooper on Behalf of the Arizona Consumers Council," In the Matter of the Competition in the Provision of Electric Services Throughout the State of Arizona, The Arizona Corporation Commission, January 21, 1998

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Virginia Citizens Consumers Council," Virginia Electric Power Company, Application of Approval of Alternative Regulatory Plan, State Corporation Commission of Virginia, December 15, 1997

"Electric Industry Restructuring: Who Wins? Who Loses? Who Cares?" Hearing on Electric Utility Deregulation, National Association of Attorneys General, November 18, 1997

"Direct Testimony of Dr. Mark N. Cooper in Response to the Petition of Enron Energy Services Power, Inc., for Approval of an Electric Competition and Customer Choice Plan and for Authority Pursuant to Section 2801 (E)(3) of the Public Utility Code to Service as the Provider of Last Resort in the Service Territory of PECO Energy Company on Behalf of the American Association of Retired Persons," Pennsylvania Public Utility Commission v. PECO, Docket No. R-00973953, November 7, 1997.

"Policies to Promote Universal Service and Consumer Protection in the Transition to Competition in the Electric Utility Industry," Regulatory Flexibility Committee, Indiana General Assembly, September 9, 1997

"Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," Application of Pennsylvania Power and Light Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code, Pennsylvania Public Utility Commission, Docket No. R-00973954, July 2, 1997

"Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," Application of PECO Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code, Pennsylvania Public Utility Commission, June 20, 1997

"Statement of Dr Mark N. Cooper," Project on Industry Restructuring, Public Utility Commission of Texas, Project No. 15000, May 28, 1996

"Direct Testimony of Dr. Mark N. Cooper Submitted on behalf of The American Association of Retired Persons, before the Public Service Commission, State of New York, In the Matter of Competitive Opportunities Case 94-E-0952 New York State Electric and Gas Co. 96-E-0891; Rochester Gas and Electric Corp. 96-E-0898 Consolidated Edison Company of New York, Inc. 96-E-0897

"Statement of Dr. Mark N. Cooper to the System Benefits Workshop," Project on Industry Restructuring, Project No. 15000, before the Public Utility Commission of Texas, May 28, 1996

"Statement of Dr. Mark N. Cooper, Joint Hearing on the Public Utility Holding Company Act of 1935," Committees on Finance and Technology and Electricity, National Association of Regulatory Utility Commissioners, February 28, 1989

EXHIBIT 30

"On Behalf of the Evelyn Soloman, Proceeding on Motion of the Commission as to the Rates, Charges and Regulations of Niagara Mohawk Power Corporation, Case Nos. 29670 and 29671," before the State of New York Public Service Commission, February 16, 1988

"On Behalf of Mississippi Legal Services Coalition in the Matter of the Citation to Show Cause Why the Mississippi Power and Light Company and Middle South Energy Should not Adhere to the Representation Relied Upon by the Mississippi Public Service Commission in Determining the Need and Economic Justification for Additional Generating Capacity in the Form of A Rehearing on Certification of the Grand Gulf Nuclear Project," Before the Mississippi Public Service Commission, Docket No. U-4387, August 13, 1984

"The Impact of Rising Energy Prices on the Low Income Population of the Nation, the South, and the Gulf Coast Region," before the Mississippi Public Service Commission, Docket No. U4224, November 1982

"The Impact of Rising Utility Rates on he Budgets of Low Income Households in the Region of the United States Served by the Mississippi Power Company and South Central Bell Telephone Company," before the Chancery Court of Forrest County, Mississippi, October 6, 1982

"The Impact of Rising Energy Prices on the Low Income Population of the Nation, the South and the Gulf Coast Region," before the Mississippi Public Service Commission, Docket No. U-4190, August 1982

EXHIBIT 30

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Plant Cost Recovery Clause	)	**DOCKET NO. 100009-EI**
	)	**FILED: July 8, 2010**

DIRECT TESTIMONY OF DR. MARK COOPER

ON BEHALF OF
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IN RE: NUCLEAR PLANT COST RECOVERY CLAUSE

BY THE SOUTYHERN ALLIANCE FOR CLEAN ENERGY

FPSC DOCKET NO. 100009-EI

DIRECT TESTIMONY OF

DR. MARK COOPER

INTRODUCTION AND QUALIFICATIONS

Q. Please state you name and address.

A. My name is Dr. Mark Cooper. I reside at 504 Highgate Terrace, Silver Spring, Maryland.

Q. Briefly describe your qualifications

A. I have a Ph.D. from Yale University and have been providing economic and policy analysis for energy and telecom for almost thirty years. I have been the Director of Energy and the Director of Research at the Consumer Federation of America for 27 years, although the opinions I express in this testimony are my personal opinions and not those of the Consumer Federation. I am a Fellow at various universities on specific issues, including the Institute for Energy and the Environment at Vermont Law School. I have testified over 100 times before public utility commissions in 44 jurisdictions in the U.S. and Canada on energy and telecommunications issues and about twice as many times before federal agencies and Congress on a variety of issues, including energy and electricity. A copy of my resume with energy related activities is attached as Exhibit MNC- 20.

PURPOSE, OVERVIEW AND SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. I have been asked by the Southern Alliance for Clean Energy ("SACE") to examine the long-term feasibility of completion of Florida Power & Light's ("FPL") Turkey Point 6 & 7 Reactors ("Turkey Point") and Progress Energy Florida's ("PEF" or "Progress") Levy Nuclear Reactors ("Levy") (collectively "reactors" or "projects"), and to determine whether or not it is reasonable and/or prudent for FPL and PEF to incur any additional costs on these proposed reactors given current economic and other uncertainties.

Q. Please provide a general overview of your testimony.

A. In a mere four years since the passage the Florida Renewable Energy Technologies and Energy Efficiency Act of 2006, which sought to promote nuclear power in the state, the "nuclear renaissance" in Florida has been reduced to the largest investor - owned utilities in the state, PEF and FPL, urging the Commission to allow them to charge ratepayers hundreds of millions of dollars to do nothing more than hold their place in a line of proposed nuclear projects at the Nuclear Regulatory Commission. The number of utilities in the line has shrunk dramatically as other proposed new nuclear projects have been cancelled around the country. For PEF and FPL, the movement of the line has slowed to a crawl, and reserving their place in the line has little if any value to the Florida ratepayers because the line is almost certainly leading nowhere any time soon.

Ironically, this sad state of affairs represents significant progress from last year. In contrast to the utilities' testimony in last year's cost recovery docket (Docket No. 090009-EI), PEF and FPL now admit that the economics of nuclear reactor construction are highly uncertain. For FPL the uncertainty is so great and the risks so high that they now say they have not determined whether they will actually build these proposed new reactors in the state.

Progress hopes that a five-year delay will resolve the uncertainty, but maintains that it is still committed to construction.

The movement in the utility positions is in the direction I pointed them in my testimony last year, but they have not moved far enough, and as a result, additional millions of ratepayer dollars have been wasted and more is proposed to be wasted over the coming years. Furthermore, while PEF and FPL promise a thorough economic review before they make the momentous decision to proceed with construction of these proposed reactors, in the interim they continue to ask that the Florida ratepayers foot the bill, without a well-grounded showing that completion of these reactors is feasible in the long-term. In my opinion, it is not reasonable or prudent to allow PEF and FPL to incur additional costs of these proposed reactors from Florida ratepayers so that the utilities can do nothing more than sit in line until they themselves determine if completion of the reactors is feasible. This is a decision that the Commission can and should make now.

In light of these developments, in my testimony I repeat two of my primary recommendations that I made in my testimony last year. First, the Commission should not allow the recovery of the line-sitting fee from ratepayers. If anything, the Commission should only allow a small sum to allow FPL and PEF to continue to monitor and study the nuclear option.

Second, the Commission should develop a comprehensive and careful template for evaluating the build-no-build decision, when, if ever, it is presented to the Commission.

Q. Please summarize your findings.

A. In the 2009 nuclear cost recovery proceeding, Docket 090009-EI, I presented evidence that the fundamental economics of nuclear reactor construction no longer supported the construction of

new reactors in Florida, if they ever did. I emphasized the dramatic changes, for the worse, in key variables that affect the economics of nuclear reactors:

- declining natural gas costs,
- declining estimates of carbon prices,
- declining demand due to the economic slowdown,
- reduced need for nonrenewable generation due to likely efficiency and renewable mandates in climate change legislation,
- rising projections of nuclear construction costs, and
- the high degree of uncertainty in the economic environment that new reactors face.

All of these factors are still at work and many have continued to develop in a manner that further undermines the long-term feasibility of ever completing these proposed nuclear reactors in Florida. As a result, it is neither reasonable nor prudent to incur additional costs for these proposed reactors.

The decisions by Progress and FPL to seek to build these proposed nuclear reactors were based on a number of important assumptions that have been called into question in the time since the evidence was filed in their petitions for determination of need ("Need Docket"), as well as the evidence filed in Docket 090009-EI. More specifically:

(1) They assumed a high rate of demand growth. While the utilities have lowered their demand projections in testimony filed this year, they still have not recognized the full implications of lowered demand in the evaluation of the proposed reactors in the timing and pattern of need for new generation assets.

(2) They downplayed the contribution that efficiency and renewables can make to meet the need for electricity. The utilities continue to fail to incorporate the impact of these policies on

demand growth and the need for non-renewable generation in the evaluation of the proposed reactors.

(3) They assumed high prices for fossil fuels based on high commodity prices. While they have lowered those projections in testimony filed this year, they have not lowered the price projections to accord with reality.

(4) Based on the belief that public policy would put a high price on carbon, they assumed natural gas would be much more costly than the latest analysis prepared by the EPA indicates. While they have lowered their estimates of the price of carbon, they are still too high and have not dealt with the possibility that carbon taxes may be delayed, or that flexibility may be built into the allowance regime to keep costs low and make emissions allowances available.

(5) They used a low estimate of the cost of nuclear reactors. Although they have raised these estimates in testimony filed this year as compared to last year, both PEF's and FPL's estimates remain well below estimates of other analysts. Furthermore, PEF and FPL have not offered a firm, fixed cost estimate or proposed any mechanism to insulate ratepayers from future cost increases.

(6) They assumed that the design review of the AP-1000 reactor technology would proceed quickly, but that has proven to not be the case. The 17th revision is still unresolved, while contentions have been admitted at the Nuclear Regulatory Commission.[1]

(7) They use an approach to modeling the need for generation that systematically biases the results in favor of construction of nuclear reactors. Slowing demand growth makes it even

[1] Lyash, p. 9, notes that the Atomic Safety Licensing Board, "ruled on their contentions and admitted parts of three contentions to the LNP COL.

more important to properly value the flexibility of generation resources, including, but not limited to, natural gas generation, that can add needed increments to capacity but do not require long lead times like nuclear reactors.

The impact of the changed factors on these assumptions that have developed since the Need Docket and Docket 090009-EI can be summarized as follows:

Market Factors	
Declining Demand	Eliminates need for large quantity of new generation
Falling price of natural gas	Makes natural gas more attractive
Policy	
Uncertainty	Federal carbon policy is not defined
	State policies supporting nuclear or alternative resources remain uncertain
Regulatory Factors	
Efficiency/renewable standards	Reduces need for non-renewable generation, such as nuclear
Carbon cost reduction	Makes low carbon resources less attractive
Technological Factors	
Nuclear cost uncertainties	Raises prospects of cost overruns
Growing confidence in cost and availability of alternatives	Makes alternatives more attractive
Financial Factors	
Tight Financial markets	Makes finance more difficult
Increasing concerns on Wall Street about nuclear reactors	Makes finance more expensive

Execution Risk

Design problems Increasing cost estimates	Raises questions about the ability to execute and the long-term feasibility of completing these proposed reactors

In Mr. Lyash's testimony, Progress identifies many of these risks lumped together as "enterprise risk." Whatever we call them, they combine to make it clear that the construction of the proposed new nuclear reactors is not feasible, and incurring substantial costs to continue to pursue these projects at this time is imprudent. Exhibit MNC-1 defines the six categories of risk I use in the evaluation of nuclear reactors and identifies over three dozen specific risks. Exhibit MNC-2 notes how the early assumptions made generally to justify nuclear reactor construction and create the illusion of a nuclear renaissance have proven to be incorrect. Exhibit MNC-3 identifies the risks and uncertainties that Progress now cites as reason to delay the project. These are the same factors that have led FPL to defer the decision to build Turkey Point 6 and 7.

Any of these changed factors alone could demonstrate that completion of these reactors is not feasible in the long term, and that incurring additional costs on these proposed reactors is neither reasonable nor prudent. However, taken together, these factors thoroughly undermine the case that the companies have tried to make to demonstrate (1) the long-term feasibility of these nuclear reactors at this time and (2) the prudence of incurring additional costs on these proposed reactors. The evidence presented by the companies to the Commission does not take these changed factors fully into account and does not reflect the highly uncertain future that nuclear reactors face.

If the Commission were to merely conclude that the changes in conditions make the future highly uncertain, that conclusion alone would argue strongly against continuing to invest ratepayer's money for these reactors. In an uncertain environment, the assets a prudent person acquires should be flexible, have short lead times, come in small increments and not involve the sinking of large

capital costs. The characteristics of nuclear reactors are the antithesis of those best suited to an uncertain environment. They are large, "lumpy" investments that require extremely long lead times and sink massive amounts of capital. Therefore, it would be imprudent to allow the companies to recover any more costs from ratepayers at this time because the companies have failed to demonstrate the long-term feasibility of completing the reactors.

There are other factors that will be documented by other witnesses that reinforce the conclusion that these reactors are not feasible in the long-term, and that as a result it is not prudent to incur additional costs, including the failure of some of the projects to obtain regulatory approvals, which were being counted on to stay on schedule and uncertainties and delays in the Nuclear Regulatory Commission ("NRC") licensing process. While one can point to some positive developments for the construction of nuclear power plants, such as the possibility of the creation by the U.S. Congress of a Clean Energy Development Authority, these are vastly outweighed by the negative developments.

Q. Are you sponsoring any exhibits to your testimony?

A. Yes, I am sponsoring the following exhibits:

Exhibit MNC-1: Risk Factors Facing Construction Of New Nuclear Reactors

Exhibit MNC-2: Unrealistic Assumptions Masking The Real Economics Of Nuclear Reactors

Exhibit MNC-3: Increasing Risks Facing Nuclear Reactor Construction Projects

Exhibit MNC-4: Negative Events In The Nuclear Renaissance

Exhibit MNC-5: Exelon's View Of The Deteriorating Nuclear As A Carbon Abatement Option

Exhibit MNC-6: Projected Natural Gas Prices Compared To EIA Projections

Exhibit MNC-7: The Decade Of Volatile Natural Gas Prices May Have Been The Exception, Not The Rule

Exhibit MNC-8: Declining Peak Load Projections: Progress

Exhibit MNC-9: Declining Peak Load And Capacity Needs Progress

Exhibit MNC-10: Declining Peak Load Projections: FPL

Exhibit MNC-11 Declining Peak Load And Capacity Needs: FPL

Exhibit MNC-12: Projections Of Carbon Compliance Costs

Exhibit MNC-13: Projections Of Overnight Construction Costs

Exhibit MNC-14; Declining Cost Of Renewables

Exhibit MNC-15: Flexible Gas Additions Lower Revenue Requirements

Exhibit MNC-16: Cumulative Cost Difference: Flexible v. Lumpy Treatment of Natural Gas Generation Additions

Exhibit MNC-17: Nuclear Construction Pressures Capital Requirements

Exhibit MNC-18: Overnight Costs As A Predictor Of Net Savings: FPL

Exhibit MNC-19: The Risk of Nuclear Reactors in the Eyes of Industry Analysts

Exhibit MNC-20: C.V. of Dr. Mark Cooper

Q. How is your testimony organized?

A. First, I briefly summarize my testimony from Docket 090009-EI. I then discuss the changing approaches of both PEF and FPL from Docket 090009-EI to the current docket due to the profound and fundamental changes in the economic landscape facing new nuclear reactor construction, and the fact that, although the approaches have changed, PEF and FPL continue to utilized flawed analyses to reach the conclusion that building these proposed new nuclear reactors

remains feasible and prudent. Next, I discuss and rely upon the opinions that other experts, specifically Wall Street analysts and other electric utility executives, have in regards to new nuclear construction. I then proceed to reevaluate the risk factors that I identified in my testimony in Docket 090009-EI and update my 2009 analysis with a focus on recent developments. Finally, I quantify the benefits of retaining flexibility in generation resources rather than continuing to imprudently spend money on these proposed nuclear reactors which are not feasible in the long term.

Q. Please briefly summarize your testimony in Docket 090009-EI.

A. In my testimony in the 2009 Nuclear Cost Recovery proceeding I concluded that the proposed new nuclear reactor construction is uneconomic, uncertain and risky. I presented evidence on the marketplace, policy, regulatory, technological, execution and financial risks of these reactors proposed for construction in Florida by Progress and FPL. I showed that, whatever the circumstances might have been in the 2008 Need Determination Proceeding, circumstances had dramatically changed since affirmative determinations of need were made by this Commission for these reactors. These changed circumstances and resulting risks led me to conclude that completion of the Turkey Point and Levy reactors was no longer feasible in the long term and that incurring additional costs on these reactors would not be prudent.

Q. Have your conclusions regarding long-term feasibility and the prudence of incurring additional costs on these reactors changed since the time of your testimony last year?

A. No. In fact, my conclusions have been only been further substantiated by developments occurring since my testimony last year. In fact, PEF and FPL have now been forced to admit the extreme uncertainty surrounding construction of new nuclear reactors, and, as a result, the utilities

have resorted to mere "line sitting" in the hopes that the Commission will continue to approve costs for these proposed reactors until the utilities are in fact ready to decide whether or not it would be beneficial to their bottom lines to actually construct the reactors.

Q. Have the utilities changed their approach from Docket 090009-EI?

A. Yes, but not enough. In Docket 090009-EI, the companies rejected the suggestion that they be required to update their economic analyses for purposes of demonstrating long-term feasibility, claiming that it did not make sense to let short-term changes in economic projections affect long-term decisions. However, both FPL and PEF underestimated the profound and fundamental changes in the economic landscape facing new nuclear reactor construction. As the adverse economic evidence continued to mount, the utilities have had to belatedly concede that their approach in 2009 could not be credible in 2010. When shifts in key economic variables appear to be permanent, or at least long-term, it would be imprudent and irrational for the utilities not to adjust the economic analyses on which they base their decisions. This year PEF and FPL have modified their economic analyses and both now admit that building a new nuclear reactor today would be imprudent. The Commission should acknowledge this admission as progress.

Unfortunately, the progress stops short of the correct conclusion. The utilities continue to recommend the imprudent expenditure of ratepayer funds, and the methodology they apply to evaluate the long-term feasibility of these reactors is fundamentally flawed. For example, FPL states in its Petition for Approval of Nuclear Power Plant Cost Recovery (May 3, 2010, p. 8):

> The developments at the national level, state level and project level needed for a clear path to construction have not achieved a high level of predictability. Therefore expenditures beyond those required to obtain the necessary licenses, permits and approvals would be premature in 2010 and 2011.

> By continuing to seek the necessary licenses, permits and approvals, FPL is maintaining progress toward delivering the benefits of new nuclear generation to FPL's customers without experiencing unnecessary costs or schedule risks. Once this phase of the project is complete, FPL will be able to review the then-existing economics, the accumulated experience of other new nuclear projects and the state and federal energy policy environment in its consideration of project next steps

Q. Do you agree with FPL's assessment?

A. I whole heartedly agree with the first and last sentences, but thoroughly disagree with the middle two sentences. FPL is correct in stating that now is not the time to be committing resources to the construction of nuclear reactors. However, FPL is incorrect in stating that it would be prudent to continue to expend funds to seek permits, licenses and other approvals. The expenditure of over $28 million for FPL in 2010 and 2011 for those purposes is a total waste of ratepayer money and therefore imprudent. FPL does not need to be seeking these licenses in 2010 and 2011 in order to bring the reactors on line in 2022, when they might be needed, if they are ever needed.

Q. What about Progress Energy Florida?

A. Progress takes a somewhat different view. Having signed an EPC contract very early in the overall process, it has chosen to remain fully committed to building the proposed LNP reactors, although on a much longer time schedule, "deferring significant capital expenditures to a later time period when the Company may benefit from, among other things, additional certainty with respect to federal and state energy policy, plant licensing, and improved financial conditions. More importantly, our decision moves forward with the EPC agreement, and thus preserves the long-term benefits of nuclear generation for the Company and its customers in Florida." (Testimony of Lyash, p. 6). While FPL states "the developments at the national levels, state level and project level needed

for a clear path to construction have not achieved a level of predictability" to create "a clear path to construction," Progress hopes the uncertainties will resolve themselves in time to validate its conclusion that the nuclear reactor is beneficial. Progress and its shareholders should bear the risk of this ill-considered gamble, not ratepayers. Meanwhile, Progress is seeking to have ratepayer pay in excess of $164 million to keep its place in line.

The difference between the FPL and the Progress positions may be the result of the fact that Progress has signed an EPC and is liable for penalties if it backs out of the contract. If the risks and uncertainties surrounding nuclear generation that have become so clear lead the Commission to conclude that these proposed reactors are no longer feasible, the cancellation fees should certainly not be recoverable from ratepayers. The Commission should make this clear immediately.

Q. What aspects of the analysis do PEF and FPL have in common?

A. While the two utilities take different positions with respect to whether they are moving ahead with actual construction of the proposed reactors, both FPL and PEF's analyses continue to make erroneous assumptions, all of which favor nuclear reactors. These erroneous assumptions lead them to erroneously conclude that nuclear power will be needed in the mid-term and will be less expensive than meeting demand with combined-cycle gas plants. These erroneous assumptions in the 2010 analyses include, but are not limited to, the following:

- The cost of natural gas used in the analyses is still higher than projections by the U.S. Department of Energy Information Administration ("EIA").
- The cost of carbon is still higher than the U.S. Environmental Protection Agency projects from the energy bill that has passed one house of Congress.

- The utilities have also failed to take the full implications of climate change policy into account. Both FPL and PEF assume a price of carbon is going to be imposed, but at the same time ignore the efficiency and renewable mandates that are likely to be included in any climate change legislation. As a result, they propose to build new reactors well before there will be a need for them to meet system reserve margin requirements if climate change policy is enacted.

- Their electricity and financial models do not reflect the problem of excess capacity and the value of being able to add natural gas generation resources in smaller increments and with shorter lead times than large central station facilities like nuclear reactors.

Q. What conclusions can you draw based on these erroneous assumptions made by PEF and FPL?

- A. Taking these erroneous assumptions into account, I reach two specific conclusions about the long-term feasibility of the proposed FPL and PEF reactors: First, contrary to the utility findings that nuclear reactors are a little less costly than natural gas – saving ratepayers about $ 5 billion in discounted, 2010 dollars in the base case – my analysis demonstrates that they are likely to be more expensive, costing ratepayers $10 to $20 billion more in discounted, 2010 dollars.

- Second, because of the high cost and other inherently unattractive economic characteristics of new nuclear reactors (long-lead time, sunk costs), it will be at least a decade, probably two, and maybe even more, before nuclear generation can

potentially become cost competitive with the other options available in a carbon constrained world. During this long time frame, the economics of other options can change dramatically. Therefore, it is imprudent to spend ratepayer funds on nuclear reactors at present, especially given that the utilities are at present merely line sitting as I discuss in more detail below.

These two findings reinforce my overall conclusion, that spending hundreds of millions of dollars of ratepayer funds today so that PEF and FPL can continue to sit in the line waiting to build new nuclear reactors is imprudent, unreasonable, and wasteful. In fact, the imprudence of continuing to spend ratepayer money on these projects is symbolized by the fact that the generation resources that these projects would bring on line would not even appear in the utility's ten year site plan for another two years, if then.

Q. If the reactors will not be needed for such a long time, why are the utilities continuing to seek ratepayer funds to develop them?

A. For both utilities the primary concern now is line sitting. For example, Progress Energy Florida claims to need to stay in line because of the activity in the industry.

> If we terminated the EPC agreement and cancelled the project, the nuclear option will be lost for the foreseeable future as both private (the Consortium and other vendors) and federal (the NRC) resources shift to nuclear projects under development elsewhere in the country or around the world. Our decision therefore preserves for our customers and the Company the long term benefits of fuel portfolio diversity, reduced reliance on fossil fuels for energy production, carbon free energy generation, and base load capacity at a low cost fuel source that nuclear generation provides (Lyash, p. 6).

FPL makes a similar argument, claiming that the decision to move forward is just around the corner, based in part, on a fiction that the nuclear industry is thriving and therefore FPL must move ahead quickly, or lose its place in line.

> The input representing the greatest risk for the Company is skilled labor trained to construct advanced nuclear facilities. At this time, however, FPL does not anticipate any major problems with respect to procurement of raw materials, long lead components, or skilled workers. Nevertheless, with development in the nuclear industry gaining steam, competition for these resources will increase (Testimony of Reed, p. 49).

The suggestion that the vendors are in the driver's seat and the utilities will lose their chance if they do not continue to spend ratepayer funds does not accord with reality. The vast majority of projects in the U.S. have been delayed or cancelled, as summarized in Exhibit MNC-4. There is little demand for the technology the Florida utilities have chosen.[2] Frankly, if the supply-train is stretched as thin as the utilities suggest, the danger of delays and escalating costs is probably much greater than being bumped out of the line because once the project starts, delays escalate, which is what drove cost escalation during the first nuclear building cycle.

Q. Do other experts share your view of the economics of nuclear reactors have continued to deteriorate?

A. Yes. Both FPL and Progress claim that the economics of nuclear reactors have improved dramatically since the Need Determination two years ago. The analysis of FPL claims that the break even capital cost – the amount of money FPL could spend on nuclear construction in overnight costs

[2] The number of reactors under construction outside of Russia and China has been basically flat increasing from 21 to 24 since the certificate of need was issued, http://www.world-nuclear.org/info/reactors.html. The vendor for both FPL and Progress appears to have a total of 4 units under construction, all in China, http://ap1000.westinghousenuclear.com/ap1000_nui_ic.html. In the U.S. two projects using this technology appear to be ahead of the Florida reactors (Georgia and South Carolina), but there does not appear to be a crowd behind them. One AP-1000 has been delayed, the other abandoned.

– has increased by more than one-third since the need determination in 2008.[3] For Progress, the mid fuel, no CO2 scenario has gone from a negative $3 billion to a positive $1 billion.[4] However, this is the opposite of what most analyses say, including those of Wall Street utility analysts and other utilities.

My review of utility industry analysts on Wall Street and elsewhere finds that they generally see the economics of new nuclear reactors moving in the opposite direction than what PEF and FPL claim, as demonstrated by Exhibit MNC-19. They definitely do not see an improvement. Some of the biggest nuclear utilities have also concluded that the economics have become so unfavorable that they have abandoned their plans for new nuclear reactors at present. A most stunning example was provided in a recent analysis from the CEO of Exelon. See Exhibit MNC-5. In his evaluation the cost of nuclear has more than doubled, and nuclear has moved well down in the list of options for carbon abatement. In the 2008 view, new natural gas was somewhat less costly than nuclear, but by 2010, gas was seen as much less costly. The CEO of Entergy, another major nuclear utility, has expressed similar sentiments.[5] The service territory conditions that J. Wayne Leonard indicates led him to the conclusion that "no same [sic] businessman would currently build a nuclear power plant" – plentiful reserves and slow growth – are exactly the conditions in which the Florida utilities now find themselves. Cushioned by the promise of cost recovery from the ratepayers, PEF and FPL have simply failed to adjust adequately to the new reality.

ANALYSIS OF RISK FACTORS

[3] Sim, 2009, Table 45, inflated at 1.03 per year to $5456, compared to Sim 2010, Ex. SRS-1.
[4] Progress Energy Florida, *Levy Nuclear Project NCRC Updated Life-Cycle Net Present Worth (CPVRR) Assessment,* Exhibit JL-3, 2007 results inflated at 2 percent per year.
[5] Thomson Reuters, *Entergy at Thomson Reuters Global Energy Summit-Houston,* May 24, 2010.

Q. Have you updated your analysis of the risk factors since you prepared your testimony in Docket 090009-EI based on recent developments?

A. Yes. I have reevaluated how each of the categories of risk that affects new nuclear construction in Florida, with an emphasis on the importance of recent developments. In each case I also show the benefits of waiting to make the build-no build decision and the folly of incurring costs while we are waiting. While FPL has decided to wait, Progress has declared it is going ahead with the construction decision, just on a slower time line. The self-serving economic analysis of nuclear reactors that both utilities present still indicate that these proposed new reactors are the preferred option. My analysis indicates otherwise.

MARKETPLACE RISK

Natural Gas Prices

Q. Are the utilities' projected natural gas prices still a concern to you?

A. Yes. There are two key components of gas costs in this analysis – the commodity cost and the compliance cost. Both are overestimated by both FPL and PEF.

In regards to commodity cost, the reality of lower natural gas prices is slowly sinking in. However, both utilities continue to overestimate the price of natural gas. As shown in Exhibit MNC-6, using the EIA long-term projection of wellhead natural gas prices and adding in the cost of transportation, I find that the utilities have projected prices that are higher than indicated by EIA by about 13 percent (14 percent undiscounted, 12 percent discounted). Since natural gas prices account for two-thirds or more of the total cost of gas generation, this represents almost a nine percent overestimation of the cost of the project. That difference alone is large enough to reverse the conclusion that gas is more expensive in most of the scenarios analyzed by the utilities.

I discuss compliance costs below under the analysis of policy risk.

Demand

Q. Have there been changes in demand that affect the long-term feasibility of these nuclear reactors and the prudence of incurring additional costs on the proposed reactors?

A. Yes. There has been a dramatic change in the marketplace, and demand more specifically, since the companies prepared their need analyses in the respective need dockets and the testimony in Docket 090009-EI. The nation has plunged into the worst recession since the Great Depression. Some even call it a depression. Moreover, there is a growing recognition that this change is not simply a severe dip in the business cycle, but rather a major shift in the economy. The spending binge on which the U.S. embarked for a decade, in which households and business became highly leveraged, is likely over. A massive amount of household wealth was destroyed when the housing market bubble burst. Retirement accounts have been devastated by the collapse of the stock market.

Ironically, the decade on which the projections were based in the Need Determination coincided almost exactly with the decade in which the housing and consumption bubbles were pumped up by excessive leverage. That level of growth was unsustainable. It is my opinion that the shift in consumption is permanent and signals slower growth in the future. However, even if this were just a severe downturn in the business cycle, it would affect the demand for electricity sufficiently to raise questions about the long-term feasibility of these new nuclear reactors.

A reduction in the growth rate of demand has two implications for large central station facilities like nuclear reactors. Since both FPL and Progress have excess capacity at present, slowing demand growth pushes the date at which new generation will be needed farther into the

future. In my 2009 testimony I estimated that the need for the nuclear reactors was at least half a decade away.

> In 2017, which is a crucial year in the 2008 analysis because that was the year the reserve margin hit the limit of 20 percent, the 2009-projected peak is 11 percent lower than the peak projected in 2008. Under the 2009 projection, the FPL does not reach the 2017 peak projected in 2008 until 2022, five years later.[6]

In the current proceeding the utilities affirm my calculations, having pushed the in-service dates to the 2021-2023 period.

Slower demand growth has a second effect. It makes smaller increments to capacity preferable since lumpy generation additions create excess capacity. Excess capacity that is capital intensive imposes unnecessary costs on consumers. To avoid this excess capacity, I later demonstrate that it is preferable for PEF and FPL to build a series of natural gas-fired power plants instead of these proposed nuclear reactors.

Q. Have the utilities reflected this change in demand in their analysis?

A. Yes, they have pushed their expected in-service dates out by about four or five years. The online dates for these reactors are now more than a decade away, beyond the ten-year plan, 2021 and 2022 for Progress, 2022 and 2023 for FPL. That delay makes it unnecessary, imprudent and unreasonable to continue incurring the costs of licensing today. This becomes even more apparent when the impact of likely energy efficiency and renewable energy mandates are taken into account, as I discuss below in the policy risk section.

Q. How does waiting to make a build-no-build decision reduce marketplace risk?

[6] Cooper, 2009, p. 9 line 51.

A. The uncertainty about both natural gas prices and demand growth are likely to diminish. In both of these areas we are coming off of unprecedented events. The decade of growth in demand prior to the need determination was extremely high. Repairing the economy and learning whether it is on a whole new trajectory will take time, and continuing to incur costs on these proposed nuclear reactors during this time is in my opinion unreasonable and imprudent.

Similarly, the volatile natural gas prices were unique to the past decade. That decade may be the exception, rather than the rule, as Exhibit MNC-7 suggests.

POLICY RISK

Need for Non-renewable Resources

Q. Should policy considerations enter into the Commission's evaluation of the long-term feasibility of these reactors and the prudence of incurring additional costs for these reactors?

A. Yes. The companies' economic feasibility analyses were driven by assumptions about federal regulatory policy. The companies have put a high price on carbon in their economic analyses. Without the high price on carbon, the economics of nuclear reactors would look very different. To my knowledge, the state of Florida has not put a price on carbon, nor is it contemplating doing so. Thus, the companies have decided to pursue these projects and the Commission has allowed cost recovery based, in part, on assumptions about federal climate change policy.

Q. Are you suggesting that the Commission should not take future climate change policy into account when considering the long-term feasibility of these reactors?

A. Quite the contrary. I believe the Commission should take federal policy into account when considering the long-term feasibility of these reactors, since that is a major source of regulatory risk to state decisions. However, I believe the Commission must take the **entirety** of projected federal policy into account. The idea of putting a price on carbon is only a part of the legislation that is moving through the Congress. H.R. 2454, the American Clean Energy and Security Act, the first piece of climate change policy legislation to pass a house of Congress, does not simply put a price on carbon directly. Rather, it establishes an elaborate scheme of allowances to emit carbon, which will indirectly set a price on carbon. Moreover, policies other than putting a price on carbon, particularly policies to promote efficiency and renewables, play a large role as well.

Q. Please describe the full suite of federal policies that affect the long-term feasibility of these nuclear reactors.

A. On the supply-side, the legislation that has passed the House has a renewable energy standard that would require utilities to meet an increasing part of their load with renewables. Within a decade, they would be required to get 20 percent of their generation from renewables, with as much as 8 percent of that total coming from efficiency. At the same time, the legislation includes a number of provisions that have sharply lowered projections of the cost of carbon credits, such as efficiency and renewable mandates, subsidies for carbon control technologies and domestic and international offsets. All of these lower the demand for allowances and therefore the price of allowances. This means that the assumed compliance costs of fossil fuels are lower than projected by the companies in prior proceedings and this proceeding.

On the demand side, there is a substantial mandate for energy efficiency. This is embodied, in part, in the ability to meet two-fifths of the renewable resource standard with efficiency and, in

part, in dramatic improvements in building codes and appliance standards. Mandates to improve the energy efficiency of new buildings by 30 percent in the near term and 50 percent in the longer term will have a substantial impact on energy demand over the life of the reactors being considered in this proceeding. Funds from certain allowances are set-aside to improved efficiency, particularly for natural gas. Similarly, the American Recovery and Reinvestment Act of 2009 includes a huge increase in funding to improve the energy efficiency of existing buildings. As the efficiency of buildings and appliances improves, the demand for electricity and natural gas declines.

These regulatory factors – increased renewables, lower demand through efficiency, and a lower price on carbon – must be considered in the evaluation of alternative scenarios for future supply of electricity. Extracting only the price of carbon from the policy landscape and inserting it in the economic analysis, while ignoring the other aspects of policies, distorts the picture being presented to the Commission. Factoring in these other policies would further undercut the claim that nuclear reactors are feasible in the long-term. Many of these other aspects have been part of the climate change policy debate for quite some time. Taken together, these changes on the demand side, as well as the renewable standard, will have a substantial impact on the need for new non-renewable generation and undermine the long-term feasibility of building these reactors.

Q. What impact does including the efficiency and renewable policies in HR 2454 have on projections for load growth and demand for nonrenewable resources such as nuclear reactors?

A. They would have a major impact. Exhibits MNC-8 and MNC-9 set forth demand scenarios that model the impact of the efficiency and renewable mandates in HR 2454 on the need for non-renewable generation in the Progress territory.. It applies the national average results estimated in the EPA analysis of the legislation to Florida. I have factored in planned retirements in this

calculation. The results are similar to the analyses I provided in the 2009 Nuclear Cost Recovery Proceeding. As shown in Exhibit MNC-9, under this scenario, Progress does not reach the peak demand projected in the Need Docket for 2017 until 2040.

Exhibits MNC-10 and MNC-11 present a similar analysis for FPL. New resources to meet the reserve margin requirement are not needed by FPL until 2037. Simply put, with the efficiency and renewables factored in on top of the declining growth rate of demand, neither utility needs new capacity to cover the reserve requirement out until well past 2030.

Q. Are there constraints, other than the reserve margin requirement, that might affect the utilities?

A. Yes. In modeling the full impact of the climate legislation we must pay attention to the mandates to reduce greenhouse gas emissions. Doing the minimum under HR 2454 is not enough for long-term compliance. In the mid-term, allowances can be purchased to keep compliance costs under control and economically attractive options are available beyond the minimum. Buying time in the current environment, at least a decade, perhaps a quarter of a century, to develop the next generation of low cost, low carbon resources is the key strategy.

Under the pending legislation, the entire industry will be working on the problem, as will the public sector institutions. A full range of alternatives will be examined including more efficiency and renewables, whose costs are projected to decline, new forms of storage, which will make renewables more cost effective, expanded transmission that improves access to out of territory renewables, carbon capture and storage, and nuclear generation. Using the maximum amount of time possible to gather information before making these decisions is very valuable because it keeps options open. National policy will be promoting the development of low cost, low carbon options.

Florida ratepayers can benefit by keeping their options open rather than committing to a high cost, long lead-time approach like nuclear reactors.

Compliance Costs

Q. Are there other ways in which delaying the build/no-build decision is valuable in this uncertain regulatory environment?

A. Yes, several. First, and most obviously, the contours of climate policy will become clearer. It is unclear that Congress will pass any climate legislation this year or that any legislation that passes will put a price on carbon. Emphasis seems to be shifting to complementary policies that promote or require efficiency and renewable, and this will have an impact on the need for non-renewable generation and the cost of carbon, as well as the cost of natural gas. The targets and timing, as well as the mechanisms for setting the price will have a big impact on the cost of carbon. However, Commission approval of costs necessary for PEF and FPL to sit in line, as the utilities are requesting, is simply a waste of ratepayers' money at this time and is not necessary in order to delay the build/no-build decision.

Q. Are the utility estimates of compliance costs still a concern?

A. Yes. The analyses continue to be centered on compliance costs that are higher than those projected by EPA, as shown in Exhibit MNC-12. FPL has dropped its highest cost compliance scenario, but its mid case is still above the EPA estimate for HR 2454 and the Kerry Lieberman bill in the Senate. Progress has a zero carbon cost analysis, but its mid-range estimate is still 30 percent above the EPA estimate.

Q. How does waiting to spend ratepayer moneys on these reactors reduce the policy risk?

A. The uncertainty about federal policy is likely to diminish. With the need for generation resources now farther out in the future and the large impact that federal policy can have on the need for non-renewable resources, it would be prudent to wait to see what course federal policy takes before committing any more resources to the reactors, especially resources which are only necessary to allow PEF and FPL to continue to line sit, and certainly the resources that would be committed with the build/no-build decision. The issues that will affect the need for the reactors in the federal legislation include targets and timing of carbon reductions, mandates for alternatives and flexibility in approaches, including the ability to purchase allowances at lower costs than building reactors.

REGULATORY RISK

Q. What regulatory risks do nuclear reactors face?

A. The major regulatory policy risk remains at the Nuclear Regulatory Commission. There are continuing issues with the licensing of the generic design of the AP-1000 technology, as discussed in more detail by Arnold Gundersen on behalf of SACE in this proceeding. The certification of a standard design was supposed to be a key to speeding up the process. The design proposed by the utilities/vendors has encountered numerous problems. Therefore, allowing PEF and FPL to spend ratepayers' money to stand in line while the regulatory hurdles are passed provides no benefit whatsoever to the ratepayers.

Q. How can taking the maximum time possible to make the build, no-build decision lower regulatory risk?

A. The AP-1000 design will possibly have been certified and the licensing process at the NRC may have become more routine after the initial plants have gone through the process. Later plants will benefit from the smoother certification process.

TECHNOLOGICAL RISK

Nuclear Reactor Costs

Q. Have the utilities increased their estimates of nuclear construction costs?

A. Yes, but I still have the opinion that they are underestimating the costs. Furthermore, they have still not offered firm, fixed prices. Therefore, these reactors are likely subject to ongoing future increases, putting ratepayers at risk.

Q. Pleases describe the uncertainties about the cost of nuclear reactors.

A. As described in Exhibit MNC-13, early in this decade vendors and contractors at the Department of Energy produced very low estimates of the cost of nuclear reactors, claiming that things had changed since the first generation of reactors. In the eight years since those initial, promotional studies were released, the estimates of the cost of nuclear reactors has increased dramatically, especially among Wall Street and independent analysts. As long as the costs placed before the Commission are "non-binding," the Commission must be aware of the growing uncertainty about the cost of nuclear reactors. As long as they are "non-binding," the prospect of cost escalation places ratepayers at risk, especially where costs for construction work in progress is being granted.

In fact, the extreme uncertainty about nuclear reactor costs has caused FPL to create a whole new framework for evaluating options. As FPL stated in the Need Docket:

> The second difference in the economic analysis approach step that developed the CPVRR costs for the resource plans is that no generation or transmission capital costs associated with Turkey Point 6 & 7 were included in the analysis. The reason for this is that *FPL does not believe it is currently possible to develop a precise projection of the capital cost associated with new nuclear units with in-service dates of 2018-on.* Consequently, FPL's economic analysis approach normally used to evaluate generation options has been modified to include a second economic analysis step." ("Need Study for Electrical Power, Docket No. 07-0650-EI, Florida Power and Light Company, October 16, 2007, pp. 104-105, emphasis added).

Similarly, Progress has recently increased the cost estimate previously placed before the commission for construction of the LNP.

In the 33 months since that statement was made, there have been dozens of studies of the projected costs of nuclear reactors. The cost in 2008 $ have ranged from a low of just under $2400/kW to a high of just over $10,000/kW. The Florida utilities' estimates are still in the low end of the range of estimates. Recent cost trends in generation construction suggest that the utility cost projections did not incorporate the run up in nuclear construction costs. Moreover, the cost of construction for non-nuclear generation rose more slowly during the recent phase of price increases and has fallen more quickly in recent months.

The two conclusions I would draw from this analysis are (1) the range of costs considered by FPL and PEF is too narrow and too low, and (2) the uncertainty is huge. This only reinforces my opinion that the prudent course would be to avoid rigid, expensive choices, especially if there is time to let the uncertainties diminish before decisions must be made. The Commission should not allow ratepayer funds to be spent to hold the utilities place in line or to fund a build, no build decision made prematurely.

Efficiency and Renewables

Q. Should changing technological conditions factor into the analysis of the long-term feasibility of these reactors?

A. Yes. While climate policy is seen as giving a direct advantage to reactors by putting a price on carbon, that policy does much the same for other technologies. In fact, there are ways in which the alternative technologies are likely to receive an even larger boost. There are also many programs targeted at various technologies that are in earlier stages of development that may enjoy larger cost reductions as the science advances and the scale of production ramps up.

I believe there are two technological developments that are shifting the terrain in ways that disfavor nuclear reactors, in addition to the uncertainties about nuclear technology discussed above – the availability and cost of conserved energy and the availability and cost of renewables.

Q. Please describe the emerging terrain for efficiency technologies.

A. There is a growing consensus that the cost of many alternatives is lower than that of nuclear reactors. For efficiency, the change in the terrain is largely a matter of increasing confidence that substantial increases in efficiency are achievable at relatively low cost. The detailed analysis of potential measures and the success of some states at reducing demand through energy policies have increased the confidence that efficiency is a reliable option for meeting future needs for electricity by lowering demand. At the same time that the policy process has opened a range of uncertainty and flexibility, studies from three major national research institutions have sent a strong signal indicating the direction that the effort to meet energy needs in a carbon-constrained environment must follow.

In fact, since I filed testimony in the 2009 cost recovery proceeding, three major national research organizations have affirmed the potential of efficiency to contribute to an affordable, low carbon future. The National Research Council (NRC), relying on a study by the Lawrence Berkeley

National Laboratory (LBL),[7] and McKinsey and Company[8] concluded that efficiency could cut energy consumption by 25 percent to 30 percent at costs that are far below the current and projected future cost of new energy generation. The American Council for an Energy-Efficient Economy (ACEEE) took a somewhat different approach by modeling the energy efficiency provisions of the House bill. It found that, as passed, ACES would result in an 8 percent reduction in energy use nationwide by 2030, relative to the *Annual Energy Outlook 2009* forecast.[9] At the same time, the ACEEE study found that more aggressive efficiency policies would save a great deal more energy, approximately 27 percent, and produce much larger dollar savings. Another ACEEE that was done specifically for Florida found that aggressive policies to reduce energy consumption could lower demand by 20 percent at a cost of less than 3.5 cents per kWh.[10]

Thus, independently of any regulatory mandate, as the technology of efficiency is proven out, the Commission should consider greater reliance on it as part of the least cost approach to meeting the need for electricity. The combination of regulatory and technological changes will drive efficiency into the electricity sector, undermining the long-term feasibility of the reactors and the prudence of spending ratepayer money on these proposed reactors at this time.

Q. Please describe the emerging terrain of renewables.

[7] National Research Council of the National Academies, *America's Energy Future,* August 2009. The National Research Council relied on a study from Lawrence Berkeley National Laboratory (Brown, Richard, Sam Borgeson, Jon Koomey and Peter Biermayer, *U.S. Building-Sector Energy Efficiency Potential*, September 2008).

[8] McKinsey & Company, *Unlocking Energy Efficiency in the U.S. Economy,* July 2009.

[9] Gold, Rachel, Laura, et al., Energy Efficiency in the American Clean Energy and Security Act of 2009: Impact of Current Provisions and Opportunities to Enhance the Legislation, American Council for an Energy Efficient Economy, September 2009), page 5.

[10] Elliott, R. Neal, et al. *Potential for Energy Efficiency and Renewable Energy to Meet Florida's Growing Energy Demands,* American Council for an Energy-Efficient Economy, June 2007

A. The concern with climate change has sharpened the focus on the cost and availability of renewable technologies. For renewables, the change is in strong cost reductions that are expected as new technologies ramp up production, as shown in Exhibit MNC-14. The combination of regulatory and technological changes will drive renewables into the electricity sector, undermining the long-term feasibility of these proposed nuclear reactors and the prudence of spending ratepayer money on these proposed reactors at this time.

Execution Risk

Q. What is Execution Risk?

A. This is the risk that the project will not be implemented on time and on budget. It focuses on the internal management of the project by the companies. On the one hand, utilities tend to deny that execution risk exists. On the other hand, they tend to blame the slippage in execution of the project on other factors or actors, insisting that causes were beyond their control. This is most evident in the case of Progress, which is attempting to explain a five-year delay in the LNP.

I believe the Commission should look back at PEF's decision to move forward with the project to ensure that a similarly flawed analysis is not used this year to determine whether or not completion of the LNP is feasible. Rushing ahead with the wrong project using models that distort the decision are execution problems from the broader perspective of least cost planning

Q. Can you quantify the benefits of making flexible investments in generating resources, as compared to nuclear power plants?

A. In my 2009 testimony I emphasized the importance of factoring excess capacity into the analysis when I stated.

> The operating cost estimates should not include excess production and the variable costs associated with that production. If capacity is idled because of excess, then the carrying cost of that excess should be subtracted from the savings. These are costs that would not be incurred if the system were "right" sized. Because nuclear reactors come in larger units and have higher capital costs, while natural gas units are small, lower in capital cost and have higher operating costs, ensuring that the model takes these differences into account become more important when demand declines and excess capacity increases….
>
> Over a long time horizon, the ability to match supply and demand (plus the reserve margin requirement) should be rewarded….
>
> While the excess capacity is a few percentage points spread over a number of years, it can make a difference if it is handled properly. The economic advantage claimed for nuclear is actually quite small, when compared to the total costs of the system.[11]

Having concluded that the need to meet the reserve margin should not be the driver of generation investments with demand growth slowing, developing approaches that allow the Commission to consider the differences between large, lumpy additions of capacity and smaller more flexible additions becomes critical. This is one area where the utilities have done nothing, so I have worked up an example of how important this consideration can be.

Q. What data did you use to develop this example?

A. I have used the detailed data on the CVPRR of the individual cost components provided by FPL in the 2009 docket, since this is the only such detail that has been provided in any of the dockets.[12] I use the high capital cost estimate from 2009, since that is close to the reference cases used in this docket. I have adjusted the discount rate since that has a large impact on the present value of costs. To make the adjustment, I inflated the 2009 PV numbers by the 2009 discount rate to arrive at a real, undiscounted estimate of the revenue requirement. I discounted those costs at the 2010 discount rate. I have also adjusted the natural gas costs to the 2010 estimates. By using these

[11] Cooper Testimony in Docket 090009-EI, pp. 34-36.
[12] Response to Staff Seventh Set of Interrogatories Question 64, attachment 1, page 7 of 9.

data provided by FPL, I am not agreeing with the cost inputs assumed by FPL in 2009 or 2010. This example is used to show the relative overall costs of a different scenario of adding natural gas generating capacity.

I used the 2009 capital costs as originally stated because several factors offset one another. The weighted average cost of capital has been reduced from 10.2 percent to 8.4 percent, but the capital cost of the project has been increased by 9 percent. Since I am focusing on the relative cost of nuclear and gas, not the absolute numbers, the example provides good insight into the impact of treating gas generation flexibly. In the 2009 analysis in the mid-gas, mid-compliance cost case, FPL calculated gas as 7.5 percent more costly than nuclear (without the capital cost of the new reactors). In the 2010 analysis, the difference was 7.7 percent.[13]

Q. How do you model the impact of installing smaller gas fired units incrementally?

A. FPL assumes that natural gas must be added in large increments that are roughly the same size at roughly the same time. Ironically, they sequence two nuclear reactors (about 18 months apart), but they do not sequence three combined cycle natural gas units to gain the economics of sequencing. If gas is treated as a more flexible source of generation, which it is, the Commission gets a very different picture of the relative economics.

Since FPL assumes three combined cycle units added at one time, Exhibit MNC-15 contrasts a scenario in which gas plants are added in three separate steps five years apart. Progress adds combined cycle units two at a time, suggesting there is some flexibility.

Exhibit MNC – 15 shows the small advantage that nuclear has in the FPL base case, because FPL projects that the large capital costs are eventually offset by rising natural gas prices. However,

[13] Compares Response to Staff Second Set of Interrogatories Question 45, attachment 1, to Sim Ex. SRS-10.

the net effect of treating gas as a more flexible resource is to lower the cost of gas by 17 percent, giving natural gas a cost advantage over nuclear that is larger than the base case advantage claimed for nuclear.

Exhibit MNC-15 also shows the effect of flexible gas additions with gas prices set at EIA gas projections. The combination of treating gas a resource that can be added in small increments and using a more reasonable projected price of gas lowers the gas cost by almost one-quarter.

Finally, MNC-15 shows the impact of a ten-year delay in the online operation of the proposed nuclear reactors. This would be consistent with the scenario in which climate policy reduced need for non-renewable resources as discussed above. The gas scenario would be almost 40 percent less costly than the scenarios that bring these reactors on line in the early 2020s.

Q. Do these results apply to Progress?

A. The reference cases for the two utilities are quite similar. As noted above, the gas price and carbon cost assumptions are similar. Progress has a slightly lower weighted average cost of capital because of assumed lower borrowing costs and a slightly lower discount rate. In the end, their base case results are quite similar, although that similarity is obscured by the methodology adopted by FPL to back into the capital cost number. FPL calculates how much it could spend on the nuclear project and still have it be less costly than gas. Progress estimates how much the nuclear project would cost if it spent a specific amount on the nuclear project and then asks how much consumers would save at the assumed cost of nuclear.

Using the data from the FPL scenarios, we can reconcile the two approaches. Exhibit MNC-16 shows that for every $1000/KW of overnight costs added to the nuclear project, the CVPRR of the nuclear project increases by $2.81 billion. Using FPL's high-end estimate of overnight costs of

$4950, which appears to be in the middle of the range considered by Progress, I calculate that FPL claims the nuclear project saves consumers $4.511 billion. This is quite close to the Progress mid-fuel, mid- carbon cost case reference capital cost case, which claims consumers would save $4.77 billion.

There are differences, however. Progress adds gas facilities in smaller increments. It has more excess capacity in the early years and is retiring gas plants, which could be put into inactive reserve. Moreover, Progress claims a very large cost savings by adding the two nuclear units in a year apart (i.e. the first unit costs almost twice as much as the second, (Updated Life-Cycle Net Present Works Assessment, JL –3, p. 3), which makes the increase in generation capacity from the nuclear project extremely large in an environment with more slowly growing demand.

The purpose of this example is not to offer a precise estimate of the costs, but to impress upon the Commission the importance of looking at the excess capacity issue and the value of the addition of smaller and more flexible increments. The specific parameters and assumptions that are applicable will affect the outcome of the analysis, but the order of magnitude of these effects indicate that they are extremely important for the Commission to consider.

Financial Risk

Q. Are there other quantifiable benefits of deferring the decision on nuclear construction further than the time proposed by PEF and FPL?

A. Yes. Utilities face capital constraints in the current environment and pursuing nuclear projects will make them worse, as shown in Exhibit MNC-17. The near-term capital requirements of nuclear reactors are much larger than those of gas plants. The financial ratios of the utilities can be

analyzed with and without the nuclear project and the impact of the weaker ratios of the cost of capital can be estimated.

Q. Are there other capital cost issues that the Commission needs to aware of?

A. Yes. The Commission must be careful not to establish a "Catch 22" that could ultimately costs ratepayers billions. It recently lowered the return on equity allowed for FPL. This has the effect of lowering the cost of capital-intensive project like nuclear reactors. FPL also uses the lower ROE to lower the discount rate in its analysis of long-term feasibility in this docket. This has the effect of increasing the net present value cost of alternatives with rising fuel prices, like natural gas.

However, FPL claims that the ROE set by the Commission may not be high enough to enable it to attract capital for nuclear reactors.[14] If the utility has trouble raising capital and the Commission is convinced to increase the ROE, then the long-term feasibility analysis required as part of this docket should be revisited, because both the changed ROE and discount rates will affect the results. This is not just an accounting question. Nuclear reactors have a higher cost of capital because they are more risky. It may be appropriate to use different costs of capital to assess different types of projects. Alternatively, the Commission could estimate the cost to consumers of the increase in the overall cost of capital resulting form the pursuit of the riskier project.

The Commission also needs to examine the discount rate used in the analysis. The utility is conducting the analysis from the utility point of view, decreasing the discount rate when the ROE is reduced. This has the anomalous effect of lowering the overall cost of both the nuclear and natural gas projects at the higher cost of capital. The higher the return on equity, the higher the nominal

[14] FPL response to OPC's Third Set of Interrogatories, Interrogatory No. 40, p.1.

value of the revenue requirement, but the lower the present value because the entire revenue requirement (not just the capital cost revenue requirement) is being discounted at a higher rate.

A case can be made that the investments should be viewed through the eyes of the ratepayer, not the utility. The ultimate objective of public utility regulation is to deliver reliable electricity at the least cost to consumers. If we take least cost to mean to the consumer, then an argument can be made that the consumer discount rate should be used. The utility cost of capital already reflects the primary utility concern about the revenue requirement. The consumer discount rate and the utility discount rate may or may not move in tandem. Moreover, utilities make choices that affect their cost of capital, but not the consumer discount rate.

Q. Please summarize your conclusions.

A. As I predicted in Docket 090009-EI, dramatically changed circumstances surrounding the licensing and construction of new nuclear reactors has forced PEF and FPL to push the possible construction of these proposed nuclear reactors off into the future beyond the time horizon of the ten-year planning process and even the extremely long lead time that they originally claimed was needed to construct new reactors. Nevertheless, despite even more uncertainty at this point in time, both PEF and FPL want to continue to spend ratepayer funds in the near term, even though those expenditures would provide little benefit to ratepayers. Put simply, the near term expenditure of funds to allow PEF and FPL to sit in line at the NRC is not only unnecessary, but also unreasonable and imprudent. Ultimately, neither PEF nor FPL can demonstrate the long-term feasibility of these proposed nuclear reactors if realistic assumptions are made about future demand and the cost of various alternatives as I have discussed above.

Instead of forcing ratepayers to pay for PEF and FPL to sit in line, the time that recent developments afford the utilities and the Commission should be used to study the landscape and gather information, as opposed to plowing ahead and continuing to spend ratepayer funds on proposed reactors that increasingly look like bad decisions. Over the next few years the high degree of uncertainty regarding all of the key parameters that affect the decision may be sharply reduced:

- Market factors including demand growth after the recession and gas prices.
- Federal climate policy including targets and timing of emission reductions, efficiency and renewable mandates affecting the need for non-renewable generation, the existence, mechanism and level of a price on carbon, flexibility in the purchase of allowances.
- Regulatory uncertainty in the NRC design certification and reactor licensing
- Technology factors including the cost of nuclear, particularly, first of a kind v. later costs, and alternatives
- Financial pressures on the utility balance sheets may alleviate

The Commission can, and should, use this time to require the utilities to build and test models that reflect a broader view of least cost generation supply.

Ultimately, spending valuable ratepayer dollars in the near term to advance projects that are not feasible in the long-term is imprudent. The delays in projected online operation of these proposed reactors should provide a respite from these spending of funds until the utilities can demonstrate that completion of these proposed reactors is feasible in the long-term and that continuing to incur costs on the reactors is reasonable and prudent.

Q. Does this conclude your testimony?

A. Yes.

RISK FACTORS FACING CONSTRUCTION OF NEW NUCLEAR REACTORS

Category	Source	Specific Risks
Technology risk stems from the fact that the new generation of nuclear reactors are new and uncertain. Cost estimates have increased dramatically over the past five years, doubling or tripling. At the same time, the technologies of alternatives, efficiency and renewables are stable and well known. Costs are declining and availability is rising	New Technology Risk	First of a kind costs Long-lead time
	Alternative technologies	Efficiency potential identified Renewable cost declines
Policy risk stems for the fact that federal policy is in flux. While nuclear advocates have looked to climate policy, which may put a price tag on carbon emissions, as a primary driver of the opportunity to expand the role of nuclear power, they have failed to take account of the equally strong possibility that climate policy will create a very substantial mandate for conservation and renewables, which will dramatically shrink the need for new, nonrenewable generating capacity	Shifting focus	Emphasis on efficiency reduces need Emphasis on renewables reduces need
	Flexible GHG reductions	Lowers carbon cost
Regulatory risk stems from the chance that regulators will move slowly in approving reactors or authorizing their cost recovery. The new designs has proven challenging, with the reference designs going through dozens of revisions. Site-specific issues, which cannot be standardized, have proven contentious. While a few states have approved construction work in progress and other measures to ensure cost recovery, the vast majority has not.	NRC Regulatory Reviews	Lack of Experience Change of requirements Design flaws and revisions Site specific contentions
	Loan Guarantee Conditions	Taxpayer protections inhibit loans
	Rate Review	Recovery of costs challenged

Execution risk stems from the fact that these reactors are new and the industry does not have a great deal of capacity. Of the 20 projects that have applied for licenses at the Nuclear Regulatory Commission, eighteen have suffered from one or more of the following problems, delay, cancellation, cost escalation or financial downgrade.	Construction Risk	Lack of experience
		Counterparty risk
	EPC contract uncertainties	Cost escalation and volatility
	Size, cost and complexity	Cost overruns
		Delays
Marketplace risk on the demand-side flow from the current recession, the worst since the Great Depression, which has not only resulted in the largest drop in electricity demand since the 1970s, but also appears to have caused a fundamental shift in consumption patterns that will lower the long term growth rate of electricity demand dramatically. On the supply-side of the market, there are a host of alternatives that have lower cost to meet the need for electricity in a carbon-constrained environment and there is growing confidence in the cost and availability of alternatives.	Uncertain demand growth	Slowing due to recession
		Shifting due to debt and loss of wealth
	Uncertain fuel costs	Natural gas price decline
	Reactor Costs	Long lead time
		Cost overruns
		Rate shock reduces demand
Financial risk stems from all of the above risks and are magnified tight conditions in money markets and the fact that utility balance sheets are weak and too small to support the large size of nuclear reactor projects. The nature of the projects imposes additional financial risks, so much so that, for most utilities, the projects are so large that Moody's has called them "bet the farm" decisions.	General Conditions	Tight money
		New Liquidity requirements
		High-risk premiums
	Utility Finance	Increased nuclear operating exposure
		Existing debt and need to refinance
		Financial ratio deterioration
		Rising cost of debt
		Limited & declining cash & equivalents
		Weak balance sheets
		Underfunded pension plans
	Project Finance	High hurdle rate for risky projects
		Impact of large project
		Debt load and service burden impact
		Capital structure distortion

Source: Mark Cooper, *All Risk, No Reward* (Institute for Energy and the Environment, December 20009)

Unrealistic Assumptions Masking the Real Economics of Nuclear Reactors

Technology:

- **Assumption:** Nuclear cost projections were low, while the cost characteristics of alternatives were ignored. The contribution that alternatives (efficiency and renewables in particular) can make to meet the need for electricity was downplayed.
- **Reality:** Nuclear costs are much higher than originally claimed and remain highly uncertain. There is growing confidence in the cost and availability of alternatives that makes them more attractive.

Policy:

- **Assumption:** Public policy would put a high price on carbon and escalate the demand for nuclear because alternatives (especially efficiency and renewables) would not also be promoted by public policy.
- **Reality:** Efficiency/renewable standards are likely to play a large part in climate policy. This makes alternatives more attractive. Reliance on efficiency, international offsets, and other policies that provide flexibility in meeting greenhouse gas abatement goals lowers the cost of carbon.

Regulatory:

- **Assumption:** The standardized designs would lead to rapid approval of licenses and work authorizations. Loan guarantees would flow with little scrutiny and oversight.
- **Reality:** The standard designs have proven not to be so standard, with dozens of revisions forwarded to the Nuclear Regulatory Commission for evaluation. Site-specific issues cannot be standardized and they remain the object of important contentions.

Execution:

- **Assumption:** Standardized design and accelerated certification would enable utilities to quickly move into the construction phase. Low estimates of the cost of nuclear reactors would lead to rapid regulatory approval and support at the state level.
- **Reality:** Standardized designs have gone through numerous revisions. Site approvals remain contentious. Approval of loans has required more time and information than anticipated. Technological uncertainty raises prospects of cost overruns. First of a kind costs and lack of standard design raises construction risk and construction has not begun in the U.S., while projects abroad have encountered difficulties. Operating risks of new designs are unknown and foreign activities to not resolve these concerns.

Marketplace:

- **Assumption:** Demand growth and commodity prices for fossil fuels would remain high.
- **Reality:** Declining demand as a result of the "Great Recession" reduces need for large quantity of new generation. Falling price of natural gas makes natural gas more attractive. Growing confidence in lower cost alternatives makes them more attractive.

Finance

- **Assumption:** Financing would be readily available.
- **Reality:** Tight Financial markets make finance more difficult generally. The large size of the project relative to the balance sheets of utilities and the increasing concern about nuclear reactors makes capital market finance more expensive and difficult, if not impossible.

Source: Mark Cooper, *All Risk, No Reward* (Institute for Energy and the Environment, December 20009)

EXHIBIT 30

Docket No. 100009-EI
Exhibit MNC-3
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INCREASING RISKS FACING NUCLEAR REACTOR CONSTRUCTION PROJECTS

Cooper Category	**Areas of concern (p. 11)**	**Negative impact on nuclear build**
Regulatory:	Federal licensing and permitting	NRC slippage (pp. 8-11)
	State: DSM	Lower demand (p. 24)
Policy:	Federal	Failure to decide environmental policy (p. 31) Yucca Mtn. waste (p.37) EPA under Clean Air Act (p. 32)
	State	Legislative opposition to nuclear (p. 27) RPS standards (p. 30)
Technology	Capital intensity	Fixed, sunk costs (p. 15)
Marketplace:	Load growth,	Recession slowdown (p. 13
	Consumer pocketbooks	Inability to pay (p.12)
Financial:	Capital market reactions	Fewer internal funds (p. 13)
		Negative ratings (pp. 15-19)

Source: Page References to Direct **Testimony of Jeff Lyash, Docket No. 100009, April 30, 2010**

NEGATIVE EVENTS IN THE NUCLEAR RENAISSANCE

Month	Event
Jan-08	MidAmerican cancels proposed Idaho reactor (1)
Feb-08	NRC suspends application for *South Texas Project* reactors because application is incomplete (NRG has since reapplied) (2)
Feb-08	Florida Power and Light revises cost estimates for *Turkey Point* reactors from around $8 billion to $24 billion (3)
Mar-08	Progress Energy triples cost estimates for *Levy County* reactors to $17 billion (4)
Aug-08	Constellation increases cost estimates for *Calvert Cliffs* reactors from $2 billion to $9.6 billion (5)
Oct-08	Progress Energy increases cost estimates for *Shearon Harris* reactors from $4.4 billion to $9.3 billion (6)
Nov-08	Duke Energy increases cost estimates for *William States Lee* reactors from $5 billion to around $11 billion (7)
Dec-08	TVA increases cost estimates for *Bellefonte* reactors from $6.4 billion to $10.4 billion (8)
Mar-09	Entergy suspends application for *River Bend* reactor in Louisiana (9)
Mar-09	Entergy suspends application for *Grand Gulf* reactor in Mississippi (10)
Apr-09	AmerenUE cancels proposed *Callaway* reactor (11)
May-09	Exelon cancels two proposed *Victoria County* reactors (Has since reapplied for an Early Site Permit) (12)
May-09	Progress Energy in Florida announces at least a 20-month delay on planned reactors at *Levy County* (13)
May-09	PPL's cost estimates for one reactor at *Bell Bend* skyrockets from $4 billion to $13-15 billion (14)
May-09	Moody's downgrades PPL to negative outlook over proposed reactor at *Bell Bend* (15)
Jul-09	Moody's and Fitch downgrade SCE&G due to proposed *VC Summer* reactors (16)
Aug-09	TVA cancels three proposed reactors at *Bellefonte* site (17)
Aug-09	Constellation delays NRC's review of *Nine Mile Point* application to September 2010, a one-year delay (18)
Aug-09	NRC delays the scheduled publication of the final environmental review for Constellation's *Calvert Cliffs* in Maryland to February 2011, a delay of 13 months (19)
Aug-09	TVA delays proposed *Bellefonte* reactor from 2016 to 2020-2022 (20)
Sep-09	AP-1000 design in 17th revision; NRC announces more problems that will likely delay AP-1000 designs like *Shearon-Harris, Lee,* and *Vogtle* reactors
Sep-09	Duke delays *William States Lee* reactors from 2016 to 2021 (21)
Sep-09	Moody's gives negative credit rating to Oglethorpe over planned investment in *Vogtle* reactors (22)

Oct-09 NRC identifies significant safety issues with AP-1000 shield design, potentially signaling delays with over half of the proposed reactors in the US (23)

Oct-09 New cost estimates for *South Texas Project* reactors go up $4 billion, a 30% increase (24)

Nov-09 Fitch downgrades SCANA over risks posed by SCE&G's two nuclear reactors at *VC Summer* (25)

Nov-09 Areva announces plans to modify EPR reactor design at the request of safety bodies in the UK, France, and Finland (26)

Dec-09 Unistar asks NRC to suspend application for *Nine Mile Point 3* reactor (27)

Jan-10 FP&L announces that they'll suspend plans for *Turkey Point* reactors based on decision of Florida PSC to reduce proposed rate hike from $1.26 billion to $75.5 million (28)

Jan-10 Progress Energy announces that they'll slow the *Levy County* process based on the same Florida PSC decision, in which they got none of a $500 million rate hike request (29)

Jan-10 Fitch puts FP&L (*Turkey Point* reactors) on ratings watch 'Negative' after decision by Florida PSC to not provide CWIP (30)

Feb-10 Progress Energy extends delay on L*evy County* reactors to at least 36 months. (31)

Feb-10 Toshiba/Westinghouse indicate that regulatory problems will in Florida (*Turkey Point* and *Levy County*) for up to 3 years. (32)

Mar-10 FP&L announces delay of *Turkey Point* reactors past 2018, signals interest in federal loan guarantees. (33)

Apr-10 Moody's downgrades FP&L from low to moderate risk over *Turkey Point* reactors. (34)

Apr-10 NRC states that design-review certification of US-APWR will take at least an additional six months, shifting deadlines well into 2011. (35)

May-10 Cost estimates move from $17.2 billion for the two reactors to $22.5 billion for *Levy County* reactors. (36)

May-10 Fitch downgrades Progress Energy (*Levy County* and *Shearon Harris* reactors) to just above junk bond status. (37)

May-10 TVA opts to go with old Babcock and Wilcox design for single reactor at *Bellefonte*, citing untested status of new designs. (38)

May-10 The timeline for the two *Levy County* reactors has been pushed back again, with the first due in 2021, the second some 18 months later. The original timeline had the reactors set to come online in 2016 and 2018 respectively. (39)

Sources

1- http://www.boiseweekly.com/boise/nuclear-dropout/Content?oid=935457
2- http://www.austinchronicle.com/gyrobase/News/Blogs/?oid=oid:592344
3- http://www.nukefree.org/node/154

4- http://www.tampabay.com/news/business/energy/article414393.ece
5- http://www.nirs.org/factsheets/mdatwhatcostfactsheet.pdf
6- http://www.wral.com/news/news_briefs/story/3759561/
7- http://www.world-nuclear-news.org/NN-Duke_raises_cost_estimate_for_Lee_plant-0711084.html
8- http://timesfreepress.com/news/2008/dec/12/tennessee-estimates-rise-nuclear-plant/?local
9- http://www.bloomberg.com/apps/news?pid=21072065&refer=conews&tkr=ETR%3AUS&sid=aQcR4U.m.9ic10- Ibid
11- http://www.komu.com/satellite/SatelliteRender/KOMU.com/ba8a4513-c0a8-2f11-0063-12-bd94c70b769/d7e98869-80ce-0971-01b0-5ba68260a7c2
12- http://blogs.wsj.com/environmentalcapital/2009/06/30/no-nukes-of-exelon-and-rising-government-influence/
13- http://www2.tbo.com/content/2009/may/01/011253/progress-energy-delays-nuclear-plant/news-money/
14- http://www.nonukesyall.org/pdfs/taxpayers_for_common_sense.pdf
15- http://www.thestreet.com/story/10499503/moodys-changes-ppl-outlook-to-negative.html
16- http://www.southernstudies.org/2009/07/nuclear-plans-hurting-power-companies-credit-ratings.html
17-` http://www.tva.gov/environment/reports/blnp/index.htm
18- http://www.valleynewsonline.com/viewnews.php?newsid=86590&id=1
19- http://adamswebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS^PBNTAD01&ID=092400026
20- http://www.timesfreepress.com/news/2009/aug/07/bellefonte-construction-pushed-back-again/
21- http://www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html
22- http://www.opc.com/oracle_cons/groups/public/@opc-web/documents/webcontent/ct_000404.pdf
23- http://charlotte.bizjournals.com/charlotte/blog/power_city/2009/10/nrc_rejects_westinghouse_reactors_shield_design.html
24- http://www.mysanantonio.com/opinion/67038032.html
25- http://www.earthtimes.org/articles/press/fitch-rates-scanas-junior-subordinated-notes-bbb,1050101.html
26- http://www.nuclearpowerdaily.com/reports/Nuclear_safety_bodies_call_for_redesign_of_EPR_reactor_999.html
27- http://www.syracuse.com/news/index.ssf/2009/12/application_reivew_for_buildin.html
28- http://www.salem-news.com/articles/january182010/fla_nukes.php
29- http://triangle.bizjournals.com/triangle/stories/2010/01/18/daily14.html
30- http://www.earthtimes.org/articles/press/fitch-places-florida-power-amp,1117524.html
31- http://www.istockanalyst.com/article/viewiStockNews/articleid/3880743
32- http://www.reuters.com/article/idUSSGE6120H420100203
33- http://www.istockanalyst.com/article/viewiStockNews/articleid/3880743
34- http://www.streetinsider.com/Downgrades/Moodys+Downgrades+FPL+Group+%28FPL%29+Credit+Ratings+from+A2+to+Baa1%3B+Outlook+Stable/5517661.html
35- http://www.nrc.gov/reactors/new-reactors/design-cert/apwr/review-schedule.html

36- http://www.gainesville.com/article/20100506/ARTICLES/5061056

37- http://www.bizjournals.com/tampabay/stories/2010/04/26/daily39.html?ana=from_rss&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bizj_tampabay+%28Tampa+Bay+Business+Journal%29
38- http://blog.al.com/breaking/2010/05/tva_recommending_conventional.html
39- http://www.gainesville.com/article/20100506/ARTICLES/5061056

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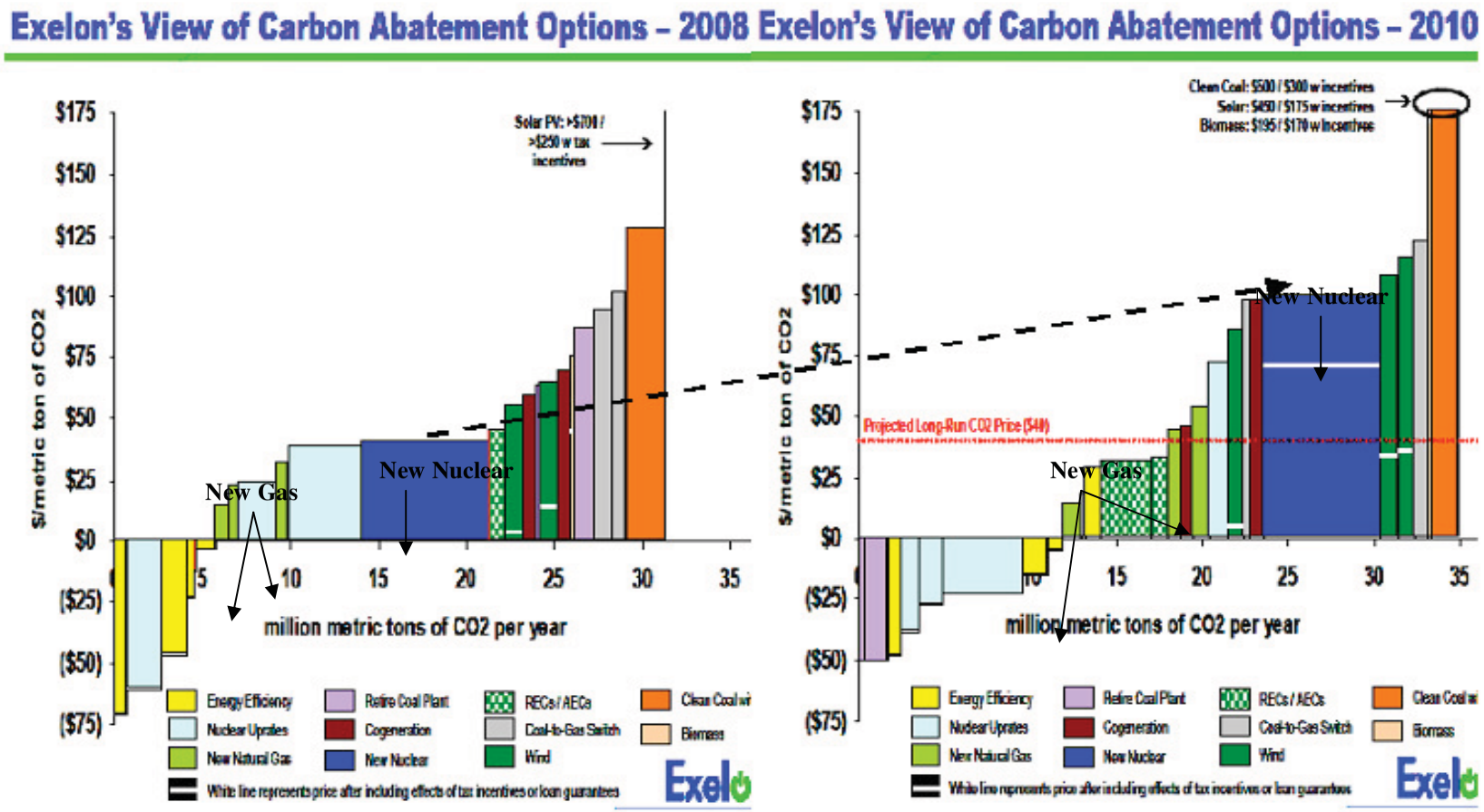
EXELON'S VIEW OF THE DETERIORATING NUCLEAR AS A CARBON ABATEMENT OPTION



Source: John W. Rowe, *Fixing the Carbon Problem without Breaking the Economy,* Resources for the Future Leadership Forum Lunch, May 12, 2010

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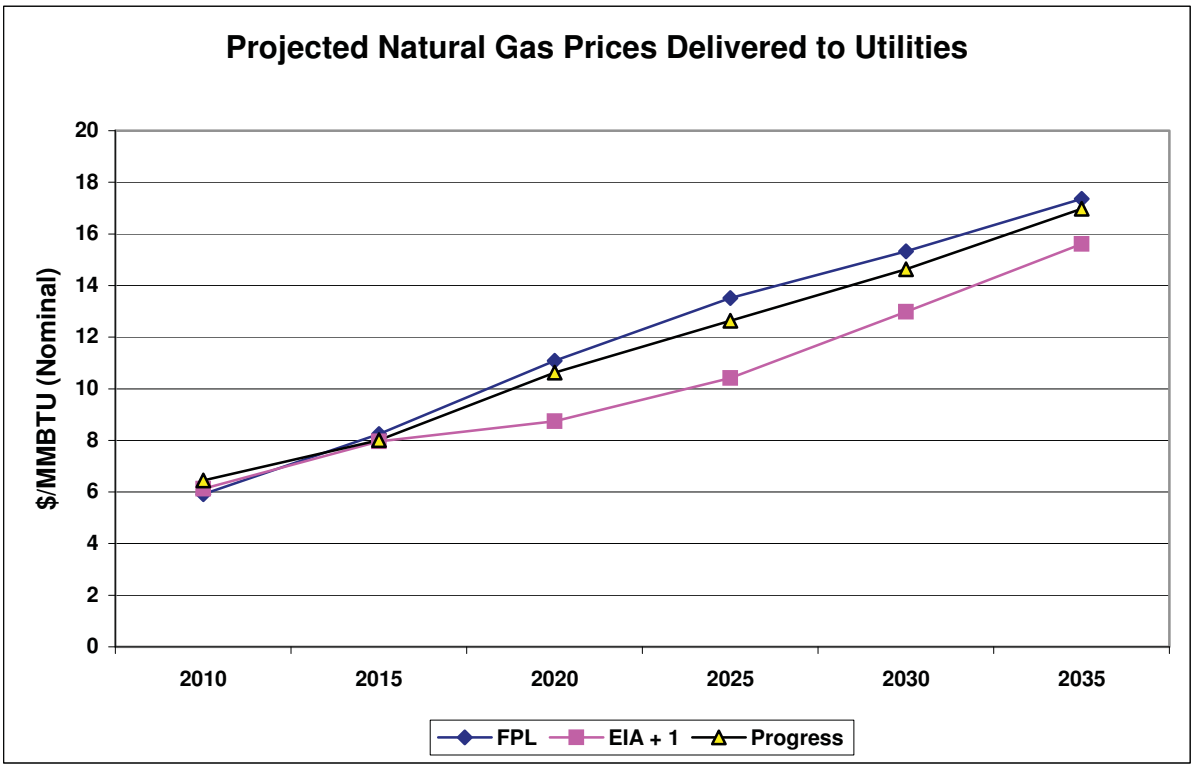
PROJECTED NATURAL GAS PRICES COMPARED TO EIA PROJECTIONS



Source: FPL, Sims SRS-2, p. 1-of-1; PEF: Lyash, JL-3, p. 4 of 12. EIA, Annual Energy Outlook, Table 13. *http://www.eia.gov/oiaf/forecasting.html*

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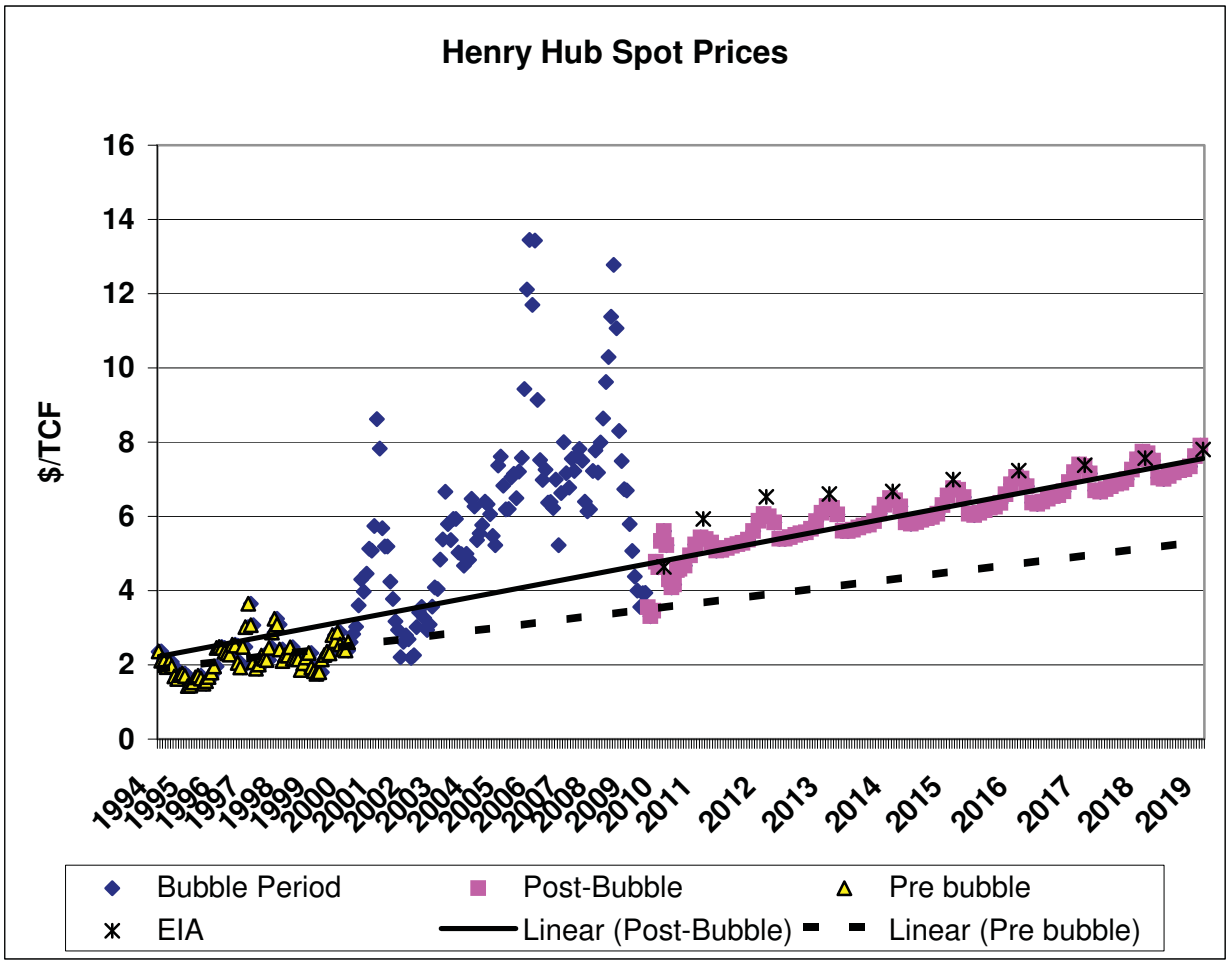
THE DECADE OF VOLATILE NATURAL GAS PRICES MAY HAVE BEEN THE EXCEPTION, NOT THE RULE



Source: Pre-bubble, Energy information Administration http://www.eia.gov/dnav/ng/ng_pri_fut_s1_d.htm; Post-bubble, NYMEX visited 6/30/10.

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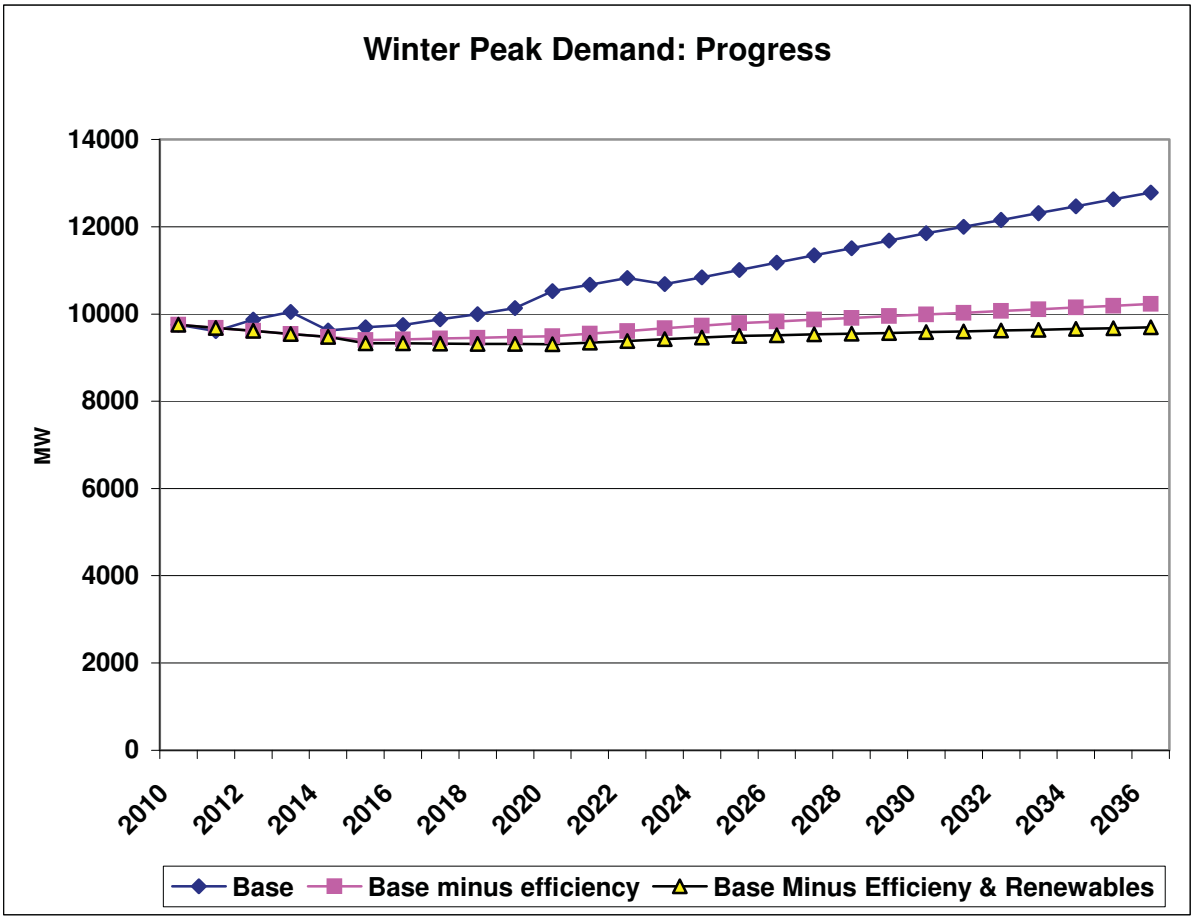
DECLINING PEAK LOAD PROJECTIONS



Source: Progress Energy Florida: Levy Nuclear Project NCRC, Updated Life-Cycle Net Present Worth (CPVRR) Assessment, p. 10; efficiency and renewables based on Environmental Protection Agency, *Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009, January 29, 2010,* p. 38.

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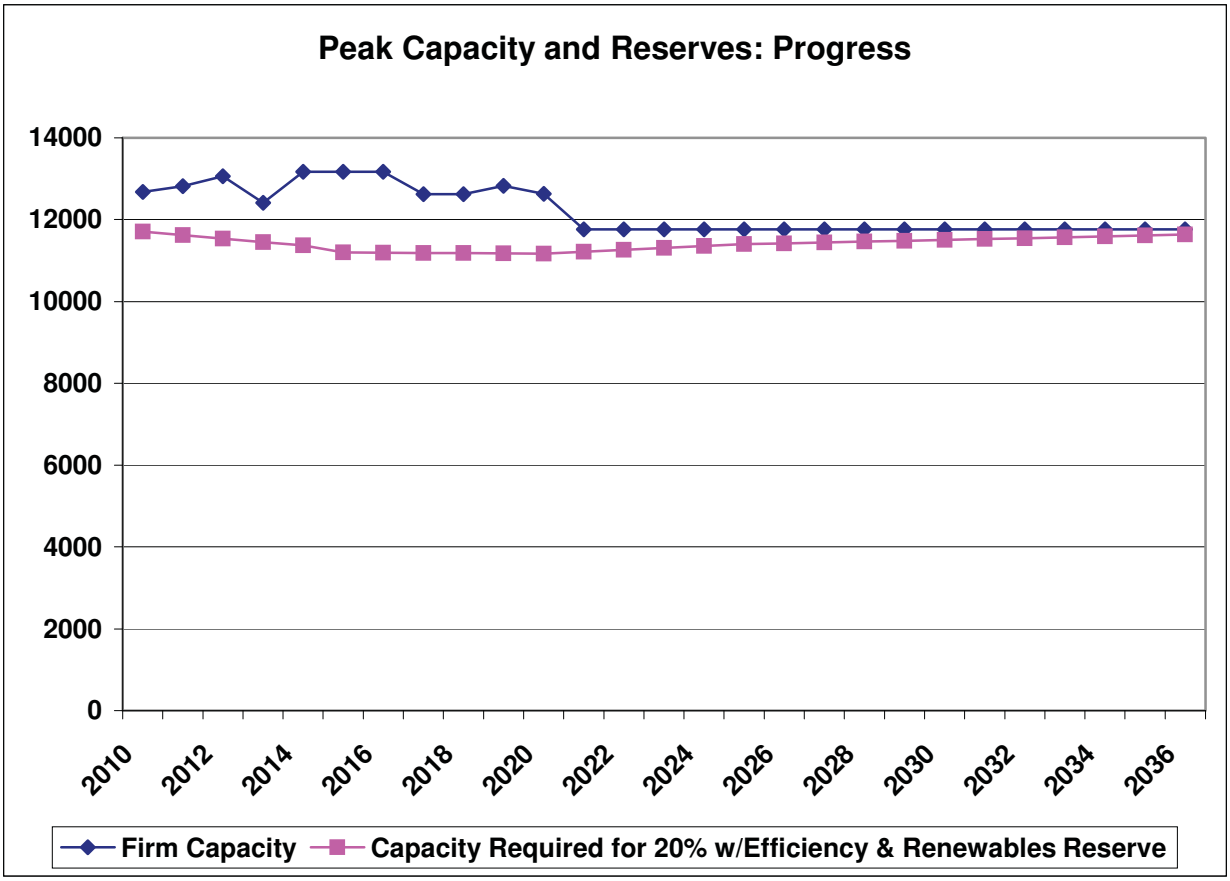
DECLINING PEAK LOAD AND CAPACITY NEEDS



Source: Progress Energy Florida: Levy Nuclear Project NCRC, Updated Life-Cycle Net Present Worth (CPVRR) Assessment, p. 10; efficiency and renewables based on Environmental Protection Agency, *Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009, January 29, 2010,* p. 38.

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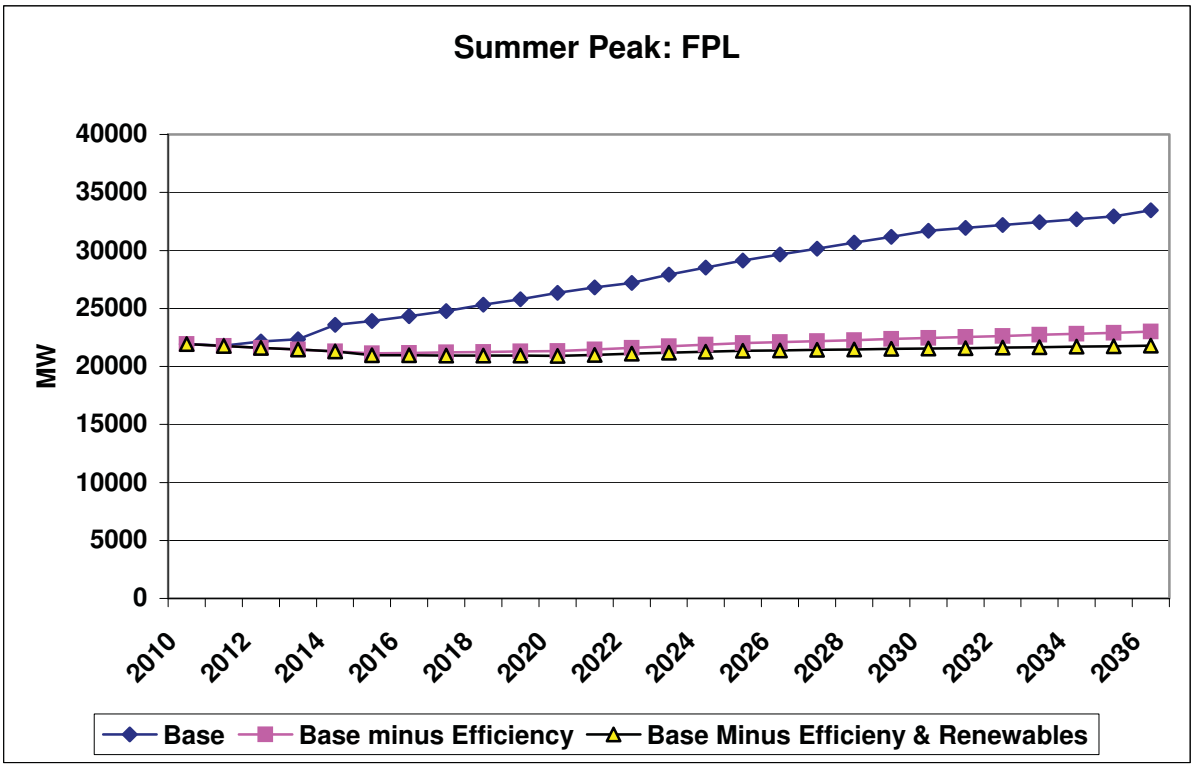
DECLINING PEAK LOAD PROJECTIONS



Source: Testimony of Steven R. Sim, Docket No. 100009-EI, SRS-4, efficiency and renewables based on Environmental Protection Agency, *Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009, January 29, 2010,* p. 38.

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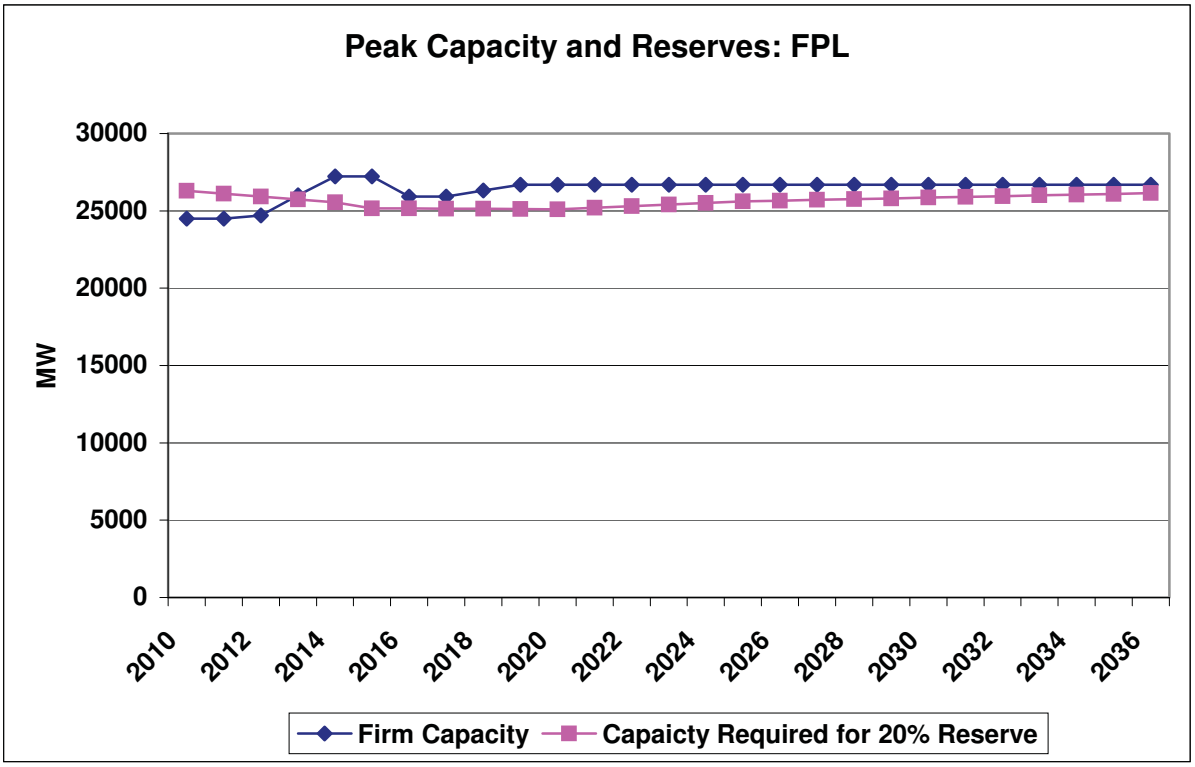
DECLINING PEAK LOAD AND CAPACITY REQUIREMENTS



Source: Testimony of Steven R. Sim, Docket No. 100009-EI, SRS-4, efficiency and renewables based on Environmental Protection Agency, *Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009, January 29, 2010,* p. 38.

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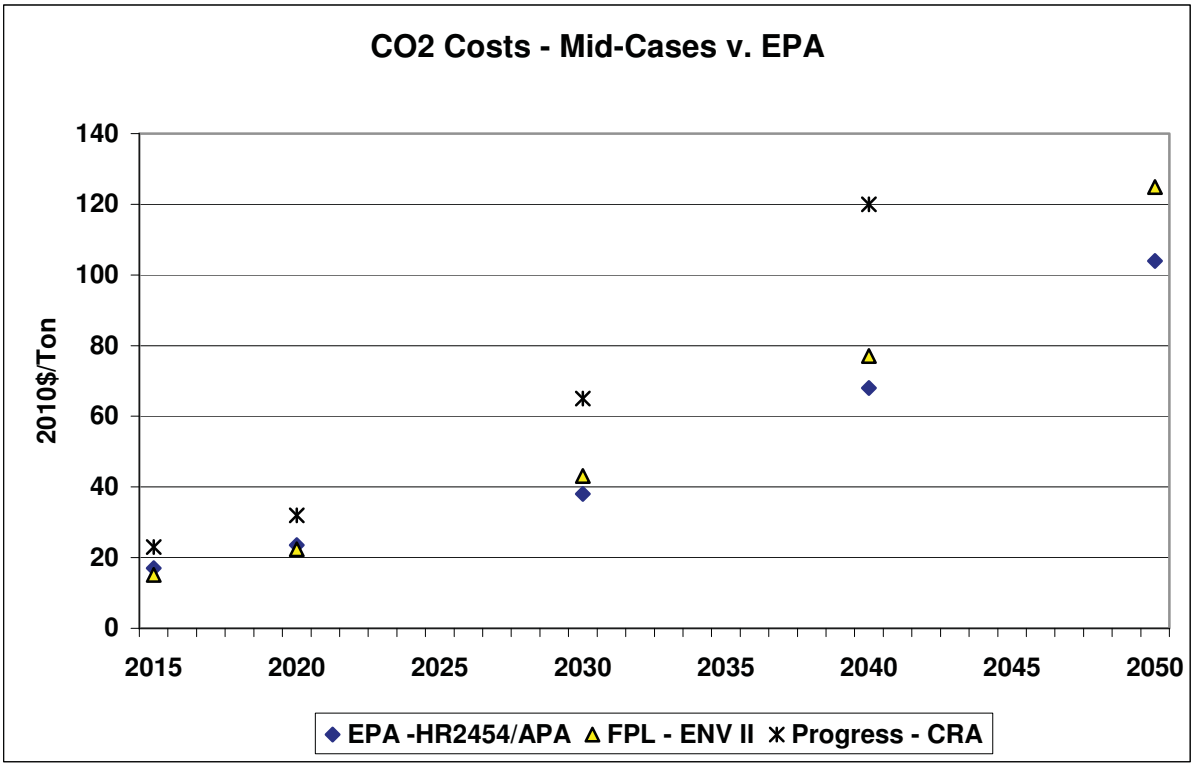
PROJECTIONS OF CARBON COMPLIANCE COSTS



Source: Progress Energy Florida: Levy Nuclear Project NCRC, Updated Life-Cycle Net Present Worth (CPVRR) Assessment, p. 2;Testimony of Steven R. Sim, Docket No. 100009-EI, SRS-3, efficiency and renewables based on Environmental Protection Agency, *Supplemental EPA Analysis of the American Clean Energy and Security Act of 2009, January 29, 2010,* p. 18.

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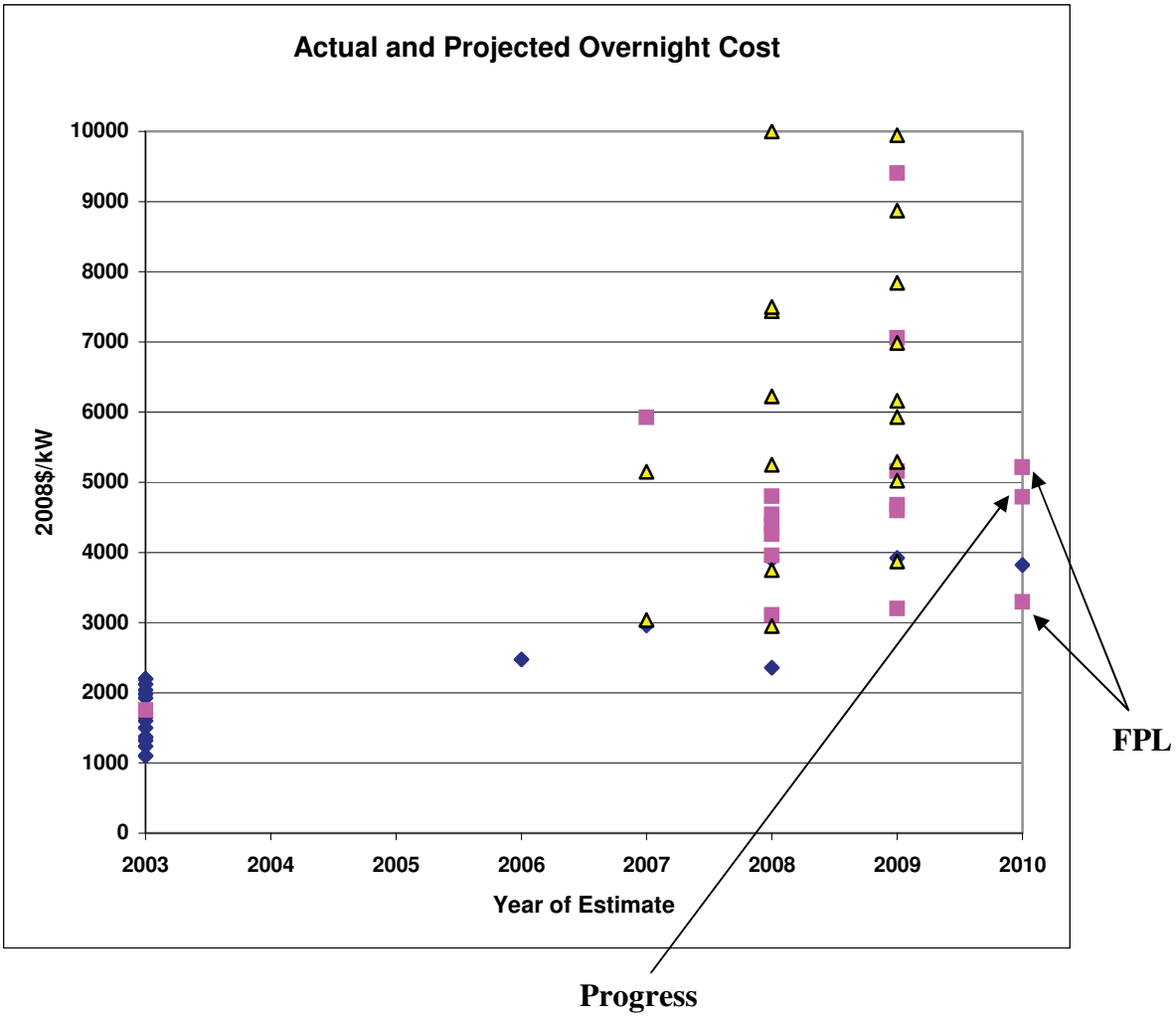
PROJECTIONS OF OVERNIGHT CONSTRUCTION COSTS



Source: Mark Cooper, <u>The Economics of Nuclear Reactors: Database, updated</u>

CEC 2008: California Energy Commission, 2008, *Comparative Costs of California Central Station Electricity Generation,*

CEC 2009: California Energy Commission, 2009, Staff Draft, *Comparative Costs of California Central Station Electricity Generation Technologies Cost of Generation Model*, August

CBO: Congressional Budget Office, 2008, *Nuclear Power's Role in Generating Electricity*, May 2008.

Constellation: http://www.foxbusiness.com/story/markets/industries/utilities/new-maryland-nuclear-reactor-depends-loan-guarantee--constellation/
http://www.nonukesyall.org/pdfs/taxpayers_for_common_sense.pdf

CRS: Kaplan, Stan, 2008, *Power Plants: Characteristics and Costs,* Congressional Research Service, November 13, 2008.

Energy Information Administration, 2009, "Electricity Market Module," *Annual Energy Outlook,* various years

Harding 2008: Harding, Jim, 2008, "Climate Change and Nuclear Power," California Science Center Debate, February

Harding 2009: Harding, Jim, 2009, Economics of Nuclear Reactors and Alternatives, February 2009.

Johnson, Clarance, *Cost of Current and Planned Nuclear Power Plants in Texas: A Consumer Perspective,* CJE Consulting, N.D.

Keystone Center, 2007, *Nuclear Power Joint Fact-Finding*, June 2007.

Lazard, 2008, *Levelized Cost of Energy Analysis—Version 2.0*, June 2008, p. 10

Lazard, 2009, *Levelized Cost of Energy Analysis – Version 3.0,* February

MIT, 2003 *The Future of Nuclear Power*, 2003.

MIT, 2009, Deutsch, John, M. et al., 2009, *Update of the MIT 2003 Future of Nuclear Power*, MIT Energy Initiative, 2009.

Moody's, 2008, New Nuclear Generating Capacity: Potential Credit Implications for U.S. Investor Owned Utilities, May 2008.

Severance, Craig A. 2009, *Business Risks and Costs of New Nuclear Power*, January 2, 2009.

Standard and Poor's, 2008, *The Race for the Green: How Renewable Portfolio Standards Could Affect U.S. Utility Credit Quality,* March 10, 2008,

University of Chicago, 2004, *The Economic Future of Nuclear Power: A Study Conducted* at the University of Chicago, August 2004

Westinghouse/BNFL, 2003, *The AP1000 Reactor Nuclear Renaissance Option* (Tulane Engineering Forum, September 26), presentation by Senior Vice President and Chief Technology Officer, Dr. Regis A. Matzie

Progress Energy Florida: Levy Nuclear Project NCRC, Updated Life-Cycle Net Present Worth (CPVRR) Assessment, p. 3

Testimony of Steven R. Sim, Docket No. 100009-EI, SRS-5

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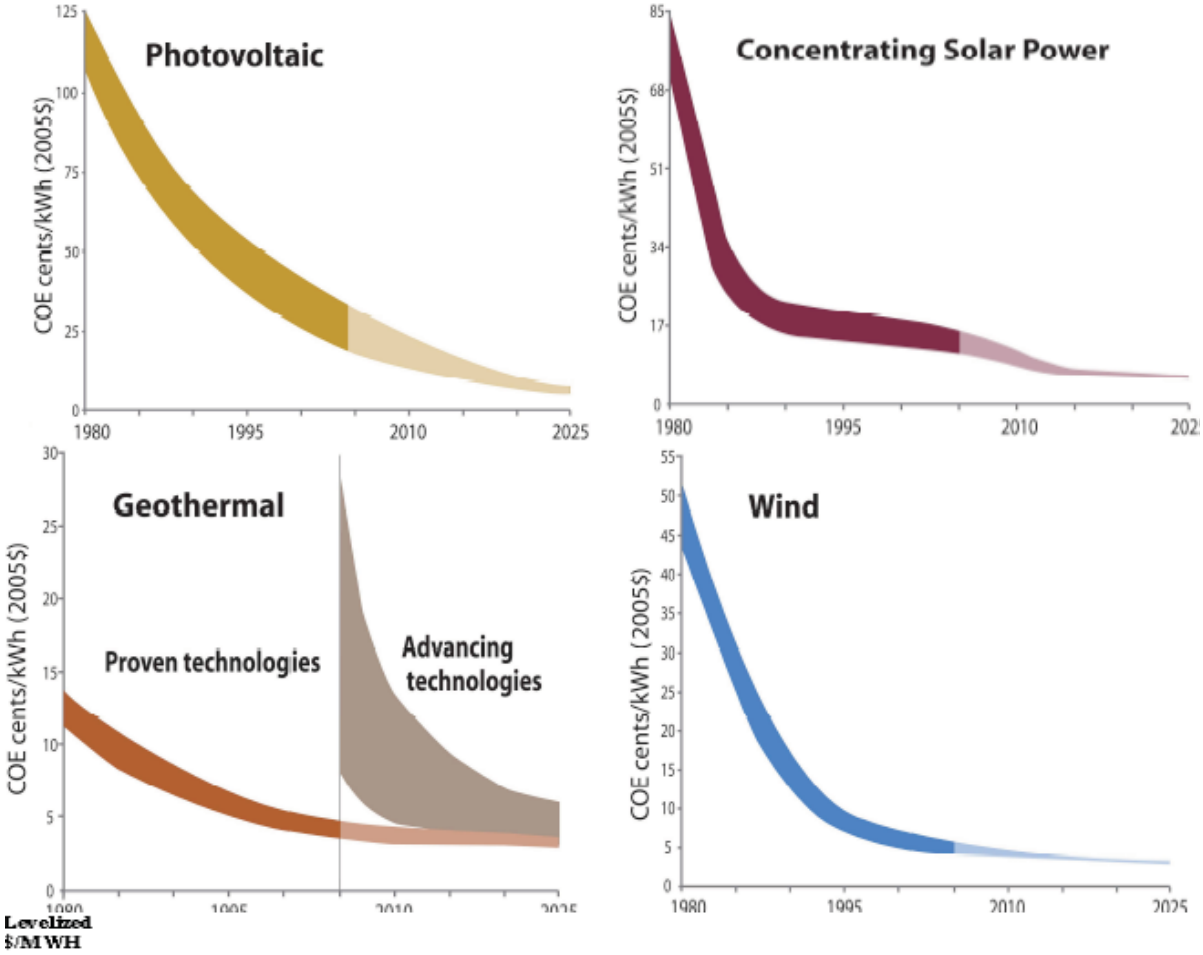
DECLINING COST OF RENEWABLES



Source: National Renewable Energy Laboratory, *Renewable Energy Cost Curves,* 2005; Lazard, 2008, *Levelized Cost of Energy Analysis—Version 2.0*, June 2008.`

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Exhibit MNC-15
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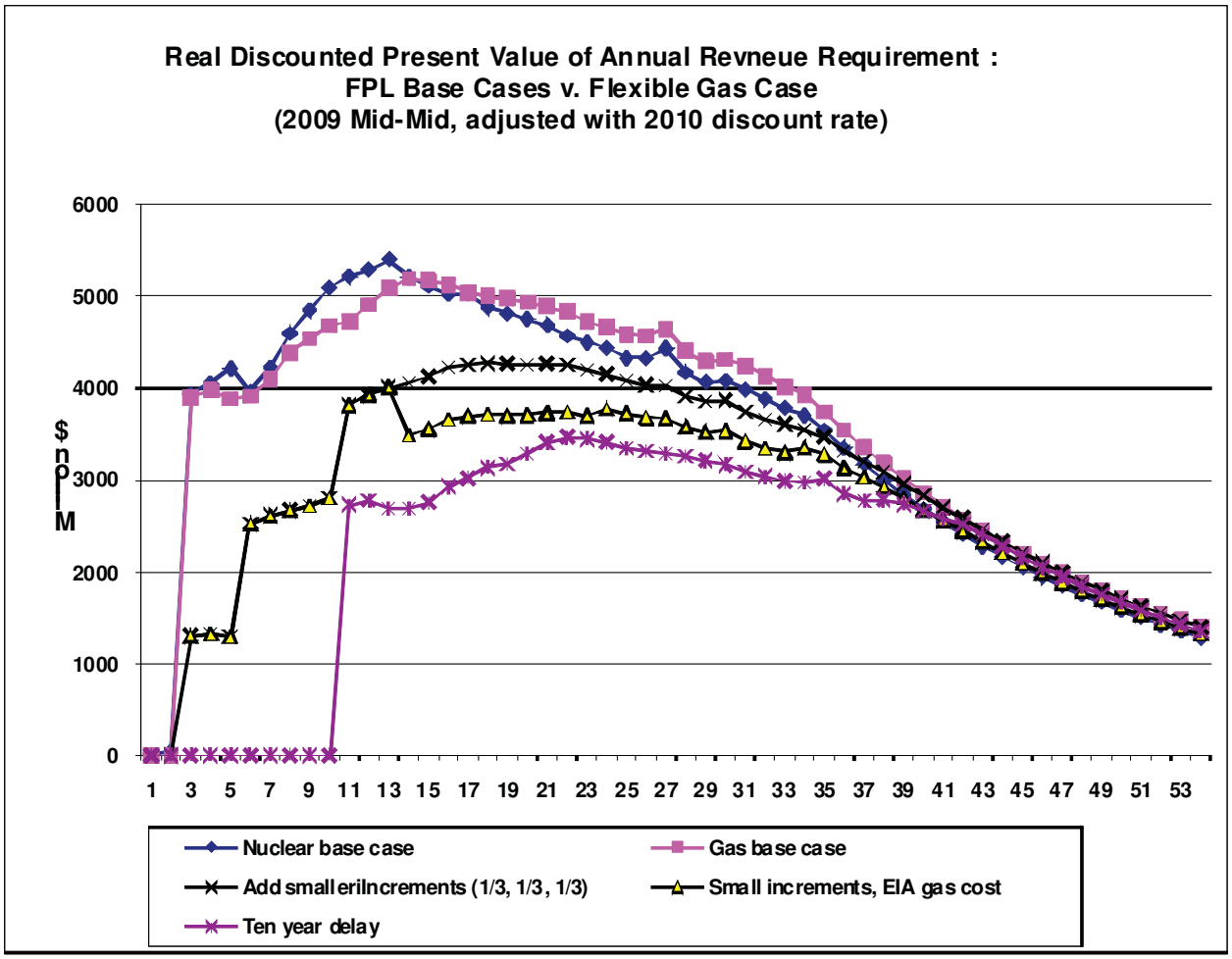
FLEXIBLE GAS ADDITIONS LOWER REVENUE REQUIREMENTS



Source: Florida Power & Light, ***Response to Staff's Second Set of Interrogatories, Interrogatory No. 64, p. 7.***

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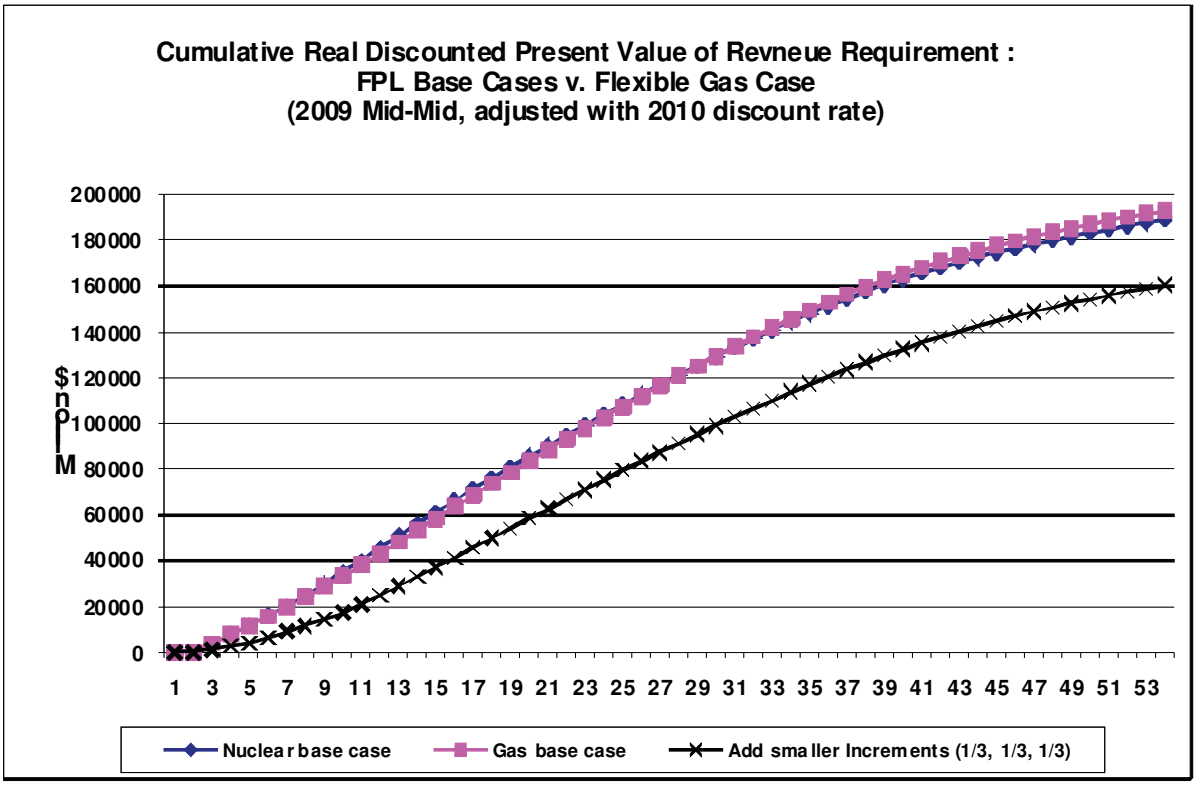
CUMULATIVE COST DIFFERENCE: FLEXIBLE V. LUMPY TREATMENT OF NATURAL GAS GENERATION ADDITIONS



Source: Florida Power & Light, ***Response to Staff's Second Set of Interrogatories, Interrogatory No. 64, p. 7***

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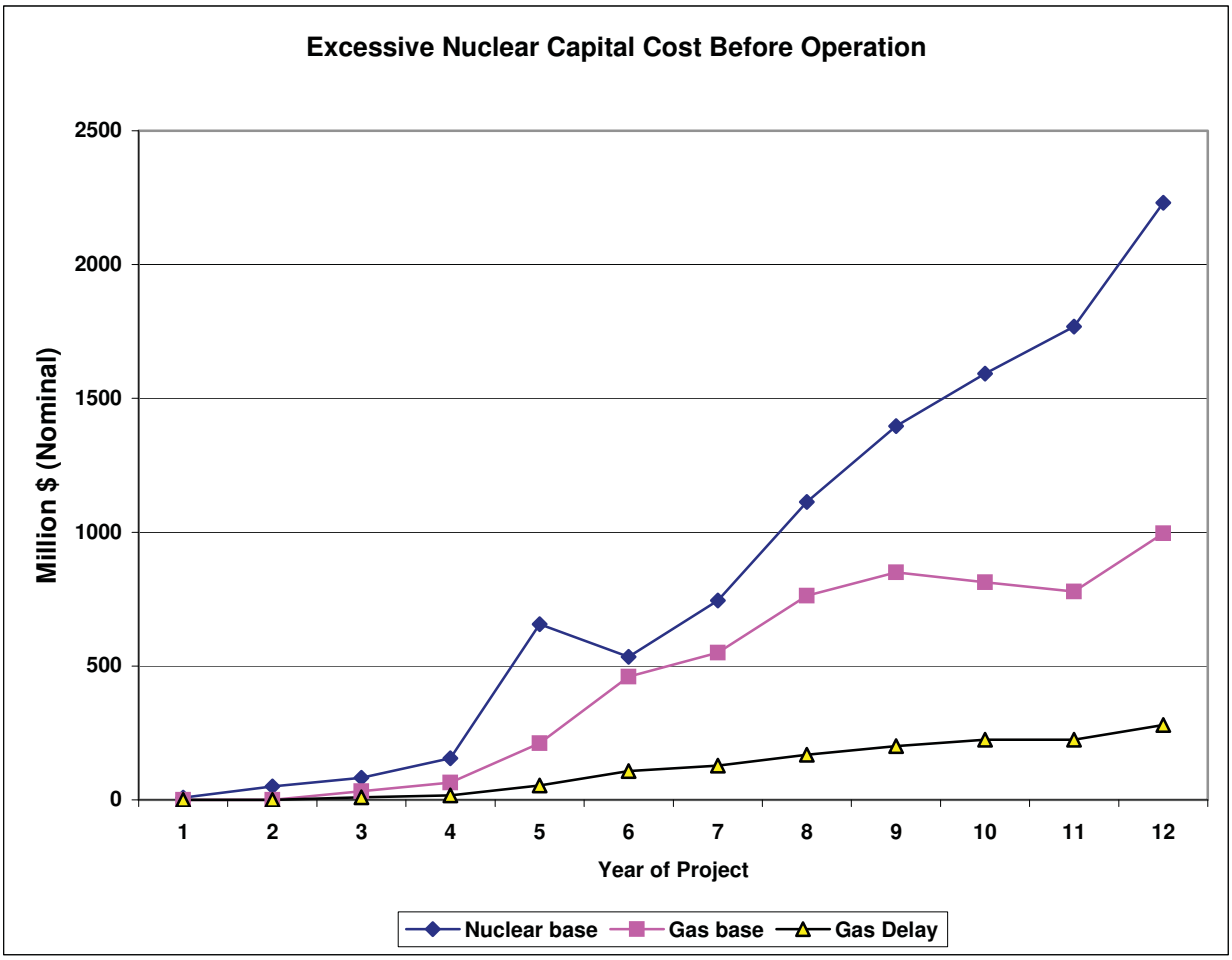
NUCLEAR CONSTRUCTION PRESSURES CAPITAL REQUIREMENTS



Source: Florida Power & Light, ***Response to Staff's Second Set of Interrogatories, Interrogatory No. 64, p. 7***

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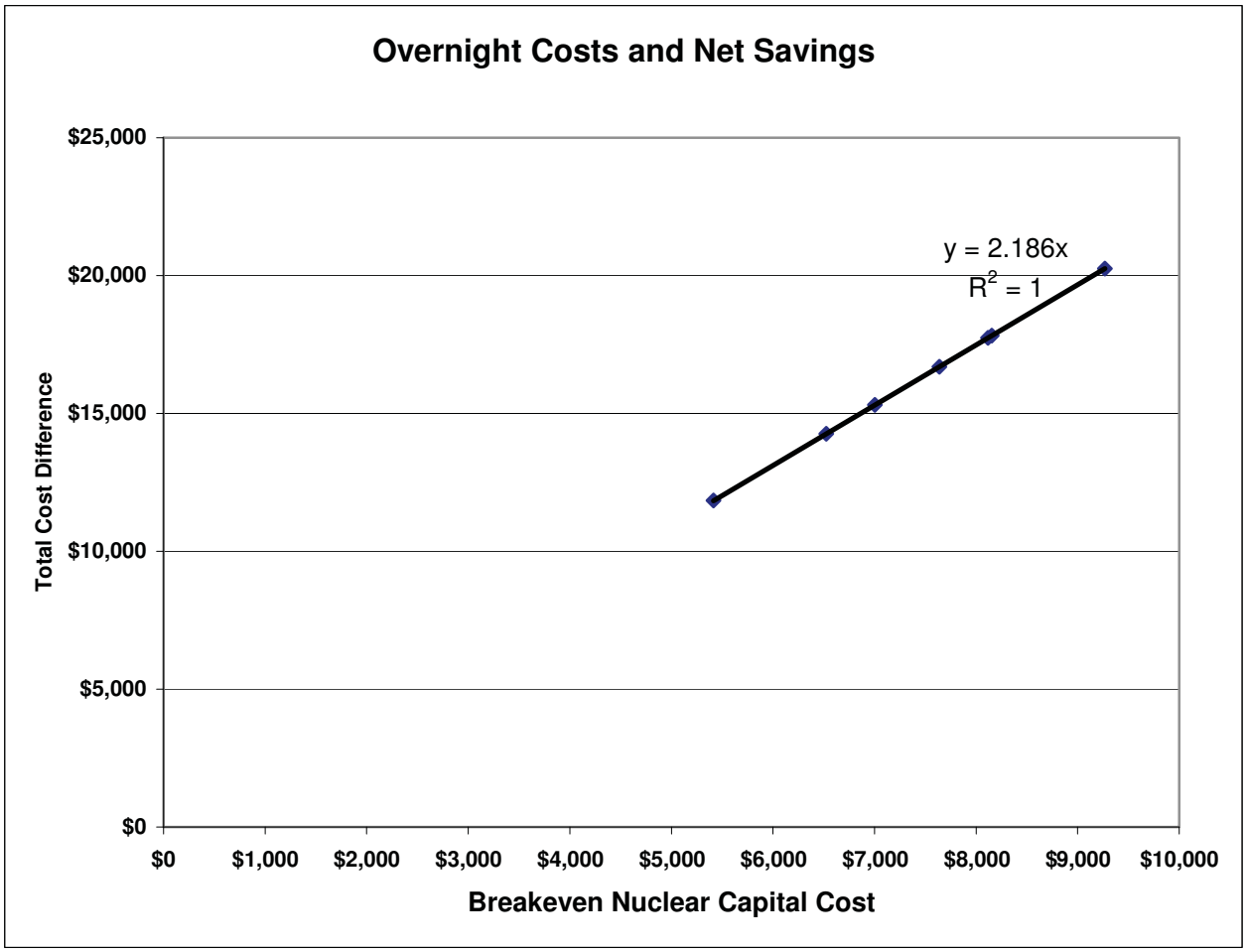
OVERNIGHT COSTS AS A RPPREDICTOR OF NET SAVINGS: FPL



Source: Testimony of Steven R. Sim, Docket No. 100009-EI, SRS-10.

EXHIBIT 30

THE RISK OF NUCLEAR REACTORS IN THE EYES OF INDSUTRY ANALYSTS

EXCERPTED FROM

ALL RISK, NO REWARD FOR TAXPAYERS AND RATEPAYERS

THE ECONOMICS OF SUBSIDIZING THE 'NUCLEAR RENAISSANCE' WITH LOAN GUARANTEES AND CONSTRUCTION WORK IN PROGRESS

Mark Cooper
Senior Fellow for Economic Analysis
Institute for Energy and the Environment
Vermont Law School

November 2009

III. THE RISK OF NUCLEAR REACTORS IN THE EYES OF INDUSTRY ANALYSTS

The following discussion demonstrates the basis of the framework for risk analysis laid out in the previous section by reviewing recent analyses of the challenge of constructing new nuclear reactors conducted by Wall Street firms[15] and industry consultants.[16]

A. MOODY'S

Moody's has issued two special comments on new nuclear generating capacity that underscore the challenges that these huge projects face. In the initial comment in May 2008, after discussing the many challenges to building nuclear reactors, Moody's expressed the hope that utilities contemplating building reactors would take steps to prepare their balance sheets for the impact of these large projects.

> Given these long-term risks, a utility's approach to its overall corporate finance policies becomes a critical factor in the overall credit profile assessment during the construction period. In general, Moody's incorporates a view that a utility company would prepare for the higher risk profile associated with construction by maintaining, or strengthening further, its strong balance sheet as well as maintaining robust levels of available liquidity capacity. This is a critical assumption since our preliminary analysis leads us to conclude that financial credit metrics will deteriorate meaningfully without the introduction of significant mitigating factors and/or other structural provisions.[17]

A year later, in June 2009, Moody's took a much dimmer view of the prospects for building nuclear reactors. While Moody's identifies the developments in the project and regulatory areas that are positives for nuclear reactor construction, it still concludes that the

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[15] Moody's *Nuclear Generating Capacity: Potential Credit Implications for U.S. Investor Owned Utilities,* May 2008; Moody's June 2009; Dimitri Mikas, "Financing New Nuclear Construction & Implications for Credit Quality," *Is there a Nuclear Renaissance,* p. 20; Standard & Poor's, May 28, 2009; Standard & Poor's, *Utilities Make Some Progress on New Nuclear Power, But Hurdles Still Linger,* March 9, 2009; Standard & Poor's*, For New U.S. Nuclear Power Plants, Liquidity Requirement Could be Substantial,* October 21, 2008; Standard & Poor's*, As Nuclear Power Renaissance Gains a Foothold in U.S., A Host of Details Needs Sorting Out,* March 7, 2008.

[16] Stephen Maloney, *Financial Issues Confronting Nuclear Construction,* Carnegie Endowment for International Peace, November 13, 2008; Stephen Maloney, *Nuclear Power Economics and Risk*, Council on Foreign Relations, July 10, 2009; Edward Kee, *First Wave or Second Wave? It is time for US nuclear power plant projects with a first wave build strategy to consider moving to the second wave,* NERA, July 24, 2009.

[17] Moody's, May 2008, p. 3.

negatives are a great concern and declares that it "is considering taking a more negative view for those issuers seeking to build new nuclear power plants"[18] because "we view nuclear

generation plans as a "bet the farm" endeavor for most companies, due to the size of the investment and length of time needed to build a nuclear power facility."[19] The change in attitude stemmed in part from deteriorating financial market conditions and the failure of the utilities contemplating building reactors to strengthen their financial positions.

> Credit conditions are yet another question. Few, if any of the issuers aspiring to build new nuclear power have meaningfully strengthened their balance sheets, and for several companies, key financial credit ratios have actually declined. Moreover, recent broad market turmoil calls into question whether new liquidity is even available to support such capital-intensive projects.[20]

In both documents, Moody's identifies the cause and implications of these risks. The May 2008 document identified several sources of risk. The financial risks of the project are sharply increased by the execution risk, which is compounded by technology, marketplace and regulatory risks.

> The complexity and long-term construction horizon associated with building new nuclear plant expose a utility to "material adverse change" conditions related to political, regulatory, economic and commodity price environments, as well as technology developments associated with supply and demand alternatives. These long-term risks expose a utility to back-end regulatory disallowance risk or other potential market intervention or restructuring initiatives by elected officials.[21]

The June 2009 Moody's document reiterated these concerns.[22] The inherent nature of these projects continues to be a challenge and creates marketplace and technological risk.

Notwithstanding the fact that public policy has created favorable conditions for reactor construction in some aspects of regulation, there are other aspects that pose continued risk in

[18] Moody's, June 2009, p. 1.
[19] Moody's, June 2009, p. 4.
[20] Moody's June 2009, p. 2.
[21] Moody's May 2008, p. 5.
[22] Moody's June 2009, p. 5.

both execution risk and regulatory risk.[23] Policy risk has increased due to the orientation of climate change policy toward promoting alternatives.

> Less clear today is the effect that energy efficiency programs and national renewable standards might have on the demand for new nuclear generation. National energy policy has also begun eyeing lower carbon emissions as a key desire for energy production—theoretically a huge benefit for new nuclear generation—but the price tags associated with these development efforts are daunting, especially in light of today's economic turmoil. It isn't clear what effect such shifts, or changes in technology, will have for new nuclear power facilities.[24]

Moody's continues to see execution risk in these projects and points to the history of the financial difficulties that utilities building reactors had in the 1970s and 1980s as instructive for evaluating current projects.

> Moody's is considering applying a more negative view for issuers that are actively pursuing new nuclear generation. History gives us reason to be concerned about possible significant balance-sheet challenges, the lack of tangible efforts today to defend the existing ratings, and the substantial execution risk involved in building new nuclear power facilities.[25]

One of the sources of this concern about the execution risk is the failure of those proposing to build new reactors to provide the detailed information that would be associated with a well-thought out investment of this size.

> We remain concerned over the absence of details regarding key elements associated with the decision process to proceed with a project of this scale.

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[23] Moody's June 2009, p. 7.
The sheer size, cost and complexity of new nuclear construction projects will increase a utility's or power company's business and operating risk profile, leading to downward rating pressure. The length of a nuclear construction effort also entails lengthy regulatory reviews and potential delays in recovering investments, changing market conditions, shifting political and policy agendas, and technological developments on both the supply and demand side.

[24] Moody's June 2009, p. 2.
While a constructive regulatory relationship will help mitigate near-term credit pressures, we will remain on guard for potential construction delays and cost overruns that could lead to future rate shock and/or disallowances of cost recovery. Given the lengthy construction time needed for nuclear projects, there is no guarantee that tomorrow's regulatory, political, or fuel environments will be as supportive to nuclear power as today's.

[25] Moody's June 2009, p. 2.

> Information is needed regarding the all-in construction costs and break-down of those costs; the construction timeline and schedule; the Engineering, Procurement and Construction (EPC) contractual arrangements and the allocation of fixed versus variable costs within those arrangements; the financing structure, expected sources of financing and pro-forma capitalization; and, the ultimate impact on consumer rates.[26]

The result of these market, regulatory and technological uncertainties and risks is to create financial pressure on projects, pressures that are reflected by project specific concerns and the general turmoil in the credit markets.

> Given these long-term risks, a company's financial policy becomes especially critical to its overall credit profile during construction. In general, we believe a company should prepare for the higher risk associated with construction by maintaining, if not strengthening, its balance sheet, and by maintaining robust levels of available liquidity capacity.[27]

B. STANDARD & POOR'S

Moody's is not the only credit rating agency to recognize the challenges facing nuclear reactors. Even at a promotional conference, a Standard & Poor's executive noted that "challenges for the industry participants abound."[28] While recognizing that there are positive aspects of the current environment, as Moody's did, Standard & Poor's identifies more aspects of the current situation that are negative. Interestingly, even with a loan guarantee, Standard & Poor's sees significant financial issues as described in Figure III-1.

[26] Moody's May 2008, p. 2.
[27] Moody's June 2009, p. 5.
[28] Dimitri Mikas, "Financing New Nuclear Construction & Implications for Credit Quality," *Is there a Nuclear Renaissance,* p. 20, Standard & Poor's, May 28, 2009.

Figure III-1: Standard & Poor's Credit Profile Considerations

Business risk profile	
New Technology Risk	⇧
Construction Risk	⇧
How much risk is mitigated by EPC contract?	⇧⇩
Nuclear operating exposure will increase	⇧
Regulatory framework for recovery of investment	⇧
Financial risk Profile	
Debt imputation: 25% for projects vs. 50% for regulated utilities	⇧
Even with DOE guarantee, debt loads can increase significantly	⇧
80/20 vs. 60/40 capital structure	⇧
Despite DOE guarantee, debt service will be fully accounted for	⇧
Ability to recover cash return on work in progress	⇩

Source: Dimitri Mikas, "Financing New Nuclear Construction & Implications for Credit Quality," *Is there a Nuclear Renaissance,* p. 20, Standard & Poor's, May 28, 2009. Arrows point in the direction of the impact on risk.

Standard & Poor's remains more positive on nuclear reactors than Moody's, although it is quite clear that the subsidies from taxpayers and ratepayers are the key to the financing of these projects. In a March 2009 analysis entitled *Utilities Make Some Progress on New Nuclear Power, But Hurdles Still Linger,* the table of contents tells the story:

Support for New Construction Varies from State to State

The Licensing Process and Framework Remain Untested

The DOE's Loan Guarantees Figure in Several Financing Approaches

For Credit Risk, Balance-Sheet Size is Important

Recession and Falling Energy Prices Can Alter Perspectives

The Need for Construction Contracts that Can Help Limit Exposure[29]

This list includes two positive factors, which relate to the taxpayer (Department of Energy loan guarantees) and ratepayer (construction work in progress) funding of the reactors. Four of the six factors listed are sources of concern: regulatory risk (uncertain licensing), financial risk (credit and balance sheet), marketplace risk (recession and energy prices) and execution risk (construction contracts).

Standard & Poor's points out that the approach taken to support projects in the southeastern U.S. goes well beyond turning ratepayers into investors; it takes all of the risk off of the utilities by

- Allowing utilities to receive pre-approval for construction costs and schedules;
- Providing for periodic review to ensure compliance with schedules and budgets;
- Allowing for recovery of a cash return on "construction work in progress" costs for both equity and debt components;
- Preventing future regulatory commissions from reviewing the prudence of previously approved capital spending; and
- Allowing for recovery of abandoned investment and providing for inclusion of the completed plant in the "rate base" (the value of property on which a utility can earn a regulatory-specified rate of return) without a major rate case filing with the regulator.[30]

Ironically, the efforts of the Department of Energy (DOE) to impose conditions on guaranteed loans that would help to mitigate the risk to the Treasury and protect the taxpayer in the event of defaults on the loan – i.e. a first lien for the Treasury and cross collateralization – are seen as creating "complications" and "challenges" for the financing of nuclear projects. That these conditions were imposed by the Bush administration, which had been very supportive of and helped to invent the term "nuclear renaissance," and the fact that the nuclear industry has lobbied hard to eliminate them underscore the risk that the loan guarantee program poses to taxpayers.

From a purely technical perspective, the loan guarantee program would work naturally with a transaction that is project-financed in the traditional sense. In

[29] Standard & Poor's, Hurdles Remain, p. 1.
[30] Standard & Poor's, Hurdles Remain, pp. 2-3.

> such a case, if the project falters, the sponsor can walk away and lose its equity, while the DOE takes control of the project assets and makes the lenders whole. Because of the DOE's requirement to have a priority lien over the project assets, regulated electric utilities applying under the program that lack a first mortgage bond indenture can facilitate a loan guarantee request, while the existence of a first mortgage bond indenture can introduce complications. Therefore, regulated utilities with first mortgage bond indentures will likely have to implement funding structures that satisfy the DOE's need while at the same time preserving compliance with their mortgage indentures.
>
> Another challenge that has come up for companies pursuing new construction through a partnership arrangement under the DOE's program deals with the issue of how the department requires all participants to cross-collateralize each other's obligations. This essentially creates a situation where the project participants are jointly and severally liable. This arrangement differs from past projects that incorporated an undivided interest approach in which each participant was responsible only for its own portion of the project.[31]

The large size of the reactors figures into the loan guarantees. Utilities are attempting to find approaches that can fit into the loan guarantee program that let them share the reactors.

> The traditional framework in which regulated utilities use on-balance-sheet financing to build generation plants while merchant generation companies use a project finance approach still holds largely true. However, companies are experimenting with various structures, including partnerships, and they are trying to take advantage of the DOE's loan guarantee program, whether they are regulated or merchant. Partnerships can be very appealing because they not only moderate or spread the construction and financing risk, but they can also help tailor an investment's size to a company's projected load in the time frame in which the plant will enter commercial operation. The loan guarantee program appeals to all participants – whether regulated or merchant, public or investor owned – because it can lower borrowing costs.[32]

These highly technical financial discussions can be boiled down to a simple proposition. With the guaranteed loans equal to as much as 80 percent of the value of very risky projects, the DOE imposes two conditions on the loans that help to protect the

[31] Standard & Poor's, Hurdles Remain, pp. 4-5.
[32] Standard & Poor's, Hurdles Remain, p. 3.

taxpayer's investment should the project falter. The DOE holds the first lien and all of the partners are liable for the entire project. Private sector lenders also want the first lien, which creates a conflict. The nuclear industry is pressing hard to eliminate these taxpayer protections.

The problem that the large size of these projects poses to their financing is a major component of the Standard & Poor's analysis.

> Given the new plant's large projected cost, how big the companies' balance sheets are can be a significant factor in terms of how much credit risk we recognize. A new project that materially affects a company's size can introduce significantly more risk and necessitate that every other aspect of the company's business perform flawlessly to provide the necessary support to its credit profile, especially during the period when capital spending peaks and the financial profile becomes stressed. For a company whose nuclear project investment is small compared with its balance sheet, these same concerns apply but, in our view, are moderated to some extent. Balance-sheet size is also an important consideration in adjusting rates during the construction period (assuming regulators allow the company to get a cash return on its construction work in progress during construction), as well as in the final rate adjustment necessary to include the plant in rate base.
>
> Finally, balance–sheet size relative to the size of the investment in the nuclear project can become an important factor if the company needs to abandon the project. While many regulated jurisdictions provide for recovery of the prudently incurred investment, the time for recovery of the investment remains fairly open. Thus for a company with a small asset base, recovering its abandoned investment in a nuclear plant over a long period of time can adversely affects it financial risk profile.[33]

The Standard & Poor's analyst pointed out that "even with DOE guarantee debt loads can increase significantly."[34] The Standard and Poor's analysis provided estimates of the balance-sheet impact for three companies, showing that the nuclear project equaled 28 percent of total assets for Georgia Power, 76 percent for South Carolina Gas and Electric and 146 percent of Progress Energy.[35] Interestingly, Moody's has downgraded South Carolina Electric and Gas and issued negative advice on the Southern Company, the parent of Georgia Power.[36]

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[33] Standard & Poor's, Hurdles Remain, p. 4.
[34] Mikas, *Financing*, p. 20.
[35] Standard & Poor's, Hurdles Remain, p. 5.
[36] Moody's, *Changes Outlook of Southern and Three Subs to Negative*, September 1, 2009.

C. CONSULTING FIRMS

A November 2008 presentation by an analyst at Towers Perrin provided an early warning about the risk of nuclear reactor projects in the emerging economic environment.[37] An updated version of that analysis from July 2009 reinforces the initial observations.[38] The two areas where the analyst was well ahead of the curve in raising concerns were in the recognition of marketplace and financial risk.

The slowing of load growth and the decline of the cost of alternatives, particularly natural gas, were identified as undermining the case for nuclear reactor projects. The decline in demand reduces the need for new reactors. "With falling demand for power, current market conditions generally provide no compelling need or reason for many utilities to immediately take on any more risk than they already face…. The recession is showing no signs of the Government-promised abatement or any response to "stimulus" – demand is low."[39] Weakened balance sheets resulting from declining sales reduce the ability of the utilities to undertake large projects. "In fact, utilities have very significant balance sheet and liquidity challenges in this market with no immediate or obvious resolution…. Therefore, many utilities have no basis [at this time] to count on organic growth to strengthen cash flows, balance sheets, or [offset] pension losses."[40]

The analysis identifies two forms of regulatory risk – uncertainty about project approval by an inexperienced, understaffed Nuclear Regulatory Commission and uncertainties about the allowance of cost recovery by state regulators. Specifically, the untested Combined Construction and Operation License process does not address issues not submitted for review, nor does it preclude subsequent ratchets arising from rulemakings. The gap from the former leaves open restatement of standards applied to such things as field engineering, which typically represent more than half of the overrun potential in any project.

Even with set regulatory requirements, projects face a host of execution risk problems, including the lack of current utility experience constructing reactors, the ability of management to oversee these projects, and the likelihood of the need to rework projects. Particularly notable here is the concern about the vendors and contracts to which many turn to look for help to reduce risk exposure.

The Towers Perrin analysis devotes the greatest attention to the worsening financial conditions, both in the broader financial market in general and for the utility sector in

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[37] Stephen Maloney, *Financial Issues Confronting Nuclear Construction,* Carnegie Endowment for International Peace, November 13, 2008.
[38] Stephen Maloney, *Nuclear Power Economics and Risk*, Council on Foreign Relations, July 10, 2009.
[39] Maloney, *Economics and Risk*, 2009, pp. 4-5.
[40] Maloney, *Economics and Risk*, 2009, pp. 4-5.

particular. Tightening credit and high-risk premiums, as well as federal credit policies are seen as raising the cost of long-term capital. At the same time, market dynamics lower the market capitalization of utilities, limiting their ability to invest. The balance sheets of utilities are weak and becoming weaker, a trend that caused Moody's to change its view in 2009. The analysis offers "some energy sector planning thumb rules":

- Always hedge your risk within your risk capital limits.
- Don't invest in projects claiming more than 10% of your assets.
- Risky issues call for higher returns… indicated returns for nuclear projects should be ~ 18-25% or more.[41]
- Uncertainty (i.e., risk) in initial estimates will grow over the course of a project at rates proportional to the square root of time.
- Since DCF [discounted cash flow] systematically underestimates compound risk and new construction faces significant irreversibilities, never base a risky or uncertain project's success solely on the NPV [net present value] or a DCF calculation.[42]

The analysis focuses on the situation in which construction work in progress is not available and concludes that the long construction period creates a heavy burden on the financial risk profile of the utility. Finally, the analysis expressed concern about federal loan guarantees. It argues that the federal government is not a reliable counterparty and that credit conditions should raise concern about its ability to perform as counterparty.

> Federal loan "guarantees" are risky. Remember: the Federal Government is not a reliable business partner. It is a serial breacher of agreements and its policies systematically fail to perform to forecast while always costing more than promised.
>
> If a utility proceeds with the Federal Government as a guarantor, it would be prudent and responsible to apply risk management protocols normally reserved for high-risk counterparties.[43]
>
> Bottom line: Federal Government has proven itself an unreliable counterparty:
>
> - Policies systematically fail to fulfill promises or hit their forecasts,
> - A serial breacher of agreements,
> -

[41] Maloney*, Economics and Risk*, 2009, p. 10.
[42] Maloney, *Economics and Risk*, 2009, pp. 10-11, 12, 24.
[43] Maloney, Economics and Risk, pp. 5, 23.

- Paper thin Balance Sheets: Federal Government and FRB [Federal Reserve Board] both fail to meet IMF standards,
- Bond auctions show diminishing enthusiasm for more UST [U.S. Treasury] paper,
- Growing international sentiment to diversify off USD [U.S. Dollar] as reserve currency,
- Market concerns over UST "credit card balance."[44]

The weight of these risks and uncertainties led a Vice President of NERA Economic Consulting, a leading utility consulting firm, to recommend that utilities consider pushing off the decision to build nuclear reactors because

> a first-wave project may face higher risks and costs, including scarce nuclear industry resources; uncertainties about carbon control and electricity demand; organized anti-nuclear efforts; some degree of first-of-a-kind (FOAK) risks and higher costs; and difficult markets for nuclear financing and funding.[45]

Appendix B summarizes the reasons given in the NERA analysis, organized according to the framework used in this analysis. Those concerns parallel the discussion in this section.

[44] Maloney, Economics and Risk, p. 5… 23.
[45] Kee, p. 2.

APPENDIX B:

NERA Reasons to Consider Waiting to Construction Until the Second Wave of Reactors

Technology Risk:

A second-wave project that can avoid commitment to a reactor design (or that can switch reactor designs without large costs) should be able to choose from several standard reactor designs that will have been approved by 2014. As these approved reactor designs start construction, the degree of detailed engineering will be much higher than today and the approach to construction (i.e., modular construction) will be better known. Second-wave projects may also be able to learn from the outcomes of first-wave EPC contracts.

While the timing remains uncertain, there is a possibility that one or more alternate reactor designs (e.g., micro-reactors and Generation IV reactors) now in the research and development phase will be commercially available as an option for a second-wave project.

A first-wave project may face higher risks and costs, including scarce nuclear industry resources… some degree of first-of-a-kind (FOAK) risks and higher costs.

Policy Risk:

It is possible that the US approach to control carbon emissions will be in place by 2014, allowing a second-wave project sponsor to better understand the financial implications for new nuclear power plants.

New nuclear plants may benefit from programs or taxes that are targeted at controlling carbon emissions. A year ago, there was hope that a change of administration would result in quick and clear action on controlling carbon. This has not happened and any real action on carbon control may be delayed or watered down or both as a result of the economic recession.

DOE loan guarantees are a critical item, so the current limits suggest that only 2 or 3 plants will be built in the first wave. DOE Loan guarantees for nuclear remain limited to $18.5 billion... Given the high cost estimates for new nuclear power plants, this will only cover a few nuclear units. Also, the terms, conditions, and costs of the DOE nuclear loan guarantees may not be attractive. DOE is reported to be negotiating with a short list of loan guarantee hopefuls; projects not in this short list may not have much chance of a loan guarantee.

Regulation Risk:

To the extent that a second-wave project has delayed the NRC COL process (i.e., the project has the ability to modify the COL application or other details), the lessons from the first-wave projects should provide a clearer view of the timing, issues, and potential for legal challenges to the COL process up to the COL approval point.

One or more new US nuclear power plants may have been built, approved, and placed into commercial operation, providing a much better view of how the NRC COL ITAAC process will work.

Regulated first-wave projects will have placed nuclear plant investments into rate base (and into rates), providing some lessons and guidance for second-wave project sponsors, state regulators, and others.

Execution Risk:

New nuclear power projects outside the US may be close to completion and some may have started commercial operation, reducing uncertainty about total project cost, construction times, reactor design operating performance, modular construction approaches, market success of reactor designs and vendors, and other issues.

Second-wave project sponsors as well as investors, regulators, and others will have a clearer view of the costs of new nuclear power plants and the time required to build them. The differences in cost, time to construct, and operating performance across reactor designs and vendors will also be much clearer.

The learning during construction of the first-wave nuclear plants may allow second-wave buyers to obtain lower costs, less risk, and shorter and more certain schedules from EPC vendors. Modifications to detailed designs and construction approaches to improve quality, lower cost, and shorten time in construction may also be available.

There will be even more experience with new nuclear plants outside the US. Reactor vendors that are not now in the US market may have entered the US market based on the success of build programs outside the US, giving second-wave buyers more options.

Nuclear build experience so far is mixed. There was some hope that nuclear project development experience outside the US would resolve uncertainties to the benefit of the US projects that would follow, but this has not yet happened. The Olkiluoto EPR project has experienced significant cost overruns and delays and is now in arbitration proceedings and the Chinese have just started construction on the first AP1000 unit.

The nuclear fuel cycle, including the used fuel disposition issue and approach to re-processing used nuclear fuel, may be more settled. Several new uranium enrichment facilities may be operational in the US and uranium market prices may be more stable.

Marketplace Risk:

The impact on electricity demand and the need for new baseload generation due to the current economic recession, the building of renewable generation, and other factors will be better known.

Demand for electricity is growing at a slower rate in many parts of the US as a result of the current economic downturn, so that the projected need for baseload capacity may be less and later than the capacity need projected a year ago. For some utilities with industrial customers, this may be a significant change.

Current nuclear power plant cost estimates are high, even though these estimates are considered conservative and may mean fewer cost overruns when the projects are completed. However, the recent cost estimates are much higher than cost estimates from only a few years ago. As these higher nuclear cost estimates are incorporated into generation expansion planning models and policy analyses, new nuclear power plants may no longer be the least-cost generation expansion option.

Financial Risk:

World financial markets are tight and financing any large capital project is difficult. Financing a new nuclear power plant would have been very difficult even without the financial crisis; with this crisis, it may not be possible to finance a new nuclear project. Financial markets will recover, but this may not happen in time for a first-wave project.

Also, the construction funding arranged by first wave developers may provide lessons for developers and lenders that will mean easier access to construction funding for second-wave projects. The real response of the stock market to new nuclear plant investment decisions will be known and will allow a second-wave sponsor to better assess its own decision to invest.

First-wave projects will have arranged and closed permanent financing, providing lessons and guidance for investors, lenders, and developers.

Source: Edward Kee, First Wave or Second Wave? It is time for US nuclear power plant projects with a first wave build strategy to consider moving to the second wave, NERA, July 24, 2009, pp. 4-6.

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Fellow, Stanford Center on Internet and Society, 2000-present

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Fellow, Donald McGannon Communications Research Center, Fordham University, 2005-present

Senior Fellow for Economic Analysis, Institute for Energy and the Environment, Vermont Law School, 2009-present

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Director of Energy, Consumer Federation of America, 1984-1986

Director of Research, Consumer Energy Council of America, 1980-1983

Consultant, Office of Policy Planning and Evaluation, Food and Nutrition Service, United States Department of Agriculture, 1981-1984

Consultant, Advanced Technology, Inc., 1981

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Research Associate, American Research Center in Egypt, 1976-1977

Research Fellow, American University in Cairo, 1976

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Consultant, Division of Architectural Research, National Bureau of Standards, 1974

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Guest Lecturer, University of Maryland, 1981-82, Energy and the Consumer, American University, 1982, Energy Policy Analysis

Assistant Professor, Northeastern University, Department of Sociology, 1978-1979, Sociology of Business and Industry, Political Economy of Underdevelopment, Introductory Sociology, Contemporary Sociological Theory; College of Business Administration, 1979, Business and Society

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Teaching Assistant, Yale University, Department of Sociology, 1975-1976, Methods of Sociological Research, The Individual and Society

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Member, Advisory Committee on Appliance Efficiency Standards, U.S. Department of Energy, 1996 - 1998

Member, Energy Conservation Advisory Panel, Office of Technology Assessment, 1990-1991

Fellow, Council on Economic Regulation, 1989-1990

Member, Increased Competition in the Electric Power Industry Advisory Panel, Office of Technology Assessment, 1989

Participant, National Regulatory Conference, The Duty to Serve in a Changing Regulatory Environment, William and Mary, May 26, 1988

Member, Subcommittee on Finance, Tennessee Valley Authority Advisory Panel of the Southern States Energy Board, 1986-1987

Member, Electric Utility Generation Technology Advisory Panel, Office of Technology Assessment, 1984 - 1985

Member, Natural Gas Availability Advisor Panel, Office of Technology Assessment, 1983-1984

Participant, Workshop on Energy and the Consumer, University of Virginia, November 1983

Participant, Workshop on Unconventional Natural Gas, Office of Technology Assessment, July 1983

Participant, Seminar on Alaskan Oil Exports, Congressional Research Service, June 1983

Member, Thermal Insulation Subcommittee, National Institute of Building Sciences, 1981-1982

Round Table Discussion Leader, The Energy Situation: An Open Field For Sociological Analysis, 51st Annual Meeting of the Eastern Sociological Society, New York, March, 1981

Member, Building Energy Performance Standards Project Committee, Implementation Regulations Subcommittee, National Institute of Building Sciences, 1980-1981

Participant, Summer Study on Energy Efficient Buildings, American Council for an Energy Efficient Economy, August 1980

Member, University Committee on International Student Policy, Northeastern University, 1978-1979

Chairman, Session on Dissent and Societal Reaction, 45th Annual Meeting of the Eastern Sociological Society, April, 1975

Member, Papers Committee, 45th Annual Meeting of the Eastern Sociological Society, 1975

Student Representative, Programs, Curricula and Courses Committee, Division of Behavioral and Social Sciences, University of Maryland, 1973-1974

President, Graduate Student Organization, Department of Sociology, University of Maryland, 1973-1974

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American Sociological Association, Travel Grant, Uppsala, Sweden, 1978

Fulbright-Hayes Doctoral Research Abroad Fellowship, Egypt, 1976-1977

Council on West European Studies Fellowship, University of Grenoble, France, 1975

Yale University Fellowship, 1974-1978

Alpha Kappa Delta, Sociological Honorary Society, 1973

Phi Delta Kappa, International Honorary Society, 1973

Graduate Student Paper Award, District of Columbia Sociological Society, 1973

Science Fiction Short Story Award, University of Maryland, 1973

Maxwell D. Taylor Award for Academic Excellence, Arabic, United States Defense Language Institute, 1971

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New York State Regents Scholarship, 1963-1968

National Merit Scholarship, Honorable Mention, 1963

PUBLICATIONS:

ENERGY

Books and Chapters

"Recognizing the Limits of Markets, Rediscovering Public Interest in Utilities," in Robert E. Willett (ed), Electric and Natural Gas Business: Understanding It! (2003 and Beyond) (Houston: Financial Communications: 2003)

"Protecting the Public Interest in the Transition to Competition in New York Industries," The Electric Utility Industry in Transition (Public Utilities Reports, Inc. & the New York State Energy Research and Development Authority, 1994)

"The Seven Percent Solution: Energy Prices, Energy Policy and the Economic Collapse of the 1970s," in Energy Concerns and American Families in the 1980s (Washington, D.C.: The American Association of University Women Educational Foundation, 1983)

"Natural Gas Policy Analysis," in Edward Mitchell (Ed.), Natural Gas Pricing Policy (Washington, D.C.: American Enterprise Institute, 1983)

Equity and Energy: Rising Energy Prices and the Living Standard of Lower Income Americans (Boulder, Colorado: Westview Press, 1983)

Articles and Papers:

"The Economics of Nuclear Reactors: Renaissance or Relapse?," *Council on Foreign Relations,* July 10, 2009

"The Failure of Federal Authorities to Protect American Energy Consumers From Market Power and Other Abusive Practices," *Loyola Consumer Law Review,* 19:4 (2007)

"Too Much Deregulation or Not Enough," *Natural Gas and Electricity*, June 2005

"Real Energy Crisis is $200 Billion Natural Gas Price Increase," Natural Gas and Electricity, August 2004

"Regulators Should Regain Control to Prevent Abuses During Scarcity," Natural Gas, August 2003

"Economics of Power: Heading for the Exits, Deregulated Electricity Markets Not Working Well," *Natural Gas*, 19:5, December 2002

"Let's Go Back," Public Power, November-December 2002

"Conceptualizing and Measuring the Burden of High Energy Prices," in Hans Landsberg (Ed.), High Energy Costs: Assessing the Burden (Washington, D.C.: Resources For the Future, 1982)

"Energy Efficiency Investments in Single Family Residences: A Conceptualization of Market Inhibitors," in Jeffrey Harris and Jack Hollander (Eds.), Improving Energy Efficiency in Buildings: Progress and Problems (American Council for An Energy Efficient Economy, 1982)

"Policy Packaging for Energy Conservation: Creating and Assessing Policy Packages," in Jeffrey Harris and Jack Hollander (Eds.), Improving Energy Efficiency in Buildings: Progress and Problems (American Council for An Energy Efficient Economy, 1982)

"The Role of Consumer Assurance in the Adoption of Solar Technologies," International Conference on Consumer Behavior and Energy Policy, August, 1982

"Energy and the Poor," Third International Forum on the Human Side of Energy, August, 1982

"Energy Price Policy and the Elderly," Annual Conference, National Council on the Aging, April, 1982

"Energy and Jobs: The Conservation Path to Fuller Employment," Conference on Energy and Jobs conducted by the Industrial Union Department of the AFL-CIO, May 1980

Research Reports

U.S. Oil Market Fundamentals and Public Opinion, Consumer Federation of America, May 2010

Building on the Success of Energy Efficiency Programs to Ensure an Affordable Energy Future, Consumer Federation of America, February 2010

The Impact of Maximizing Energy Efficiency on Residential Electricity and Natural Gas Utility Bills in a Carbon-Constrained Environment: Estimates of National and

State-By-State Consumer Savings, Consumer Federation of America November 2009

Shifting Fuel Economy Standards into High Gear, Consumer Federation of America, November 24, 2009

A Consumer Analysis of Energy Efficiency and Renewable Energy Standards: The Cornerstone of Consumer-Friendly Energy/Environmental Policy, Consumer Federation of America, May 2009

All Risk; No Reward, Institute for Energy and the Environment, Vermont Law School, Dec 2009.

The Economics of Nuclear Reactors: Renaissance of Relapse, Institute for Energy and the Environment, Vermont Law School, June 2009.

A Consumer Analysis of the Adoption of the California Clean Cars Program in Other States: Florida, Consumer Federation of America, November 2008

A Boom for Big Oil – A Bust for Consumers: Ana analysis of Policies to Meet American Energy Needs, Consumer Federation of America, September 2008

Climate Change and the Electricity Consumer: Background Analysis to Support a Policy Dialogue, Consumer Federation of America, June 2008

Ending America's Oil Addiction: A Quarterly Report on Consumption, Prices and Imports, Consumer Federation of America, April 2008

A Consumer Analysis of the Adoption of the California Clean Cars Program in Other States: Arizona, Consumer Federation of America, March 2008

A Step Toward A Brighter Energy Future, Consumer Federation of America, December 2007

A Consumer Analysis of the Adoption of the California Clean Cars Program in Other States: New Mexico, Consumer Federation of America, November 2007

Not Time to Waste: America's Energy Situation Is Dangerous, But Congress Can Adopt New Policies to Secure Our Future, Consumer Federation of America, October 2007

Technology, Cost and Timing, Consumer Federation of America, July 2007

Florida's Stake in the Fuel Economy Battle, July 2007

Big Oil v. Ethanol, Consumer Federation of America, July 2007

Too Little, Too Late: Why the Auto Industry Proposal To Go Low and Slow on Fuel Economy Improvements Is Not in the Consumer or National Interest, Consumer Federation of America, July 2007

The Senate Commerce Committee Bill Is Much Better For Consumers and The Nation Than the Automobile Industry Proposal, Consumer Federation of America, June 2007

Rural Households Benefit More From Increases In Fuel Economy, Consumer Federation of America, June 207

A Consumer Pocketbook And National Cost-Benefit Analysis of "10 in10", Consumer Federation of America, June 2007

Time to Change the Record on Oil Policy, Consumer Federation of America, August 2006

50 by 2030: Why $3.00 Gasoline Makes the 50-Miles Per Gallon Car Feasible, Affordable and Economic, Consumer Federation of America, (May 2006)

The Role of Supply, Demand, Industry Behavior and Financial Markets in the Gasoline Price Spiral (Prepared for Wisconsin Attorney General Peggy A. Lautenslager, May 2006)

Debunking Oil Industry Myths and Deception: The $100 Billion Consumer Rip-Off (Consumer Federation of America and Consumers Union, May 3, 2006)

The Role of Supply, Demand and Financial Markets in the Natural Gas Price Spiral (prepared for the Midwest Attorneys General Natural Gas Working Group: Illinois, Iowa, Missouri, Wisconsin, March 2006)

The Impact of Rising Prices on Household Gasoline Expenditures (Consumer Federation of America, September 2005)

Responding to Turmoil in Natural Gas Markets: The Consumer Case for Aggressive Policies to Balance Supply and Demand (consumer Federation of America, December 2004)

Record Prices, Record Oil Company Profits: The Failure Of Antitrust Enforcement To Protect American Energy Consumers (Consumer Federation of America, Consumers Union, September 2004)

Fueling Profits: Industry Consolidation, Excess Profits, & Federal Neglect: Domestic Causes of Recent Gasoline and Natural Gas Price Shocks (Consumer Federation of America and Consumers Union, May 2004)

Spring Break in the U.S. Oil Industry: Price Spikes, Excess Profits and Excuses (Consumer Federation of America, October 2003)

How Electricity Deregulation Puts Pressure On The Transmission Network And Increases It's Cost (Consumer Federation of America, Consumers Union and U.S. PIRG, August 2003)

A Discouraging Word (or Two, or Three, or Four) About Electricity Restructuring in Texas, Pennsylvania, New England and Elsewhere Consumer Federation of America, U.S. Public Interest Research Group and Consumers Union, March 2003)

All Pain, No Gain: Restructuring and Deregulation in the Interstate Electricity Market (Consumer Federation of America, September 2002)

U.S. Capitalism and the Public Interest: Restoring the Balance in Electricity and Telecommunications Markets (Consumer Federation of America, August 2002)

Electricity Deregulation and Consumers: Lesson from a Hot Spring and a Cool Summer (Consumer Federation of America, August 30, 2001)

Ending the Gasoline Price Spiral: Market Fundamentals for Consumer-Friendly Policies to Stop the Wild Ride (Consumer Federation of America, July 2001)

Analysis of Economic Justifications and Implications of Taxing Windfall Profits in the California Wholesale Electricity Market (Consumer Federation of America and Consumers Union, June 13, 2001)

Behind The Headlines Of Electricity Restructuring A Story Of Greed, Irresponsibility And Mismanagement Of A Vital Service In A Vulnerable Market (Consumer Federation of America, March 20, 2001)

Reconsidering Electricity Restructuring: Do Market Problems Indicate a Short Circuit or a Total Blackout? (Consumer Federation of America, November 30. 2000)

Mergers and Open Access to Transmission in the Restructuring Electric Industry (Consumer Federation of America, April 2000)

Electricity Restructuring and the Price Spikes of 1998 (Consumer Federation of America and Consumers Union, June 1999)

The Residential Ratepayer Economics of Electric Utility Restructuring (Consumer Federation of America, July 1998)

Consumer Issues in Electric Utility Restructuring (Consumer Federation of America, February 12, 1998)

A Consumer Issue Paper on Electric Utility Restructuring (American Association of Retired Persons and the Consumer Federation of America, January, 1997)

Transportation, Energy, and the Environment: Balancing Goals and Identifying Policies, August 1995

A Residential Consumer View of Bypass of Natural Gas Local Distribution Companies, February 1988

The National Energy Security Policy Debate After the Collapse of Cartel Pricing: A Consumer Perspective, January 1987

The Energy, Economic and Tax Effects of Oil Import Fees, October 25, 1985

The Bigger the Better: The Public Interest in Building a Larger Strategic Petroleum Reserve, June 12, 1984

The Consumer Economics of CWIP: A Short Circuit for American Pocketbooks, April, 1984

Public Preference in Hydro Power Relicensing: The Consumer Interest in Competition, April 1984

Concept Paper for a Non-profit, Community-based, Energy Services Company, November 1983

The Consumer and Energy Impacts of Oil Exports, April 1983

Up Against the Consumption Wall: The Impact of Rising Energy Prices on Lower Income Consumers, March 1983

A Decade of Despair: Rising Energy Prices and the Living Standards of Lower Income Americans, September 1982

The Impact of Rising Energy Prices on the Delivery of Public Service by Local Governments, August 1982

The Impact of Rising Energy Prices on the Low Income Population of the Nation, the South, and the Gulf Cost Region, July, 1982

A Comprehensive Analysis of the Impact of a Crude Oil Import Fee: Dismantling a Trojan Horse, April 1982

The Past as Prologue II: The Macroeconomic Impacts of Rising Energy prices, A Comparison of Crude Oil Decontrol and Natural Gas Deregulation, March, 1982

The Past as Prologue I: The Underestimation of Price Increases in the Decontrol Debate, A Comparison of Oil and Natural Gas, February 1982

Oil Price Decontrol and the Poor: A Social Policy Failure, February 1982

Natural Gas Decontrol: A Case of Trickle-Up Economics, January 1982

A Comprehensive Analysis of the Costs and Benefits of Low Income Weatherization and Its Potential Relationship to Low Income Energy Assistance, June 1981

Summary of Market Inhibitors, February 1981

Program Models and Program Management Procedures for the Department of Energy's Solar Consumer Assurance Network Project: A Rapid Feedback Evaluation, February 1981

An Analysis of the Economics of Fuel Switching Versus Conservation for the Residential Heating Oil Consumer, October 1980

Energy Conservation in New Buildings: A Critique and Alternative Approach to the Department of Energy's Building Energy Performance Standards, April, 1980

The Basics of BEPS: A Descriptive Summary of the Major Elements of the Department of Energy's Building Energy Performance Standards, February, 1980

COMMUNICATIONS AND MEDIA

Books and Chapters

"Broadband in America: A Policy of Neglect is not Benign," in Enrico Ferro, Yogesh K. Dwivedi, J. Ramon Gil-Garcia, and Michael D. Williams, Eds., *Overcoming Digital Divides: Constructing an Equitable and Competitive Information Society,"* IGI Global Press.

"Political Action And Internet Organization: An Internet-Based Engagement Model," in Todd Davies and Seeta Pena Gangaharian, Eds., *Online Deliberation: Design, Research and Practice,* CSLI press.

"When Counting Counts: Marrying Advocacy and Academics in the Media Ownership Research Wars at the FCC," forthcoming in Lynn M. Harter, Mohan J. Dutta, and Courtney Cole, Eds., *Communicating for Social Impact: Engaging Communication Theory, Research, and Pedagogy,* Hampton Press.

The Case Against Media Consolidation (Donald McGannon Communications Research Center, 2007)

Open Architecture as Communications Policy (Stanford Law School, Center for Internet and Society: 2004)

Media Ownership and Democracy in the Digital Information Age: Promoting Diversity with First Amendment Principles and Rigorous Market Structure Analysis (Stanford Law School, Center for Internet and Society: 2003)

Cable Mergers and Monopolies: Market Power In Digital Media and Communications Networks (Washington, D.C.: Economic Policy Institute, 2002)

"When Law and Social Science Go Hand in Glove: Usage and Importance of Local and National News Sources, Critical Questions and Answers for Media Market Analysis," forthcoming in, Philip Napoli, Ed. *Media Diversity and Localism: Meaning and Metrics, (*Lawrence Erlbaum, 2007)

"The Importance of Open Networks in Sustaining the Digital Revolution," in Thomas M. Lenard and Randolph J. May (Eds.) Net Neutrality or Net Neutering (New York, Springer, 2006)

"Reclaiming The First Amendment: Legal, Factual And Analytic Support For Limits On Media Ownership," Robert McChesney and Benn Scott (Eds), The Future of Media (Seven Stories Press, 2005)

"Building A Progressive Media And Communications Sector," Elliot Cohen (Ed.), News Incorporated: Corporate Media Ownership And Its Threat To Democracy (Prometheus Books, 2005)

"Hyper-Commercialism In The Media: The Threat To Journalism And Democratic Discourse," Snyder-Gasher-Compton-(Eds), Converging Media, Diverging Politics: A Political Economy Of News In The United States And Canada (Lexington Books, 2005)

"The Digital Divide Confronts the Telecommunications Act of 1996: Economic Reality versus Public Policy," in Benjamin M. Compaine (Ed.), The Digital Divide: Facing a Crisis or Creating a Myth? (Cambridge: MIT Press, 2001)

Articles and Papers:

"Round #1 in the Digital Intellectual Property Wars: Economic Fundamentals, Not Piracy, Explain How Consumers and Artists Won in the Music Sector," Telecommunications Policy Research Conference, September 2008.

"When The Market Does Not Reign Supreme: Localism And Diversity In U.S. Media Policy," *International Communications Association*, forthcoming, May 2008

"Minority Programming: Still at The Back of the Bus," *International Communications Association*, forthcoming, May 2008, with Adam Lynn

"Traditional Content Is Still King as the Source of Local News and Information," *International Communications Association*, forthcoming, May 2008

"Junk Science And Administrative Abuse In The Effort Of The FCC To Eliminate Limits On Media Concentration," *International Communications Association,* forthcoming, May 2008.

"Contentless Content Analysis: Flaws In The Methodology For Analyzing The Relationship Between Media Bias And Media Ownership," forthcoming, *International Communications Association,* May 2008.

"Network Neutrality," *Toll Roads? The Legal and Political Debate Over Network Neutrality,* University of San Francisco Law School, January 26, 2008

"The Lack of Racial and Gender Diversity in Broadcast Ownership and The Effects of FCC Policy: An Empirical Analysis," *Telecommunications Research Policy Conference*, September 2007, with Derek Turner

"New Media and Localism: Are Local Cable Channels and Locally Focused Websites Significant New and Diverse Sources of Local News and Information? An Empirical Analysis," *Telecommunications Research Policy Conference*, September 2007, with Adam Lynn

"A Case Study of Why Local Reporting Matters: Photojournalism Framing of the Response to Hurricane Katrina in Local and National Newspapers," International Communications Association, May 2007.

"Will the FCC Let Local Media Rise from the Ashes of Conglomerate Failure," International Communications Association, May 2007.

"The Failure of Federal Authorities to Protect American Energy Consumers From Market Power and Other Abusive Practices," *Loyola Consumer Law Review,* 19:4 (2007)

"The Central Role of Network Neutrality in the Internet Revolution," Public Interest Advocacy Center, Ottawa Canada, November 24, 2006

"Governing the Spectrum Commons," September 2006. Telecommunications Policy Research Conference, October 2006

"Accessing the Knowledge Commons in the Digital Information Age," Consumer Policy Review, May/June 2006

"Independent, Non-Commercial Video," Beyond Broadcast, Berkman Center, Harvard University, May 12, 2006

"Defining Appropriation Right in the Knowledge Commons of the Digital Information Age: Rebalancing the Role of Private Incentives and Public Circulation in Granting Intellectual Monopoly Privileges," Legal Battle Over Fair Use, Copyright, and Intellectual Property, March 25, 2006

"The Economics of Collaborative Production: A Framework for Analyzing the Emerging Mode of Digital Production," The Economics of Open Content: A Commercial Noncommercial Forum, MIT January 23, 2006

"From Wifi to Wikis and Open Source: The Political Economy of Collaborative Production in the Digital Information Age," Journal on Telecommunications and High Technology Law, 5:1, 2006

"Information is a Public Good," Extending the Information Society to All: Enabling Environments, Investment and Innovation, World Summit on the Information Society, Tunis, November 2005

"The Importance of Collateral Communications and Deliberative Discourse in Building Internet-Based Media Reform Movements," Online Deliberation: Design, Research and Practice/DIAC, November, 2005

"Collaborative Production in Group-Forming Networks: The 21st Century Mode of Information Production and the Telecommunications Policies Necessary to Promote It," The State of Telecom: Taking Stock and Looking Ahead, Columbia Institute on Tele-Information, October 2005

"The Economics of Collaborative Production in the Spectrum Commons," IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks, November 2005

"Independent Noncommercial Television: Technological, Economic and Social Bases of A New Model of Video Production," Telecommunications Policy Research Conference, October 2005

"Spectrum as Speech in the 21st Century," The Public Airwaves as a Common Asset and a Public Good: Implications for the Future of Broadcasting and Community Development in the U.S., Ford foundation, March 11, 2005

"When Law and Social Science Go Hand in Glove: Usage and Importance of Local and National News Sources, Critical Questions and Answers for Media Market Analysis, Telecommunications Policy Research Conference, October 2004

"Dividing the Nation, Digitally: When a Policy Of Neglect is Not Benign," The Impact of the Digital Divide on Management and Policy: Determinants and Implications of Unequal Access to Information Technology, Carlson School of Management, University of Minnesota, August 28, 2004.

"Limits on Media Ownership are Essential," Television Quarterly, Spring Summer 2004

"Applying the Structure, Conduct Performance Paradigm of Industrial Organization to the Forum for Democratic Discourse," Media Diversity and Localism, Meaning, Metrics and Public Interest, Donald McGannon Communications Research Center, Fordham University, December 2003

"Cable Market Power, Pricing And Bundling After The Telecommunications Act Of 1996: Explorations Of Anti-Consumer, Anticompetitive Practices," Cable TV Rates: Has Deregulation Failed?, Manhattan Institute, November 2003

"Hope And Hype Vs. Reality: The Role Of The Commercial Internet In Democratic Discourse And Prospects For Institutional Change," Telecommunication Policy Research Conference, September 21, 2003

"Ten Principles For Managing The Transition To Competition In Local Telecommunications Markets, Triennial Review Technical Workshop National Association of Regulatory Utility Commissioners, Denver CO, July 27, 2003

"Universal Service: A Constantly Expanding Goal," Consumer Perspectives on Universal Service: Do Americans Lose Under a Connection-based Approach*?* (Washington, D.C.: New Millennium Research Council, June 2003)

"The Evidence Is Overwhelming: Diversity, Localism And The Public Interest Are The Victims Of Concentration, Conglomeration And Consolidation Of The Commercial Mass Media Concentration And Local Markets," The Information Policy Institute and The Columbia Institute On Tele-Information The National Press Club, Washington, DC, March 11, 2003

"Loss Of Diversity, Localism And Independent Voices Harms The Public Interest: Some Recent Examples," The Information Policy Institute and The Columbia Institute On Tele-Information The National Press Club, Washington, DC, March 11, 2003

"Open Communications in Open Economies and Open Societies: Public Interest Obligations are Vital in the Digital Information Age," Convergence: Broadband Policy and Regulation Issues for New Media Businesses in the New Millennium Georgetown University Law Center, Advanced Computer and Internet Law Institute March 5, 2003.

"The Political Economy Of Spectrum Policy: Unlicensed Use Wins Both The Political (Freedom Of Speech) And Economic (Efficiency) Arguments," Spectrum Policy: Property Or Commons? Stanford Law School, March 1, 2003

"What's 'New" About Telecommunications in the 21st Century Economy: Not Enough to Abandon Traditional 20th century Public Interest Values" Models of Regulation For the New Economy, University of Colorado School of Law, February 1, 2003

"Comments on *Broadband: Bringing Home the Bits,* Columbia Institute for Tele-Information, March 18, 2002

"Fair Use and Innovation First, Litigation Later: Why digitally Retarding Media (DRM) Will slow the Transition to the Digital Information Age," Online Committee, Federal Communications Bar Association, January 29, 2003 "Open Communications Platforms: Cornerstone of Innovation and Democratic Discourse In the Internet Age," Journal on Telecommunications, Technology and Intellectual Property, 2:1, 2003, first presented at The Regulation of Information Platforms, University of Colorado School of Law, January 27, 2002

"Foundations And Principles Of Local Activism In The Global, New Economy," The Role of Localities and States in Telecommunications Regulation: Understanding the Jurisdictional Challenges in an Internet Era, University of Colorado Law School, `April 16, 2001

"The Role Of Technology And Public Policy In Preserving An Open Broadband Internet," The Policy Implications Of End-To-End, Stanford Law School, December 1, 2000

"Inequality In The Digital Society: Why The Digital Divide Deserves All The Attention It Gets," Cardozo Arts and Entertainment Law Journal, 2002, first presented at Bridging The Digital Divide: Equality In The Information Age, Cardozo School Of Law, November 15, 2000

"Picking Up The Public Policy Pieces Of Failed Business And Regulatory Models," Setting The Telecommunications Agenda, Columbia Institute For Tele-Information November 3, 2000

"Progressive, Democratic Capitalism In The Digital Age," 21st Century Technology and 20th Century Law: Where Do We Go from Here? The Fund for Constitutional Government, Conference on Media, Democracy and the Constitution, September 27, 2000

"Open Access To The Broadband Internet: Technical And Economic Discrimination In Closed, Proprietary Networks," University of Colorado Law Review, Vol. 69, Fall 2000

"Antitrust As Consumer Protection In The New Economy: Lessons From The Microsoft Case, Hastings Law Journal, 52: 4, April 2001, first presented at Conference On Antitrust Law In The 21st Century Hasting Law School, February 10, 2000

"Evolving Concepts of Universal Service," The Federalist Society, October 18, 1996

"Delivering the Information Age Now," Telecom Infrastructure: 1993, Telecommunications Reports, 1993

"Divestiture Plus Four: Take the Money and Run," Telematics, January 1988

"Regulatory Reform in Telecommunications: A Solution in Search of a Problem," Telematics, 4:11, November 1987.

"The Line of Business Restriction on the Regional Bell Operating Companies: A Plain Old Anti-trust Remedy for a Plain Old Monopoly," Executive Leadership Seminar on Critical Policy Developments in Federal Telecommunications Policy, The Brookings Institution, October 7, 1987

"The Downside of Deregulation: A Consumer Perspective After A Decade of Regulatory Reform," Plenary Session, Consumer Assembly, February 12, 1987

"Regulatory Reform for Electric Utilities, Plenary Session, Consumer Federation of American, Electric Utility Conference, April 4, 1987

"Round Two in the Post-Divestiture Era: A Platform for Consumer Political Action," Conference on Telephone Issues for the States -- 1984: Implementing Divestiture, May, 1984

Research Reports

The Impact of the Vertically Integrated, Television-Movie Studio Oligopoly on Source Diversity and Independent Production, Independent Film and Television Association, October 2006

How Bigger Media Will Hurt Alaska, Arkansas, California, Florida, Maine, Michigan, Montana, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, Media and Democracy Coalition, October 2006

Mapping the Terrain in the Battle Over Access to Knowledge in the Digital Information Age (June 2006)

Online Deliberation: Mapping The Field; Tapping The Potential From The Perspective Of A Media/Internet Activist *(*August 2005)

Broken Promises and Strangled Competition: The Record of Baby Bell Merger and Market Opening Behavior (Consumer Federation of America, June 2005)

Over a Barrel: Why Aren't Oil Companies Using Ethanol to Lower Gasoline Prices? (Consumer Federation of America, May 2005)

Reflections Of A Media Activist On New Strategies For Justice: Linking Corporate Law With Progressive Social Movements (May 2005)

Time for the Recording Industry to Face the Music: The Political, Social and Economic Benefits of Peer-to-Peer Communications Networks (Consumer Federation of America, Consumers Union, Free press, U.S. Public Interest Research Group, March 2005)

Expanding the Digital Divide and Falling Behind in Broadband (Consumer Federation of America and Consumers Union, October 2004)

Time to Give Consumers Real Cable Choices: After Two Decades of Anti-consumer Bundling and Anti-Competitive Gate keeping (Consumer Federation of America and Consumers Union, July 2004)

The Public Interest in Open Communications Networks (Consumer Federation of America, July 2004)

Caution Flag in the FCC's Race to Eliminate the Unbundled Network Element Platform (consumer Federation of America, June 2003)

New Survey Finds Americans Rely on Newspapers Much More than Other Media for Local News and Information: FCC Media Ownership Rules Based on Flawed Data (Consumer Federation of America, Consumers Unions, January 2004)

Cable Market Power, Pricing And Bundling After The Telecommunications Act Of 1996: Explorations Of Anti-Consumer, Anticompetitive Practices (Consumer Federation of America and Consumers Union, November 2003)

Competition At The Crossroads: Can Public Utility Commissions Save Local Phone Competition? (Consumer Federation of America, October 7, 2003)

Free TV Swallowed by Media Giants: The Way It Really Is, September 15, 2003 (Consumer Federation of America, Consumers Union and Center for Digital Democracy, September 15, 2003)

Abracadabra! Hocus-Pocus! Making Media Market Power Disappear With The FCC's Diversity Index (Consumer Federation of America and Consumers Union, July 2003)

Promoting The Public Interest Through Media Ownership Limits: A Critique Of The FCC's Draft Order Based On Rigorous Market Structure Analysis And High Competitive Standards (Consumer Federation of America and Consumers Union, May 2003)

Public Opinion Opposes The FCC's March Toward Concentrated Media Markets (Consumer Federation of America, April 2003)

Democratic Discourse in the Digital Information Age: Legal Principles and Economic Challenge (Consumer Federation of America, February 2003)

Cable Mergers, Monopoly Power and Price Increases (Consumer Federation of America and Consumers Union, January 2003)

Public Support for a Citizen-Friendly Media and Communications Industry in the Digital Age: A Review of Recent Survey Evidence (Consumer Federation of America, October 2002)

The Battle for Democratic Discourse: Recapturing a Bold Aspiration for the First amendment (Consumer Federation of America, October 2002)

Does the Digital Divide Still Exist? Bush Administration Shrugs, But Evidence Says "Yes" (Consumer Federation of America, Consumers Union, Civil Rights Forum, May 30, 2002)

The Failure of 'Intermodal Competition in Cable and Communications Markets (Consumer Federation of America and Consumers Union, April, 2002).

Competitive Processes, Anticompetitive Practices and Consumer Harm in the Software Industry: An Analysis of the Inadequacies of the Microsoft-Department of Justice Proposed Final Judgment (Jan. 25, 2002)

A Roadblock On The Information Superhighway: Anticompetitive Restrictions On Automotive Markets (Consumer Federation of America, February 2001)

Lessons From 1996 Telecommunications Act: Deregulation Before Meaningful Competition Spells Consumer Disaster (Consumer Federation of America, February 2000)

Florida Consumers Need Real Local Phone Competition: Access To Monopoly Wires Is The Key (Consumer Federation of America, January 2001)

The Real Deal: The Comparative Value of Verizon's Local Telephone Rates (New Jersey Citizen Action, December 2000)

Maryland Consumers Need Real Local Phone Competition: Fair Access to Monopoly Wires Is the Key (Consumer Federation of America, December 7, 2000)

Bailing Out Of A Bad Business Strategy: Policymakers Should Not Sacrifice Important Public Policies To Save AT&T's Failed Business Plans (Consumer Federation of America, October 2000)

Setting The Record Straight From A Consumer Perspective On Verizon's Radical Rate Restructuring Proposal (Citizen Action, October 2000)

Disconnected, Disadvantaged and Disenfranchised (Consumer Federation of America and Consumers Union, October 11, 2000)

Open Access Phase II (Consumer Federation of America, July 13, 2000)

Who Do You Trust? AOL And AT&T … When They *Challenge* The Cable Monopoly Or AOL And AT&T. When They *Become* The Cable Monopoly?, (Consumer Federation of America, Consumers Union and Media Access Project, February 2000)

Monopoly Power, Anticompetitive Business Practices and Consumer Harm in the Microsoft Case (Consumer Federation of America, December 1999)

Keeping the Information Superhighway Open for the 21st Century (Consumer Federation of America, December 1999)

Creating Open Access to the Broadband Internet: Overcoming Technical and Economic Discrimination in Closed, Proprietary Network (Consumer Federation of America, December 1999)

The Consumer Harm Caused By The Microsoft Monopoly: The Facts Speak For Themselves And They Call For A Stern Remedy (Consumer Federation of America, November 1999)

A Consumer Perspective On Economic, Social And Public Policy Issues In The Transition To Digital Television: Report Of The Consumer Federation Of America To People For Better TV (Consumer Federation of America, October 29, 1999)

Transforming the Information Superhighway into a Private Toll Road: Ma Cable and Baby Bell Efforts to Control the High-Speed Internet (Consumer Federation of America, October 1999)

Transforming the Information Superhighway into a Private Toll Road: The Case Against Closed Access Broadband Internet Systems (Consumer Federation of America and Consumer Action, Sept. 20, 1999)

Breaking the Rules: AT&T's Attempt to Buy a National Monopoly in Cable TV and Broadband Internet Services (Consumer Federation of America, Consumers Union and Media Access Project, Aug. 17, 1999)

Economic Evidence in the Antitrust Trial: The Microsoft Defense Stumbles Over the Facts (Consumer Federation of America, March 18, 1999)

The Consumer Cost of the Microsoft Monopoly: $10 Billion of Overcharges and Counting (Consumer Federation of America, Media Access Project and U.S. PIRG, January 1999)

The Digital Divide (Consumer Federation of America and Consumers Union, February 1999)

The Consumer Case Against the SBC-Ameritech Merger (Consumer Federation, et. al, January 20, 1999)

The Consumer Case Against Microsoft (Consumer Federation of America, October 1998)

The Need for Telephone Lifeline Programs in New Jersey: An Update (Center for Media Education and the Consumer Federation of America, July 1998)

Competition in Local Markets: Is the Glass 98 Percent Empty of 2 Percent Full (Consumer Federation of America, February 17, 1998)

Two Years After the Telecom Act: A Snapshot of Consumer Impact (Consumer Federation of America, January 21, 1998)

Stonewalling Local Competition: The Baby Bell Strategy to Subvert the Telecommunications Act of 1996 (Consumer Federation of America, January 1998)

The Need for Telephone Lifeline Programs in Kentucky (Kentucky Youth Advocates and Center for Media Education, October 1997)

Money for Nothing: The Case Against Revenue Replacement in the Transition to Local Exchange Competition: A Consumer View of the Gap Between Efficient Prices and Embedded Costs, American Association of Retired Persons, Consumer Federation of America, Consumers Union, January 1997

Low Income Children and the Information Superhighway: Policies for State Public Service Commissions After the Telecommunications Act of 1996, Prepared for the Alliance for South Carolina's Children, January 1997

Excess Profits and the Impact of Competition on the Baby Bells, Consumer Federation of America, September 1996

Universal Service: An Historical Perspective and Policies for the 21st. Century, Benton Foundation and the Consumer Federation of America, August 1996

A Consumer View of Missouri Telephone Legislation: House Bill 1363 Would Mandate Consumer Overcharges and Telephone Company Excess Profits, Consumer Federation of America, March 20, 1996

Evolving Notions of Universal Service (Consumer Federation of America, October 18, 1996)

Economic Concentration and Diversity in the Broadcast Media: Public Policy and Empirical Evidence, December 1995

Federal Deregulation and Local Telephone and Cable TV Rates: Rate Shock in the 1980s and Prospects in the 1990s, November 1995

Basic Service Rates and Financial Cross-Subsidy of Unregulated Baby Bell Activities: The Importance of Effective Competition for Local Service Before Deregulation of Profits and Cross-Ownership, October, 1995

Federal Policy and Local Telephone and Cable TV Rates: Rate Shock in the 1980s and Prospects for the 1990S, October 1995

Mergers and Deregulation on the Information Superhighway: The Public Takes a Dim View: Results of a National Opinion Poll, September 1995

Competition and Consumer Protection in the Florida Telecommunications Legislation, Prepared for the Florida Office of the People's Counsel, April 1995

The Meaning of the Word Infrastructure, June 30, 1994

Protecting the Public Interest in the Transition to Competition in Network Industries, June 14, 1994

Local Exchange Costs and the Need for A Universal Service Fund: A Consumer View, May 1994

Milking the Monopoly: Excess Earnings and Diversification of the Baby Bells Since Divestiture, February 1994

A Consumer Road Map to the Information Superhighway: Finding the Pot of Gold at the End of the Road and Avoiding the Potholes Along the Way, January 26, 1994

Consumers with Disabilities in the Information Age: Public Policy for a Technologically Dynamic Market Environment, 1993

Selling Information Services During 800 and 900 Number Calls: The Need for Greater Consumer Protection, October 2, 1992

The Economics of Deregulation and Reregulation in the Cable Industry: A Consumer View, September 1992

Developing the Information Age in the 1990s: A Pragmatic Consumer View, June 8, 1992

Divestiture Plus Eight: The Record of Bell Company Abuses Since the Break-up of AT&T, December 1991

Transmission Planning, Citing, and Certification in the 1990s: Problems, Prospects and Policies, August 1990

Expanding the Information Age for the 1990s: A Pragmatic Consumer Analysis, January 11, 1990

Divestiture Plus Five: Residential Telephone Service Five Years After the Breakup of AT&T, December 1988

Public Opinion About Deregulation and Regulation in the Transportation and Communications Industries, May 1988

Telecommunications Policy Regarding Deregulation, May 1988

Universal Telephone Service in Ohio: A Review of Recent Evidence, November 12, 1987

The Role of Natural Gas in Solving the Clean Air Problem: Reconciling Consumer and Environmental Interests, April 19, 1988

Divestiture Plus Four: Take the Money and Run, December 1987

The Telecommunications Needs of Older, Low Income and General Consumers in the Post-Divestiture Era, October 1987

Bulk Commodities and the Railroads After the Staggers Act: Freight Rates, Operating Costs and Market Power, October 1987

Divestiture Plus Three: Still Crazy After All These Years, December 1986

Low Income Households in the Post Divestiture Era: A study of Telephone Subscribership and Use in Michigan, October 1986

Sorry Wrong Numbers: Federal Agency Analyses of Telephone Subscribership in the Post-Divestiture Era, February 1986

Industrial Organization and Market Performance in the Transportation and Communications Industries, July 1985

Ringing Off the Wall: An Alarming Increase in Residential Phone Rates, 1984-986, May 12, 1985

Divestiture: One Year Later, December 19, 1984

OTHER

Books and Chapters

The Transformation of Egypt: State and State Capitalism in Crisis (Baltimore: Johns Hopkins University Press, 1982)

"Egyptian State Capitalism In Crisis: Economic Policies and Political Interests," in Talal Asad and Roger Owen (Eds.), Sociology of Developing Societies: The Middle East (London: Macmillan Press, 1983). First published in The International Journal of Middle Eastern Studies, X:4, 1979

"Revoluciones Semi-legales en el Mediterraneo," in Jesus De Miguel (Ed.), Cambio Social en La Europa Mediterranea (Barcelona: Ediciones Peninsula, 1979). First presented as "The Structure of Semi-legal Revolutions: Between Southern Mediterranean and Western European Patterns," 9th World Congress of the International Sociological Society, Uppsala, Sweden, August, 1978

Articles and Papers

"The Failure Of Market Fundamentalism: What Are The Issues In The ICT Sector?" The New Economics of ICT: Implications of Post-Neoclassical Economics for the Information Communications Technology Sector, Columbia University, March 20, 2009

"Restoring the Balance of Public Values and Private Incentives in American Capitalism," Too Much Deregulation or Not Enough, Cato Institution, November 1, 2002

"Freeing Public Policy From The Deregulation Debate: The Airline Industry Comes Of Age (And Should Be Held Accountable For Its Anticompetitive Behavior), American Bar Association, Forum On Air And Space Law, The Air and Space Lawyer, Spring 1999

"An Uninformed Purchase," Best's Review: Life/Health Insurance Edition, July 1987

"The Trouble with the ICC and the Staggers Act," Pacific Shipper, June 1, 1987

"The Leftist Opposition in Egypt," Conference on Sadat's Decade: An Assessment, conducted by the Middle Eastern Studies Program of the State University of New York at Binghamton, April, 1984

"The Crisis in the Rental Housing Market: Energy Prices, Institutional Factors and the Deterioration of the Lower Income Housing Stock," 53rd Annual Meeting of the Eastern Sociological Society, March, 1983

"State Capitalism and Class Structure in the Third World: The Case of Egypt," International Journal of Middle East Studies, XIV:4, 1983

"The Militarization and Demilitarization of the Egyptian Cabinet," International Journal of Middle East Studies, XIII: 2, 1982

"Sociological Theory and Economic History: The Collegial Organizational Form and the British World Economy," 51st Annual Meeting of the Eastern Sociological Society, March, 1981

"The Failure of Health Maintenance Organizations: A View from the Theory of Organizations and Social Structure," 50th Annual Meeting of the Eastern Sociological Society, March, 1980

"Impact of Incentive Payments and Training on Nursing Home Admissions, Discharges, Case Mix and Outcomes," Massachusetts Sociological Society, November, 1979

"The State as an Economic Environment," 7th Annual New England Conference on Business and Economics, November, 1979

"The Domestic Origins of Sadat's Peace Initiative," Yale Political Union, March, 1979

"State Capitalism and Class Structure: The Case of Egypt," 49th Annual Meeting of the Eastern Sociological Society March, 1979

"The Welfare State and Equality: A Critique and Alternative Formulation from a Conflict Perspective," 48th Annual Meeting of the Eastern Sociological Society, April, 1978

"A Comparative Evaluation of Operation Breakthrough," Annual Meeting of the Environmental Research Design Association, April, 1975

"Plural Societies and Conflict: Theoretical Considerations and Cross National Evidence," International Journal of Group Tensions, IV:4, 1974. First presented at the 44th Annual Meeting of the Eastern Sociological Society, March, 1974

"Racialism and Pluralism: A Further Dimensional Analysis," Race and Class, XV:3, 1974

"Personality Correlates of Technology and Modernization in Advanced Industrial Society (with Ed Dager), 8th Annual Meeting of the International Sociological Society, August, 1974

"Toward a Model of Conflict in Minority Group Relations," Annual Meeting of the District of Columbia Sociological Society, May, 1973

"A Re-evaluation of the Causes of Turmoil: The Effects of Culture and Modernity," in A Reader in Collective Behavior and Social Movements (F.E. Peacock: New York, 1978). First published in Comparative Political Studies, VII:3, 1974. First presented at the 43rd Annual Meeting of the Eastern Sociological Society, March, 1973

"The Occurrence of Mutiny in World War I: A Sociological View," International Behavioral Scientist, IV:3, 1972

I. Research Reports

II. with Barbara Roper, *Reform of Financial Markets: the Collapse Of Market Fundamentalism and the First Steps to Revitalize the Economy*, April 2009

Credit Unions In A 21st Century Financial Marketplace: Economic And Organizational Underpinnings Of Institutional Success (Consumer Federation of America, 2004)

Unconventional Wisdom: Ten New State Polls Offer a Chance to Rethink How Americans View the Assault Weapons Ban (Consumer Federation of America and the Educational Fund to Stop Gun Violence, July 13, 2004)

Public Opinion About quality, Self-Dealing and Billing for Ancillary Medical Tests, October 17, 1991

A Consumer Perspective on Direct Billing: The Next Step in Reforming the Market for Ancillary Medical Services, July 1991

Clearing the Air on Airline Deregulation, May 22, 1991

Airport Pricing of Access for Off-Premise Auto Rental Companies: The Growing Pattern of Abuse, April 24, 1990

Public Opinion About Health Care Purchases: Cost, Ease of Shopping and Availability, April 27, 1989

Bailing Out the Savings and Loans Who Bears the Burden Under Alternative Financing Approaches, March 9, 1989

Airport Fees for Auto Rental Companies: A Consumer Perspective, June 1988,

Reforming the Interstate Commerce Commission: Getting the Facts Straight, February 10, 1988

The Benefits of the Modernization of the Tort Law in the Context of the Social Movement for Improved Safety and Quality in the National Economy, September 1987

The Potential Costs and Benefits of Allowing Banks to Sell Insurance, February 10, 1987

Confusion and Excess Cost: Consumer Problems in Purchasing Life Insurance, January 21, 1987

The Costs and Benefits of Exclusive Franchising: The Case of Malt Beverages, September 17, 1986

Punitive Damages in Product Liability Cases: Setting the Record Straight, September 1986

Local Rate Increases in the Post-Divestiture Era, Excessive Returns to Telephone Company Capital, September 1986

Trends in Liability Awards: Have Juries Run Wild, May 1986

Farm worker Demographics, National and State Planning Packages, May 1986

The Great Train Robbery: Electric Utility Consumers and the Unregulated Rail Monopoly Over Coal Transportation, Overview, The Rail Monopoly Over Bulk Commodities, A Continuing Dilemma for Public Policy, August 1985

Deregulation of the Dairy Industry, November 1983

Meal Production Costs in School Food Kitchens: An Economic Analysis of Production Processes and Efficiencies, December 1981

A Study of Program Management Procedures in the Campus-based and Basic GRANTS Programs: Final Report, March 1980

A Study of Program Management Procedures in the Campus-based and Basic Grants Programs: Site Visit Report, December 1975

A Comparative Evaluation of Operation Breakthrough, Chapter 3, August 1975

Judging the Merits of Child Feeding Programs, 1975

A Comparative Evaluation of Ongoing Programs in Columbia, Kenya, and the Philippines, 1974

TESTIMONY:

FEDERAL AGENCIES AND COURTS

Comments of the Consumer Federation of America on the Proposed Horizontal Merger Guidelines, Before the Federal Trade Commission, FTC File No. PO92700, June 4, 2010

Reply Comments -- National Broadband Plan, Public Notice #30
Center for Media Justice, Consumer Federation of America, Consumers Union
Open Technology Initiative, Public Knowledge, on Broadband Adoption, Before the Federal Communications Commission, In the Matter of A National Broadband Plan for Our Future, GN Docket No. 09-47, 09-51, 09-137, January 27, 2010

"Comments of the Consumer Federation of America," before the Environmental Protection Agency and Department of Transportation, *Proposed Rulemaking to Establish Light-Duty Vehicles Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards,* November 27, 2009

"Statement of Mark Cooper to the Joint SEC-CFTC Meeting on Harmonization of Regulation," September 2, 2009.

"Comments Of The Consumer Federation Of America On November 2008 Report Of L.R. Christensen Associates, Inc." United States Of America, Surface Transportation Board, Ex Parte No. 680, *Study Of Competition In The Freight Rail Industry*, December 22, 2008

"Comments on the Draft Environmental Impact Statement of Consumer Federation of America, et al.," *Notice of Proposed Rulemaking: Average Fuel Economy Standard; Passenger Cars and Light Trucks, Model Years 2011-2015,* August 18, 2008

"Comment and Technical Support Appendices of the Consumer Federation of America," *Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2011-2015,* July 1, 2008

"Behavioral Marketing Principles," with Susan Grant, Federal Trade Commission, April 10, 2008

"Reply Comments of Consumer Federation of America and Consumers Union," *In the Matter of the Petition of Free Press, et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does not Met an Exception for "Reasonable Network Management," and Vuze, Inc. to Establish Rule Governing Network Management Practices by Broadband Network Operators, Broadband Industry Practices, Commercial Availability of Navigation Devices,* WC Docket No. 07-52, CS Docket No. 97-80, February 28, 2008

"Comments on Behavioral Tracking and Targeting," Federal Trade Commission, Town Hall Meeting on **Ehavioral Advertising: Tracking, Targeting and Technology,** November 16, 2007

"Comments of the Consumer Federation of America, Consumers Union and Free Press, *In the Matter of Broadband Industry Practices,* WC Docket No. 07-52, June 15, 2007

"Petition to Deny of Common Cause, Consumer Federation of America, Consumers Union and Free Press," *In the Matter of Consolidated Application for Authority to transfer Control of XM Sirius Radio Inc, and Sirius Satellite Radio Inc,* MB Docket No. 07-57, July 9, 2007

"Comment of the Texas Office of Public Utility Counsel, Consumer Federation of America and Consumers Union," In the Matter of Intercarrier Compensation, CC Docket No. 91-92, October 25, 2006

"Statement," Local Hearing, Federal Communications Commission, Los Angeles, October 2006

"Affidavit," with Trevor Roycroft, In the Matter of Review of AT&T Inc. and BellSouth Corporation, Application for Consent to Transfer of Control, WC Docket No. 06-74.

"Comments and Reply Comments of the Consumer Federation Of America and Consumers Union In Opposition To The Transfer Of Licenses," Applications of Adelphia Communications Corporation, Comcast Corporation and Time Warner Cable Inc., For Authority to Assign and/or Transfer Control of Various Licenses, Before the Federal Communications Commission, MM Docket No. 05-192

"Comments of Consumer Federation of America, Consumers Union and Free Press," *In the Matter of the Commission's Cable Horizontal and Vertical Ownership Limits and Attribution Rules,* MM Docket No. 92-264, August 8, 2005

"Petition to Deny of the Consumer Federation of America, Consumers Union, and USPIRG, In the Matter of Applications of SBC Communications Inc. and AT&T Corporation to

Transfer Control of Section 214 and 308 Licenses and Authorizations and Cable Landing Licenses, WC Docket No. 05-65, April 25, 2005

"Petition to Deny of the Consumer Federation of America, Consumers Union, and USPIRG, In the Matter of Applications of Verizon Communications Inc. and MCI Inc. Applications for Approval of Transfer of Control of Section, WC Docket No. 05-75, May 9, 2005

"Comments of the Consumer Federation of America and Consumers Union," before the Federal Communications Commission, In the Matter of Broadcast Localism MB Docket No. 04-233, November 1, 2004

"Comments and Reply Comments of Dr. Mark Cooper on Behalf of the Texas Office of Public Utility Counsel and the Consumer Federation of America," before the Federal Communications Commission, In the Matter of Final Unbundling Rules, Docket Nos. WC-04-313, CC-01-338, October 4, October 19, 2004.

"Comments and Reply Comments of Consumers Union and the Consumer Federation of America," In the Matter of Comments Requested on *a La Carte* and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, before the Federal Communications Commission, MB Docket No. 04-207, July 13, 2004, August 13, 2004

"Affidavit of Mark Cooper," Prometheus Radio Project, et al. v. Federal Communications Commission and United States of America, No. 03-3388, et al., August 6, 2004

"Comments Of Consumer Federation Of America and Consumers Union," In The Matter Of IP-Enabled Services, Petition Of SBC Communications Inc. For Forbearance, Before The Federal Communications Commission, WC Docket No. 04-29, 04-36, July 14, 2004

"Testimony of Mark Cooper," before the Federal Energy Regulatory Commission, Solicitation Processes for Public Utilities, June 10, 2004

"Petition to Deny and Reply to Opposition of the Consumer Federation of America and Consumers Union," In the Matter of Applications for the Transfer of Control of Licenses and Authorization from AT&T Wireless Services, Inc., and its Subsidiaries to Cingular Wireless Corporation, before the Federal Communications Commission, WT Docket No. 04-70, May3, May 20, 2004

"Opposition to the Petitions for Reconsideration, Reply comments of the Consumer Federation of America," In the Matter of Digital Broadcast Content Protection, Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Compatibility Between Cable Systems and Consumer Electronic Equipment, before the Federal Communications Commission, Docket Nos. MB-02-230, CS-97-80, PP-00-67, March 15, 2004

"Petition for Reconsideration of the Consumer Federation of America and Consumers Union," In The Matter Of 2002 Biennial Regulatory Review – Review of the

Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, Cross-Ownership of Broadcast Stations and Newspapers Rules and Policies Concerning Multiple Ownership of Radio Broadcast Stations in Local Market, Definition of Radio Markets, Federal Communications Commission, MB Docket No. 02-277, MM Docket Nos. 00-244, 01-235, 01-317, September 4, 2003

"Reply Comments Of Consumer Federation Of America," In the Matter of Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion To Digital Television, Public Interest Obligations of TV Broadcast Licensees, Children's Television Obligations Digital Television Broadcaster, Standardized and Enhanced Disclosure Requirements for Television Broadcast Licensee, Public Interest Obligations, Before the Federal Communications Commission, MB Docket No. 03-15,RM 9832, MM Docket Nos. 99-360, 00-167, 00-168, May 21, 2003

"Reply Comments of the Consumer Federation of America," In the Matter of Digital Broadcast Copy Protection, Federal Communications Commission, MB Docket NO. 02-230, February 18, 2003

"Comments of Consumer Federation of America, Consumers Union, Center for Digital Democracy, Media Access Project," In The Matter Of 2002 Biennial Regulatory Review – Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996, Cross-Ownership of Broadcast Stations and Newspapers Rules and Policies Concerning Multiple Ownership of Radio Broadcast Stations in Local Market, Definition of Radio Markets, Federal Communications Commission, MB Docket No. 02-277, MM Docket Nos. 00-244, 01-235, 01-317, Comments January 3, 2003, Reply Comments February 3, 2003

"Comments of the Texas Office of Public Utility Counsel, The Consumer Federation of America, Consumers Union," In the Matter of Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Services are Exempt from Access Charges, Federal communications Commission, WC Docket No. 02-361, January 18, 2003

"Comments of Arizona Consumers Council, California Public Interest Research Group, Colorado Public Interest Research Group, Columbia Consumer Education Council, Consumer Assistance Council (MA) Consumer Federation of America, Florida Consumer Action Network, Massachusetts Consumers' Council, North Carolina Public Interest Research Group, Oregon State Public Interest Research Group, Texas Consumers' Association, The Consumer's Voice, US Action, Virginia's Citizens' Consumer Council, In the Matter of Digital Broadcast Copy Protection, Federal Communications Commission, MB Docket NO. 02-230, December 6, 2002

"Initial Comments of the Consumer Federation of America," Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity market Design, Federal Energy Regulatory Commission, Docket No. RM-01-12-000, October 15, 2002

"An Economic Explanation of Why the West and South Want to Avoid Being Infected by FERC's SMD and Why Market Monitoring is Not an Effective Cure for the Disease," SMD Market Metrics Conference, Federal Energy Regulatory Commission, October 2, 2002

"Bringing New Auto Sales and Service Into the 21st Century: Eliminating Exclusive Territories and Restraints on Trade Will Free Consumers and Competition," Workshop on Anticompetitive Efforts to Restrict Competition on the Internet, Federal Trade Commission, October 7, 2002

"Once Money Talks, Nobody Else Can: The Public's first Amendment Assets Should Not Be Auctioned to Media Moguls and Communications Conglomerates," In the Matter of Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commission's Spectrum Policy, Federal Communications Commission, DA 02-1221, ET Docket No. 02-135, July 8, 2002

"Comments Of The Texas Office Of Public Utility Counsel, Consumer Federation Of America, Consumers Union, Media Access Project, And The Center For Digital Democracy," Federal Communications Commission, *In the Matter of Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities Universal Service Obligations of Broadband Providers Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review –Review of Computer III and ONA Safeguards And Requirements,* CC Dockets Nos. 02-3395-20, 98-10, July 1, 2002

"Comments of the Consumer Federation of America, Consumers Union, Center for Digital Democracy, The Office of Communications of the United Church of Christ, Inc., National Association of Telecommunications Officers and Advisors, Association for Independent Video Filmmakers, National Alliance for Media Arts and Culture, and the Alliance for Community Media." Federal Communications Commission, In the Matter of Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992 Implementation of Cable Act Reform Provisions of the Telecommunications Act of 1996 The Commission's Cable Horizontal and Vertical Ownership Limits and Attribution Rules Review of the Commission's Regulations Governing Attribution Of Broadcast and Cable/MDS Interests Review of the Commission's Regulations and Policies Affecting Investment In the Broadcast Industry Reexamination of the Commission's Cross-Interest Policy, CS Docket No. 98-82, CS Docket No. 96-85, MM Docket No. 92-264, MM Docket No. 94-150, MM Docket No. 92-51, MM Docket No. 87-154

"Reply Comments of the Consumer Federation of America, Consumers Union, Center for Digital Democracy, and Media Access Project," in Federal Communications Commission, In the Matter of Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992 Implementation of Cable Act Reform Provisions of the Telecommunications Act of 1996 The Commission's Cable Horizontal and Vertical Ownership Limits and Attribution Rules Review of the

Commission's Regulations Governing Attribution Of Broadcast and Cable/MDS Interests Review of the Commission's Regulations and Policies Affecting Investment In the Broadcast Industry Reexamination of the Commission's Cross-Interest Policy, CS Docket No. 98-82, CS Docket No. 96-85, MM Docket No. 92-264, MM Docket No. 94-150, MM Docket No. 92-51, MM Docket No. 87-154.

"Petition to Deny of Arizona Consumers Council, Association Of Independent Video And Filmmakers, CalPIRG, Center For Digital Democracy, Center For Public Representation, Chicago Consumer Coalition, Civil Rights Forum On Communications Policy, Citizen Action Of Illinois, Consumer Action, Consumer Assistance Council, Consumer Federation Of America, Consumer Fraud Watch, Consumers United/Minnesotans For Safe Food, Consumers Union, Consumers' Voice, Democratic Process Center, Empire State Consumer Association, Florida Consumer Action Network, ILPIRG (Illinois), Massachusetts Consumers Coalition, MassPIRG, Media Access Project, Mercer County Community Action, National Alliance For Media Arts And Culture, MontPIRG, New York Citizens Utility Board, NC PIRG, North Carolina Justice And Community Development Center, OsPIRG(Oregon State), Oregon Citizens Utility Board, Texas Consumer Association, Texas Watch, United Church Of Christ, Office Of Communication, Inc., US PIRG, Virginia Citizens Consumer Council, WashPIRG, Wisconsin Consumers League, " In the Matter of Application for Consent to the Transfer of Control of Licenses Comcast Corporation and AT&T Corporation, Transferors, to AT&T Comcast Corporation, Transferee, April 29, 2002

"Tunney Act Comments of Consumer Federation of America, Connecticut Citizen Action Group, ConnPIRG, Consumer Federation of California, Consumers Union, Florida consumer Action Network, Florida PIRG, Iowa PIRG, Massachusetts Consumer's Coalition, MassPIRG, Media Access Project, U.S. PIRG", in the *United States v. Microsoft Corp*, Civil Action No. 98-1232, (Jan. 25, 2002)

"Comments of Consumer Federation of America, et al," In the Matter of Implementation of Section 11 of the Cable Television Consumer Protection and Competition Act of 1992, Implementation of Cable Act Reform Provisions of the 'Telecommunications Act of 1996, The Commission's Cable Horizontal and Vertical Ownership Limits and Attribution Rules, Review of the Commission's Regulations Governing Attribution of Broadcast and Cable MDS Interests, Review of the Commission's Regulations and Policies Affecting Investment in the Broadcast Industry, Reexamination of the Commission's Cross-Interest Policy, CS Docket Nos. 98-82, 96-85; MM Docket Nos. 92-264, 94-150, 92-51, 87-154, January 4, 2002.

"Comments of Consumers Union, Consumer Federation of America, Civil Rights Forum, Center for Digital Democracy, Leadership Conference on Civil Rights and Media Access Project, before the Federal Communications Commission, In the Matter of Cross Ownership of Broadcast Station and Newspaper/Radio Cross-Ownership Waiver Policy, MM Docket No. 01-235, 96-197; December 3, 2001)

"Motion To Intervene And Request For Rehearing Of The Consumer Federation Of America," before the Federal Energy Regulatory Commission, San Diego Gas & Electric Company, Complaint, v. All Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, Docket Nos. EL00-95-000 et al,

"Reply Comments of the Consumer Federation Of America," before the Federal Energy Regulatory Commission, San Diego Gas & Electric Company, Complaint, v. All Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator and the California Power Exchange, Docket Nos. EL00-95-000 et al,

"Reply Comments Of Texas Office Of Public Utility Counsel, Consumer Federation Of America, Consumers Union," Federal Communications Commission, In The Matter Of Inquiry Concerning High Speed Access To The Internet Over Cable And Other Facilities, GN Docket No. 00-185, January 11, 2001

"Comments Of Texas Office Of Public Utility Counsel, Consumer Federation Of America, Consumers Union," Federal Communications Commission, In The Matter Of Inquiry Concerning High Speed Access To The Internet Over Cable And Other Facilities, GN Docket No. 00-185, December 1, 2000

"Statement before the *en banc* Hearing in the Matter of the Application of America Online, Inc. and Time Warner, Inc. for Transfer of Control," Federal Communications Commission, July 27, 2000

"Petition to Deny of Consumers Union, the Consumer Federation of America, Media Access Project and Center for Media Education," In the Matter of Application of America Online, Inc. and Time Warner for Transfer of Control, CS 00-30, April 26, 2000

"Comments Of The Consumer Federation Of America, In the Matter of Application of SBC Communications Inc. and Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. D/B/A Southwestern Bell long Distance for Provision of In-Region, InterLATA Services in Texas, Before the Federal Communications Commission, CC Docket No. 00-4, February 28, 2000

"Consumer Federation Of America, Request For Reconsideration Regional Transmission Organizations," Federal Energy Regulatory Commission, Docket No. RM99-2-000; Order No. 2000, January 20, 2000

"Reply Comments Of Texas Office Of Public Utility Counsel Consumer Federation Of America Consumers Union (Joint Consumer Commentors), In the Matter of Access Charge Reform Price Cap Performance Review for Local Exchange Carriers Low Volume Long Distance Users Federal-State Joint Board On Universal Service, Before The Federal Communications Commission, CC Docket No. 96-262, CC Docket No. 94-1, CC Docket No. 99-249, CC Docket No. 96-45, December 3, 1999.

"Reply Comments Of The Consumer Federation Of America, Consumers Union, and AARP, Proposed Transfer Of Control SBC And Ameritech," Before the Federal Communications Commission, Cc Docket No. 98-141, November 16, 1999

"Comments Of Texas Office Of Public Utility Counsel Consumer Federation Of America Consumers Union (Joint Consumer Commentors), In the Matter of Access Charge Reform Price Cap Performance Review for Local Exchange Carriers Low Volume Long Distance Users Federal-State Joint Board On Universal Service, Before The Federal Communications Commission, CC Docket No. 96-262, CC Docket No. 94-1, CC Docket No. 99-249, CC Docket No. 96-45, November 12, 1999.

"Reply Comments Of Texas Office Of Public Utility Counsel Consumer Federation Of America Consumers Union (Joint Consumer Commentors), In the Matter of Low Volume Long Distance Users Federal-State Joint Board On Universal Service, Before The Federal Communications Commission, CC Docket No. 99-249, October 20, 1999.

"Comments Of The Consumer Federation Of America," In the Matter of Application of New York Telephone Company (d/b/a/ Bell Atlantic – New York, Bell Atlantic Communications, Inc. NYNEX Long Distance Company and Bell Atlantic Global Networks, Inc., for Authorization To Provide In-Region, InterLATA Services in New York, Before the Federal Communications Commission, CC Docket No. 99-295, October 20, 1999

"Comments Of Texas Office Of Public Utility Counsel Consumer Federation Of America Consumers Union (Joint Consumer Commentors), In the Matter of Low Volume Long Distance Users Federal-State Joint Board On Universal Service, Before The Federal Communications Commission, CC Docket No. 99-249, September 20, 1999

"Reply Comments of Consumer Federation of America on Joint Petition for Waiver," before the Federal Communications Commission, In the Matter of Implementation of the Subscriber Carrier Selection Changes Provision of the Telecommunications Act of 1996, Policies and Rule Concerning Unauthorized Changes of Consumers Long Distance Carriers, CC Docket NO. 94-129, FCC 98-334

"Joint Comments of Texas Office Of Public Utility Counsel Consumer Federation Of America National Association Of State Utility Consumer Advocates Consumers Union," In the Matter of Federal-State Joint Board On Universal Service Access Charge Reform Before The Federal Communications Commission, Before The Federal Communications Commission, CC Docket No. 96-45, CC Docket No. 96-262, July 23, 1999

"Affidavit of Dr. Mark N. Cooper on Behalf of Consumer Intervenors," RE: In the Matter of Applications for Consent to the Transfer Of Control of Licenses and Section 214 Authorizations from Ameritech Corporation, Transfer, to SBC Communications Inc., Transferee, Before The Federal Communications Commission, CC Dkt. No. 98-141, July 17, 1999.

"Reply comments of the Consumer Federation of America, Consumers Union and AARP, before the Federal communications Commission, before the Federal Communications Commission, Proposed Transfer of Control SBC and Ameritech, CC Docket" No. 98-141, November 16, 1998.

"Comments and Reply Comments of the Consumer Federation of America, International Communications Association and National Retail Federation Petition," before the Federal Communications Commission, In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Consumer Federation of America, International Communications Association and National Retail Federation Petition Requesting Amendment of the Commission's Rules Regarding Access Charge Reform and Price Cap Performance Review for Local Exchange Carriers, Federal Communications Commission, CC Docket Nos. 96-262, 94-1, RM9210, October 25, 1998, November 9, 1998.

Letter to William E. Kennard, on behalf of The Consumer Federation of America, in Reciprocal Compensation of Internet Traffic, November 5, 1998.

Preserving Affordable Basic Service Under the '96 Telecom Act, to the Federal Communications Commission and the Federal-State Joint Board, October 29, 1998.

"Reply Comments Of The Consumer Federation Of America And Consumers Union," before The Federal Communications Commission. In The Matter Of Deployment Of Wireline Services Offering Advanced Telecommunications Capability, Etc., CC Docket Nos. 98-147, 98-11 98-26, 98-32, 98-78, 98-91, CCB/CPD Docket N. 98-15 RM 9244, October 16, 1998

"The Impact of Telephone Company Megamergers on the Prospect for Competition in Local Markets, before the Federal communications Commission, before the Federal Communications Commission, Proposed Transfer of Control SBC and Ameritech, CC Docket" No. 98-141, October 15, 1998

The Impact of Telephone Company Megamergers on the Prospect for Competition in Local Markets, Comments of The Consumer Federation of America and Consumers Union, before the Federal communications Commission, before the Federal Communications Commission, Proposed Transfer of Control SBC and Ameritech, CC Docket" No. 98-141, October 15, 1998

Letter to William E. Kennard, on Behalf of the Consumer Federation of America, in Re: Pass through of Access Charge Reductions, August 13, 1998.

"Statement of Dr. Mark N. Cooper, on behalf of the Consumer Federation of America," In the Matter of Federal-State Joint Board On Universal Service Forward Looking Mechanisms for High Cost Support for Non-Rural LECs, June 8, 1998.

"Reply Comments of Consumers Union and the Consumer Federation of America, before the Federal Communications Commission," In the Matter of Consumer Federation of America, International Communications Association and National Retail Federation Petition Requesting Amendment of the Commission's Rules Regarding Access

Charge Reform and Price Cap Performance Review for Local Exchange Carriers, Federal Communications Commission, Docket No. RM9210, February 17, 1998

"Statement of Dr. Mark N. Cooper, on Behalf of the Consumer Federation of America," Before the Federal Communications Commission, Re: Cable TV Rates, December 18, 1997.

Letter to William Kennard, on Behalf of The Consumer Federation of America, Re: Long Distance Basic Rates, November 26, 1997.

Letter to William E. Kennard, on behalf of the Consumer Federation of America, Re; Proposed Revision of Maximum Collection Amounts for Schools and Libraries and Rural Health Care Providers, Public Notice, CC Docket No. 96-45; DA 98-872, May 21, 1998.

"Reply Comments of Consumers Union and the Consumer Federation or America," In the Matter of Consumer Federation or America, International Communications Association and National Retail Federation Petition Requesting Amendment of the Commission's Rules Regarding Access Charge Reform and Price Cap Performance Review for Local Exchange Carriers, Federal Communications Commission, Docket No. RM9210, February 17, 1998.

"Reply Comments of the Consumer Federation of America," In the Matter of Application by BellSouth Corporation, BellSouth Telecommunications, Inc., and BellSouth Long Distance, Inc., for Provision of In-Region, InterLATA Services in Louisiana, Federal Communications Commission, CC Docket No. 97-231, December 19, 1997

Letter to Reed Hundt, on Behalf of the Consumer Federation of America, Re: CC Docket NO. 92-237: Carrier Identification Codes, October 15, 1997

"Statement of Dr. Mark N. Cooper, on Behalf of the Consumer Federation of America," before the Federal Communications Commission, In Re: Petition of Consumers Union and the Consumer Federation of America to Update Cable TV Regulation and Freeze Existing Cable Television Rates, MM Docket Nos. 92-264, 92-265, 92-266, September 22, 1997

"Reply Comments of Consumer Federation of America and Consumer Action on Remand Issues in the Pay Telephone Proceeding," Federal Communications Commission, In the Matter of Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996, CC Docket NO. 96-128, DA 97-1673 (Remand), September 9, 1997.

Letter to Reed Hundt, Consumer Federation of America, Re: Ameritech 271 Application for Michigan, CC Docket No. 97-137, August 11, 1997.

"Statement of Dr. Mark N. Cooper," Federal Communications Commission, Hearing on Cable Television Competition and Rates, December 18, 1997

"Reply Comments of the Consumer Federation of America," In the Matter of Application by BellSouth Corporation, et. al. For Provision of In-Region, InterLATA Services in

South Carolina, Federal Communications Commission, CC Docket No. 97-208, November 14, 1997

"Statement of Dr. Mark N. Cooper," In Re: Petition of Consumers Union and the Consumer Federation of America to Update Cable TV Regulation and Freeze Existing Cable Television Rates, Federal Communications Commission, September 22, 1997.

"The Telecommunication Act of 1996: The Impact on Separations of Universal Service and Access Charge Reform," before the Federal State Joint Board on Separations, February 27, 1997

"Comments of the Consumer Federation of America," before the Federal Communications Commission In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, August 2, 1996

"In the Matter of Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services," before the Federal Communications Commission, In the Matter of Allocation of Costs Associated with Local Exchange Carrier Provision of Video Programming Services, CC Docket No. 96-122, June 12, 1996

"Comments of Consumer Federation of America," before the Federal Communications Commission, In the Matter of the Local Competition Provisions of the Telecommunications Act of 1996, 1996

"Statement of Dr. Mark N. Cooper," Before the Federal Communications Commission, In Re: Review of the Commission's Regulations Governing Television Broadcasting, MM Docket No. 91-221, July 10, 1995

"Cost Analysis and Cost Recovery on the Information Superhighway, Evidence of Dr. Mark N. Cooper on behalf of the National Anti-poverty Organization and Federation Nationale des Associations Consumateurs du Quebec," before the Canadian Radio-Television and Telecommunications Commission, Review of Regulatory Framework, Public Notice CRTC 92-78, April 13, 1995

"Affidavit in Support of the Petition for Relief of the Center for Media Education, Consumer Federation of America, the United Church of Christ, the National Association for the Advancement of Colored People, and the National Council of La Raza, May 24, 1994

"Response of the Consumer Federation of America and the Center for Media Education to Bell Atlantic's Request for an Expedited Waiver Relating to Out-of-Region Interexchange Services and Satellite Programming Transport," Department of Justice, In Re: United States of America v. Western Electric Company, Inc., and American Telephone and Telegraph Company, Civil No. 82-0192 (HHG), March 8, 1994

"Petition to Deny: Center For Media Education and Consumer Federation of America," before the Federal Communications Commission, In the Matter of the Application of U.S. West Communications Inc., for Authority Under Section 214 of the Communications Act of 1934, as Amended, to Construct, Operate Own and Maintain Facilities and

Equipment to Provide Video Dialtone Service in Portions of the Denver, Portland, Oregon, and Minneapolis -St. Paul Service Area, March 4, 1994

"Comments of the Consumer Federation of America," before the Federal Communications Commission, In the Matter of Implementation of Sections of the Cable Television Consumer Protection Act of 1992, MM Docket No. 92-266, January 27, 1993

"Evidence of Mark N. Cooper: Submission of the National Anti-poverty Organization," before the Canadian Radio-Television and Telecommunications Commission, Review of Regulatory Framework, Public Notice CRTC 92-78, April 13, 1992

"Comment of Mark N. Cooper on Behalf of the Center for Science in the Public Interest," before the Food and Drug Administration, In the Matter of Regulatory Impact Analysis of the Proposed Rule to Amend the food and Labeling Regulations, Docket No. 91N-0219, February 25, 1992

"Comment of Mark N. Cooper on Behalf of the Center for Science in the Public Interest," before the U.S. Department of Agriculture, In the Matter of Preliminary Regulatory Impact Analysis of the Proposed Regulations for Nutrition Labeling of Meat and Poultry, Docket No. 91-006, February 25, 1992

"Comment of the Consumer Federation," before the Federal Communications Commission, In the Matter of Rules and Policies Regarding Calling Number Identification Service, CC Docket No. 91-281, January 1992 "Comments of the Consumer Energy Council of America Research Foundation," before the Environmental Protection Agency, 40 CFR Part 73, December 12, 1991

"Comments of the Consumer Energy Council of America Research Foundation," before the Environmental Protection Agency, 40 CFR Part 73, July 5, 1991

"Affidavit of Dr. Mark N. Cooper on Abuse of the Monopoly Franchise by the Regional Bell Operating Companies in the Marketing of Optional Services," United States District Court for the District of Columbia, United States of America v. Western Electric Company and American Telephone and Telegraph Company, C.A. No. 82-0192, October 17, 1990

"Health Claims in Food Labeling and Advertising: Reexamining the Public Interest After Two Decades of Dispute," Food and Drug Administration, Food Labeling: Advanced Notice of Proposed Rule making, January 5, 1990

"Comments of the Consumer Federation of America, in the Matter of Medicare and Medicaid Programs: Fraud and Abuse OIG Anti-Kickback Provisions, 42 CFR Part 1001, Department of Health and Human Services, March 24, 1989

"Comments of the Consumer Federation of America in the Matter of Railroad Cost Recovery Procedures -- Productivity Adjustment, Ex Parte No. 290 (Sub-No. 4), Interstate Commerce Commission, December 16, 1988

"Answer of the Consumer Federation of America to the Petition of International Flight Attendants," U.S. Department of Transportation, Docket N. 45792, September 20, 1988

"Joint Comments of the Consumer Federation of America and the Environmental Action Foundation," Federal Energy Regulatory Commission, Dockets Nos. RM88-4, 5,6-000, July 18, 1988

"Comments of the Consumer Federation of America in Opposition to the Request to Reopen and Set Aside Consent Order," Federal Trade Commission, Docket No. 9033, July 5, 1988

"Comments of the Consumer Federation of America on the Initiation of National Security Investigations of Imports of Crude Oil and Refined Petroleum Products," Notice of Investigation Under Section 232 of the Trade Expansion Act of 1962, U.S. Department of Commerce, January 28, 1988

"Policies and Rules Concerning Dominant Carriers: The FCC's Price Cap Proposal," Federal Communications Commission, CC. Docket No. 87-313, October 19, 1987

"On Behalf of the Consumers' Association of Canada," Re: CRTC Telecomm Public Notice 187-15, Bell Canada and British Columbia Telephone Company: Rate Rebalancing and Revenue Settlement Issue, Before the Canadian Radio-Television Commission, August 21, 1987

"Comments of the Consumer Federation of America on the Department of Energy's Study of the Impact of Falling Oil Prices on Crude Oil Production and Refining Capacity in the United States, U.S. Department of Energy, November 30, 1986

"Comments of the Consumer Federation of America on the Notice of Proposed Rule making Issued May 30, 1985," before the Federal Energy Regulatory Commission, Docket

No. RM85-1-000 (Part A-D), July 15, 1985

"Comments of the Consumer Federation of America and U.S. Public Interest Research Group, in the Matter of MTS and WATS Market Structure and Amendment of Part 67 of the Commission's Rules and Establishment of a Joint Board" Before the Federal Communications Commission, CC Docket Nos. 78-72 and 80-286, April 26, 1985

"On Behalf of the California Human Development Corporation, et al., v. Raymond L. Donovan, Secretary, U.S. Department of Labor," United States District Court for the District of Columbia, Case No. 83-3008, March 20, 1984

"Utility Fuels, Inc. v. Burlington Northern Railroad Co., Fort Worth and Denver Ry. Co, and Atchison, Topeka and Santa Fe Ry. Co, before the Interstate Commerce Commission, Docket No. 39002, December 16. 1983, on Behalf of Utility Fuels, Inc.

"In the Matter of the Petition of the State of Michigan Concerning the Effects of Certain Federal Decisions on Local Telephone Service," before the Federal Communications Commission, CC Docket No. 83-788, September 26, 1983

"In the Matter of Coal Rate Guidelines -- Nationwide, ExParte No. 347 (Sub No. 1)," before the Interstate Commerce Commission, July 28, 1983

"Federal Energy Conservation Programs," before the United States Environmental Protection Agency, July 14, 1981

"Building Energy Performance Standards," before the Department of Energy, March 27, 1980

"Comment on the Incremental Pricing Provisions of the Natural Gas Policy Act," before the Federal Energy Regulatory Commission, Docket No. RM 80-10

FEDERAL CONGRESSIONAL

Testimony of Dr. Mark Cooper on Is There Life After *Trinko* and *Credit Suisse?*

The Role of Antitrust in Regulated Industries, Subcommittee on Courts and Competition Policy Committee on the Judiciary, U.S. House of Representatives, June 15, 2010

Testimony of Dr. Mark Cooper, Senior Fellow for Economic Analysis

Institute for Energy and the Environment, Vermont Law School, on 'Economic Advisability of Increasing Loan Guarantees for the Construction of Nuclear Power Plants," *Domestic Policy Subcommittee, Committee on Oversight and Government Reform, U.S. House of Representatives,* April 20, 2010

Testimony of Dr. Mark Cooper, on behalf of Consumer Federation of America, Free Press Consumers Union before the Commerce Committee, U.S. Senate regarding "Consumers, Competition and Consolidation in the Video Broadband Market," March 11, 2010

Dr. Mark Cooper on behalf of Consumer Federation of America, Free Press, Consumers Union before the, U.S. House of Representatives, Committee on the Judiciary, Subcommittee on Antitrust, Competition Policy and Consumer Rights Regarding "Competition in the Media and Entertainment Distribution Market," February 25, 2010

Dr. Mark Cooper, on behalf of Consumer Federation of America, Free Press, Consumers Union before the U.S. House of Representatives, Subcommittee on Communications,

Technology, and the Internet of the Committee on Energy and Commerce regarding "An Examination of the Proposed Combination of Comcast and NBC Universal," February 4, 2010

Dr. Mark Cooper, on behalf of Consumer Federation of America, Free Press, Consumers Union before the Senate Subcommittee on Antitrust, Competition Policy and Consumer Rights Judiciary Committee on "The Comcast /NBC Universal Merger: What Does the Future Hold for Competition and Consumers?", February 4, 2010

Testimony of Dr. Mark Cooper "Too Big to Fail? The Role of Antitrust Law in Government-Funded Consolidation in the Banking Industry," Subcommittee on Courts and Competition Policy, Committee on the Judiciary, United States House of Representatives, March 17, 2009

"Excessive Speculation In Energy Commodities," Agriculture Committee, United States House of Representatives, July 10, 2008

"Oversight of Energy Markets and Oil Futures Contract," Joint Hearing of the Senate Appropriations Subcommittee on Financial Services and General Government and The and the Committee on Agriculture, Nutrition and Forestry United States Senate, June 17, 2008

"Energy Market Manipulation and Federal Enforcement Regimes," Committee On Commerce, Science And Transportation, United States Senate, June 3, 2008

"The Financial State of the Airline Industry and the Potential Impact of a Delta/Northwest Merger," Senate Committee on Commerce Science and Transportation, Aviation Subcommittee, May 7, 2008

"Consumer Effects of Retail Gas Prices," before the Judiciary Committee Antitrust Task Force, United States House of Representatives, May 7, 2008

"Pumping up Prices: The Strategic Petroleum Reserve and Record Gas Prices," Select Subcommittee on Energy Independence and Global Warming, United States House of Representative, April 24, 2008

"Federal Trade Commission Reauthorization," Senate Energy and Commerce Committee, September 12, 2007

"Prices at the Pump: Market Failure and the Oil Industry," House Judiciary Committee, May 16, 2007

"Competition and the Future of Digital Music," House Judiciary Committee, Antitrust Task Force, February 28, 2007

"The State of the Airline Industry: The Potential Impact of Airline Mergers and Industry Consolidation," Senate Committee on Commerce, Science and Technology, January 24, 2007

"Vertically Integrated Sports Networks and Cable Companies," Senate Judiciary Committee, December 7, 2006

"Universal Service," House Committee on Energy and Commerce, June 21, 2006

"Price Gouging," Senate Committee on Commerce, Science and Transportation, May 23, 2006

"Gasoline: Supply, Price and Specifications," House Committee on Energy and Commerce, May 10, 2006

"Competition and Convergence," Senate Committee on Commerce, Science and Transportation, March 30. 2006

"Antitrust Should Promote Competition on Top of Well Regulated Infrastructure Platforms," Antitrust Modernization Commission, December 5, 2005

"Video Competition in 2005 – More Competition or New Choices for Consumers," Subcommittee on Antitrust, Competition Policy and Consumer Rights, United States Senate, October 19, 2005

"An Oversight Hearing on Record High Gasoline Prices and Windfall Oil Company Profits," Senate Democratic Policy Committee, September 19, 2005

"Hurricane Katrina's Effect on Gasoline Supply and Prices," Committee on Energy and Commerce, U.S. House of Representative, September 7, 2005

""The Merger Tsunami is Drowning Competition in the Communications Marketplace," House Energy and Commerce Committee, March 2, 2005

"Testimony of Dr. Mark Cooper on Behalf of the Consumer Federation of America on The Digital Transition – What Can We Learn from Berlin, The Licensed-Gatekeeper Model of Spectrum Management is Kaput," Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, U.S. House of Representatives, July 21, 2004.

"Testimony of Mark Cooper on behalf or The Consumer Federation of America and Consumers Union on the Status of the U.S. Refining Industry," Subcommittee on Energy and Air Quality, Committee on Energy, U.S. House of Representatives, July 15, 2004

"Testimony of Dr. Mark N. Cooper on Behalf of the consumer Federation of American and Consumers Union on Environment Regulation in Oil Refining," Environment and Public Works Committee, May 12, 2004

"Testimony Of Dr. Mark Cooper, On Behalf Of Consumer Federation Of America And Consumers Union On Crude Oil: The Source Of Higher Prices? Before The Senate Judiciary Committee, Antitrust, Competition Policy And Consumer Rights Subcommittee, April 7, 2004

"Testimony of Mark Cooper on Cable Market Power in Multichannel Video Program Distribution," Subcommittee on Antitrust, Senate Judiciary Committee, February 11, 2004

"Testimony Of Dr. Mark Cooper, Director Of Research On Gasoline Price Volatility," Senate Commerce Committee, October 9, 2003

"Testimony Of Dr. Mark N. Cooper Director Of Research On Media Ownership," Before The Senate Commerce Committee, Washington, D. C., October 2, 2003

"Statement of Dr. Mark Cooper on Behalf of the Consumer Federation of America and Consumers Union on The Federal Response to the 2003 Blackout: Time to Put the Public Interest First," Subcommittee on Oversight of Government Management, The Federal Workforce and the District of Columbia, Committee on Government Affairs, United States Senate, September 10, 2003

"From Cheap Seats To Expensive Products, Anticompetitive Practices From The Old Economy Can Rob Consumers Of The Benefits Of The Internet Statement of Dr. Mark Cooper on behalf of The Consumer Federation Of America," before The Subcommittee On Commerce, Trade And Consumer Protection, July 18, 2002

"The Financial Status of the Airline Industry," Committee on Commerce, Science and Transportation, United States Senate, September 20, 2001

"Statement Of Dr. Mark Cooper on Electricity Markets: California," Subcommittee On Energy And Air Quality House Energy And Commerce Committee's Subcommittee, March 22, 2001

"Statement of Dr. Mark N. Cooper on Mergers Between Major Airlines: The Anti-Competitive And Anti-Consumer Effects Of The Creation Of A Private Cartel," Subcommittee On Commerce, Trade And Consumer Protection Committee On Energy And Commerce United States House of Representatives, March 21, 2001

"Statement Of Dr. Mark N. Cooper On The Aviation Competition Restoration Act," Committee On Commerce, Science And Transportation, United States Senate March 13, 2001

"Statement Of Dr. Mark Cooper on Digital Television," Senate Commerce Committee, March 1, 2001

"The Proposed United Airlines-US Airways Merger," Antitrust Committee, United States Senate, June 14, 2000

"Testimony of Dr. Mark N. Cooper on behalf of the Consumer Federation of America and Consumers Union," Electricity Restructuring at the Federal Level, Subcommittee on Energy and Power, U.S. House of Representatives, October 6, 1999

"Testimony of Dr. Mark N. Cooper on Electricity Competition: Consumer Protection Issues," before the Subcommittee on Energy and Power, Energy and Commerce Committee, United States House of Representatives, May 26, 1999

"Testimony of Dr. Mark N. Cooper on The Regulation of Public Utility Holding Companies," Committee on Banking, Housing, and Urban Affairs, United States Senate, April 29, 1997

"Testimony of Dr. Mark N. Cooper on Behalf of the Consumer Federation of America and the Environmental Action Foundation on Exempting Registered Holding Companies from the Public Utility Holding Company Act for Diversification into Telecommunications," Committee on Energy and Commerce, United States House of Representatives, July 29, 1994

"Testimony of Dr. Mark N. Cooper on Universal Service and Local Competition and S. 1822," before the Commerce Committee, United States Senate, May 17, 1994

"Testimony of Dr. Mark N. Cooper Director of Research of the Consumer Federation of America on H.R. 3636, The National Communications Competition and Information Infrastructure Act of 1993, and H.R. 3626, The Antitrust Reform Act of 1993 and the Communications Reform Act of 1993" before the Subcommittee on Telecommunications and Finance, Committee on Energy and Commerce, United States House of Representatives, February 3, 1994

"Testimony of Dr. Mark N. Cooper on Major Mergers in the Telecommunications Industry," Subcommittee on Antitrust, Monopolies and Business Rights, November 16, 1993

"Testimony of Dr. Mark N. Cooper on Physician Ownership and Referral Arrangements," before the Subcommittee on Oversight, Committee on Ways and Means, October 17, 1991

"Testimony of Dr. Mark N. Cooper on Airline Competition and Consumer Protection," Subcommittee on Aviation, Committee on Public Works and Transportation, U. S. House of Representatives, May 22, 1991

"Testimony of Dr. Mark N. Cooper on Regulatory Reform in the Electric Utility Industry," Subcommittee on Energy and Power Energy and Commerce Committee, United States House of Representatives, May 2, 1991

"Testimony of Dr. Mark N. Cooper on Telephone Consumer Privacy and Advertising Rights," Subcommittee on Telecommunications and Finance, Energy and Commerce Committee, United States House of Representatives, April 24, 1991

"Testimony of Dr. Mark N. Cooper on Regulatory Reform in the Electric Utility Industry," before the Committee on Energy and Natural Resources, U.S. Senate, March 14, 1991

"Testimony of Mark Cooper and Scott Hempling on Electric Utility Policies of the Federal Energy Regulatory Commission," before the Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, U.S. House of Representatives, October 11, 1990

"Testimony of Dr. Mark N. Cooper on Caller Identification," before the Subcommittee on Technology and the Law, Judiciary Committee, U.S. Senate, August 1, 1990

"Testimony of Dr. Mark N. Cooper on Airport Gross Receipts Fees," before the Subcommittee on Economic and Commercial Law, Judiciary Committee, U.S. House of Representatives, June 28, 1990

"Testimony of Dr. Mark N. Cooper on Airport Gross Receipts Fees," before the Subcommittee on Antitrust, Monopolies and Business Rights, Judiciary Committee, U.S. Senate, April 24, 1990

"Testimony of Dr. Mark N. Cooper on Independent Power Producers and the Public Utility Holding Company Act of 1935" Subcommittee on Energy and Power, Committee on Energy and Commerce, United States House of Representatives, September 14, 1989

"Testimony of Dr. Mark N. Cooper on Acid Rain Legislation, Subcommittee on Energy and Power, Committee on Energy and Commerce, United States House of Representatives, September 7, 1989

"Testimony of Gene Kimmelman and Dr. Mark N. Cooper on Competitive Issues in the Cable Television Industry, before the Subcommittee on Antitrust, Monopolies and Business Rights, Judiciary Committee, United States Senate, April 12, 1989

"Testimony of Peggy Miller and Dr. Mark N. Cooper, on the Savings and Loan Crisis," before the Ways and Means Committee, United States House of Representatives, March 9, 1989

"Testimony of Dr. Mark N. Cooper on The Ethics in Patient Referrals Act of 1989 and Physician Self-Referral," before the subcommittee on Health, Committee on Ways and Means, United States House of Representatives, March 2, 1989

"Joint Testimony of the Consumer Federation of American and the Citizen Labor Energy Coalition on Bypass of Natural Gas Local Distribution Companies," before the Subcommittee on Energy Regulation and Conservation, Committee, on Energy and Natural Resources, United States House of Representatives, September 29, 1988

"Independent Power Producers and the Public Utility Holding Company Act of 1935, Subcommittee on Energy and Power of the Energy and Commerce Committee, U.S. House of Representatives, September 14, 1988

"Physician Self-Dealing and Quality Control in Clinical Laboratory Testing," Energy and Commerce Committee, U.S. House of Representatives, July 6, 1988

"Joint Testimony of the Consumer Federation of American and the Citizen Labor Energy Coalition on Bypass of Natural Gas Local Distribution Companies," before the Subcommittee on Energy and Power, Energy and Commerce Committee, United States House of Representatives, May 25, 1988

"Administrative Modifications in the Implementation of the Public Utility Regulatory Act of 1978," before the Committee on Energy and Natural Resources, U.S. Senate, February 2, 1988

"Excess Deferred Taxes," before the Subcommittee on Select Revenue Measures, Ways and Means Committee, U.S. House of Representatives, December 14, 1987

"Electric Utility Regulation," Testimony before the Subcommittee on Energy and Power of the Energy and Commerce Committee, U.S. House of Representatives, September 23, 1987

"Bank Sale of Insurance," Banking Committee, U.S. Senate, July 30, 1987

"Consumer Impacts of Airline Bankruptcies," before the Subcommittee on Aviation, Committee on Public Works and Transportation, U.S. House of Representatives, June 10, 1987

"Oversight of the Rail Industry and the Staggers Act," before the Subcommittee on Surface Transportation, Committee on Commerce, Science and Transportation, June 9, 1987

"Oil Industry Taxes," before the Committee on Finance, U.S. Senate, June 5, 1987

"Comprehensive Natural Gas Legislation," before the Subcommittee on Regulation, Committee on Energy and Natural Resources, U.S. Senate, May 20, 1987

"Federal Policy Toward the Insurance Industry," before the Judiciary Committee, February 18, 1987.

"Railroad Antimonopoly Act of 1986," before the Subcommittee on Commerce, Transportation and Tourism of the Energy and Commerce Committee, U.S. House of Representatives, June 5, 1986

"Comprehensive Natural Gas Legislation," before the Subcommittee on Regulation, Energy and Natural Resources Committee, U.S. Senate, May 20, 1986

"Electric Utility Regulation," before the Subcommittee on Energy Conservation and Power, Energy and Commerce Committee, U.S. House of Representatives, March 20, 1986

"Oil Import Fees," Committee on Energy and Natural Resources, U.S. Senate, March 20, 1986

"Implementation of Staggers Rail Act or 1980," Subcommittee on Commerce, Transportation and Tourism, Energy and Commerce Committee, U.S. House of Representatives, March 13, 1986

"Implementation of the Staggers Rail Act of 1980," before the Subcommittee on Surface Transportation of the Committee on Commerce, Science and Transportation, U.S. Senate, November 4, 1985

"Recent Developments in the Natural Gas Industry," before the Subcommittee on Energy Regulation and Conservation of the Energy and Natural Resource Committee, U.S. Senate, July 11, 1985

"The Consumer Impact of the Proposed Norfolk Southern/Conrail Merger," before the Subcommittee on Commerce, Transportation and Tourism of the Energy and Commerce Committee, U.S. House of Representatives, July 10, 1985

"The Consumer Impact of the Unregulated Railroad Monopoly in Coal Transportation," before the Subcommittee on Monopolies and Commercial Law of the Judiciary Committee, U.S. House of Representatives, June 27, 1975

"The World Energy Outlook," before the Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, United States House of Representatives, April 1, 1985

"Phantom Tax Reform," before the Subcommittee on Energy Conservation and Power of the Committee on Energy and Commerce, U.S. House of Representatives, June 12, 1984

"Legislative Proposals Governing Construction Work In Progress," before the Subcommittee on Energy Regulation of the Energy and Natural Resources Committee, United States Senate, April 12, 1984

"Legislation Affecting Oil Company Mergers," before the Subcommittee on Energy and Mineral Resources of the Committee on Energy and Natural Resources, United States Senate, April 10, 1984

"Legislative Proposals Governing Corporate Mergers and Takeovers," before the Subcommittee on Monopolies and Commercial Law of the Committee on Judiciary, United States House of Representatives, March 23, 1984

"Review of Federal Policies Affecting Energy Conservation and Housing," before the Subcommittee on Housing and Community Development of the Committee on Banking, Finance and Urban Affairs, United States House of Representatives, March 21, 1984

"The Staggers Rail Act of 1980," before the Subcommittee on Commerce, Transportation and Tourism of the Committee on Energy and Commerce, United States House of Representatives, July 27, 1983

"Oversight Hearings on the Staggers Rail Act of 1980," before the Subcommittee on Surface Transportation of the Committee on Commerce, Science and Transportation, United States Senate, July 26-27, 1983

"The Export of Alaskan Crude Oil," before the Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations, United States Senate, July 19, 1984

"Economics of Natural Gas Deregulation," before the Joint Economic Committee, United States Congress, April 15, 1983

"Bills to Amend the Export Administration Act," before the Subcommittee on International Finance and Monetary Policy of the Committee on Banking, Housing and Urban Affairs, United States Senate, April 14, 1983

"Reauthorization of the Export Administration Act," before the Subcommittee on International Economic Policy and Trade of the Committee on Foreign Affairs, United States House of Representatives, April 12, 1983

"Pending Natural Gas Legislation," before the Subcommittee on Fossil and Synthetic Fuels of the Committee on Energy and Commerce, United States House of Representatives, March 22, 1983

"Energy Conservation and Jobs," before the Subcommittee on Energy Conservation and Power of the Committee on Energy and Commerce, United States House of Representatives, March 15, 1983

"Natural Gas Hearings," before the Committee on Energy and Natural Resources, United States Senate, March 10, 1983

"The Impacts of Various Energy Tax Options," before the Subcommittee on Fossil and Synthetic Fuels of the Committee on Energy and Commerce, June 15, 1982

"Various Energy Tax Options," before the Subcommittee on Energy and Agricultural Taxation of the Committee on Finance, United States Senate, June 9, 1982

"Natural Gas Policy and Regulatory Issues," before the Committee on Energy and Natural Resources, United States Senate, March 23, 1982

"The Economic Implications of Natural Gas Deregulation," before the Subcommittee on International Trade, Finance and Security Economics of the Joint Economic Committee, United States Congress, February 18, 1982

"The Implementation of Title I of the Natural Gas Policy Act of 1978," before the Committee on Energy and Natural Resources, United States Senate, November 5, 1981

"State and Local Energy Block Grants," before the Committee on Energy and Natural Resources, United States Senate, October 16, 1981

"The National Home Weatherization Act of 1981," before the Subcommittee on Energy Conservation and Supply of the Committee on Energy and Natural Resources, United States Senate, July 15, 1981

"An Alternative Energy Budget," before the Subcommittee on Energy Conservation and Power of the Energy and Commerce Committee, United States House of Representatives, February 27, 1981

"Institutional Analysis of Policy Options to Promote Energy Conservation in New Buildings," before the Subcommittee on Energy Development and Applications of the Committee

on Science and Technology, United States House of Representatives, September 25, 1980

"Building Energy Performance Standards," before the Subcommittee on Energy Regulation of the Committee on Energy and Natural Resources, United States Senate, June 26, 1980

"Analysis of No. 2 Distillate Prices and Margins with Special Focus on the Department of Energy's Methodology," before the Subcommittee on Environment, Energy and Natural Resources of the Government Operations Committee, United States House of Representatives, February 12, 1980

STATE AND PROVINCE

"Testimony on behalf of the Southern Alliance for Clean Energy," before the Florida Public Service Commission, Docket No. 090009-EI, July 15, 2009

"State Regulators, Commodity Markets, And The Collapse Of Market Fundamentalism, Joint Session of the Consumer Affairs and Gas Committees on "Excessive Speculation in Natural Gas Markets: How To Safeguard Consumers," National Association of Regulatory Utility Commissioners, February 17, 2009

"21st Century Policies to Achieve 21st Century Goals," prepared for Wisconsin Citizens Utility Board, Investigation into the Level of Regulation for Telecommunications Providers Updating Telecommunications Regulation in Wisconsin, PSC Docket 5-TI-1777, March 25, 2008

"Comments of the Consumer Federation of America, Consumers Union, and New York Public Interest Research Group Calling for Review and Denial of the Plan for Merger," In the Matter of Joint Petition of Verizon New York Inc. and MCI for a Declaratory Ruling Disclaiming Jurisdiction Over or in the Alternative, for Approval of Agreement and Plan of Merger, Public Service Commission, State of New York, Case No. 05-C-0237, April 29, 2005

"Rebuttal Testimony of Dr. Mark Cooper on Behalf of AARP," In re: Application of the National School Lunch Program and Income-Based Criterion at or Below 135% of the Federal Poverty Guidelines as Eligibility Criteria for the Lifeline and Link-up Programs, before the Florida Public Service Commission, Docket No. 040604-TL, December 17, 2004

"Direct and Rebuttal Testimony Of Dr Mark N. Cooper On Behalf Of Texas Office Of Public Utility Council," Impairment Analysis Of Local Circuit Switching For The Mass Market, Public Utility Commission Of Texas, Docket No. 28607, February 9, 2004**,** March 19, 2004

"Direct Testimony Of Dr Mark N. Cooper On Behalf Of AARP," Before The Florida Public Service Commission, Docket No. 030867-Tl, 030868-TL, Docket No. 030869-Tl, October 2, 2003

"Affidavit of Dr. Mark Cooper on Behalf of the Wisconsin Citizen Utility Board," Petition of Wisconsin Bell, Inc., for a Section 271 Checklist Proceeding, before the Public Service Commission of Wisconsin, 6720-TI-170, June 10, 2002

"Opposition of the Consumer Federation of America and TURN," In the Matter of the Application of Comcast Business Communications, Inc. (U-5380-C) for Approval of the Change of Control of Comcast Business Communications, Inc., That Will Occur Indirectly as a Result of the Placement of AT&T Broadband and Comcast Corporation Under a New Parent, AT&T Comcast Corporation, In the Matter of the Application of AT&T Broadband Phone of California, LLC (U-5698-C) for Approval of the Change of Control of AT&T Broadband Phone of California, LLC That Will Occur Indirectly as a Result of the Placement of AT&T Broadband and Comcast Corporation Under a New Parent, AT&T Comcast Corporation, Public Utilities Commission Of The State Of California, Application 02-05-010 02-05-011, June 7, 2002

"Protecting the Public Interest Against Monopoly Abuse by Cable Companies: Strategies for Local Franchising Authorities in the AT&T Comcast License Transfer Process, Statement to the City of Boston," May 14, 2002

"Prefiled Testimony Of Dr. Mark N. Cooper On Behalf Of The Virginia Citizen Consumers Council," In The Matter Of Application Of Virginia Electric And Power Company For Approval Of A Functional Separation Plan, Virginia State Corporation Commission, Case No. Pue000584, August 24, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Public Service Company of Oklahoma To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00096, May 18, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Oklahoma Gas and Electric Company To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00095, May 18, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G.

Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Arkla, A Division of Reliant Energy Resources Corporation To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00094, May 18, 2001

"Direct Testimony Of Dr. Mark N. Cooper On Behalf Of The Attorney General Of Oklahoma, Before The Oklahoma Corporation Commission Application Of Ernest G. Johnson, Director Of The Public Utility Division, Oklahoma Corporation Commission, To Require Oklahoma Natural Gas Company To Inform The Commission Regarding Planning Of Energy Procurement Practices And Risk Management Strategies And For A Determination As To Appropriate Methods To Lessen The Impact Of Energy Price Volatility Upon Consumers, Cause No. Pud 2001-00097, May 14, 2001

"Affidavit Of Mark N. Cooper On Behalf Of The Office Of Consumer Advocate," Before The Pennsylvania Public Utility Commission, Consultative Report On Application Of Verizon Pennsylvania Inc., For FCC Authorization To Provide In-Region Interlata Service In Pennsylvania Docket M-00001435, February 10, 2001

"Statement of Dr. Mark N. Cooper before the Governor's Task on Electricity Restructuring," Las Vegas Nevada, November 30, 2000

"Open Access," Committee on State Affairs of the Texas House of Representatives, August 16, 2000

"Prepared Statement Of Dr. Mark N. Cooper, Director Of Research Consumer Federation of America, on *Internet Consumers' Bill of Rights,"* Senate Finance Committee Annapolis, Maryland March 7, 2000

"Prepared Statement Of Dr. Mark N. Cooper, Director Of Research Consumer Federation of America, on *Internet Consumers' Bill of Rights,"* House Commerce and Governmental Matter Committee Annapolis, Maryland February 29, 2000

"Comments Of The Consumer Federation Of America On The Report Of The Expert Review Panel, To The Budget And Fiscal Management Committee, Metropolitan King County Council," October 25, 1999

"Testimony Of Dr. Mark N. Cooper On Behalf Of AARP," In The Matter Of The Commission Ordered Investigation Of Ameritech Ohio Relative To Its Compliance With Certain Provisions Of The Minimum Telephone Service Standards Set Forth In Chapter 4901:1-5, Ohio Administrative Code, October 20, 1999

"Testimony of Dr. Mark N. Cooper on behalf of Residential Customers, In the Matter of the Investigation on the Commission's Own Motion Into all Matters Relating to the Merger of Ameritech Corporation and SBC Communications Inc. before the Indiana Utility Regulatory Commission in Cause NO. 41255, June 22, 1999

"Testimony of Dr. Mark N. Cooper, on behalf of the Pennsylvania Office of Consumer Advocate," before the Pennsylvania Public Utility Commission, In the Matter of the Joint Petition for Global Resolution of Telecommunications Proceedings, Docket Nos. P-00991649, P-oo981648, June 1999

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Pennsylvania Office of Consumer Advocate," before the Pennsylvania Public Utility Commission, In the Matter of the Acquisition of GTE by Bell Atlantic, Docket Nos. A-310200F0002, A-311350F0002, A-310222F0002, A-310291F0003, March 23, 1999

"Testimony of Dr. Mark N. Cooper on Behalf of AARP," In the Matter of the SBC Ameritech Merger, Before The Public Utilities Commission Of Ohio, Case No. 99-938-TP-COI, December 1998

"Preserving Just, Reasonable and Affordable Basic Service Rates," on behalf of the American Association of Retired Persons, before the Florida Public Service Commission, Undocketed Special Project, 980000A-SP, November 13, 1998.

"Telecommunications Service Providers Should Fund Universal Service," Joint Meeting Communications Committee and Ad Hoc Committee on Consumer Affairs, NARUC 110th Annual Convention, November 8, 1998

"Testimony of Dr. Mark N. Cooper on behalf of AARP, In the Matter of the Joint Application for Approval of Reorganization of Illinois Bell Telephone Company d/b/a Ameritech Illinois and Ameritech Illinois Metro, Inc. Into SBC Communications Inc., in Accordance with Section 7-204 of the Public Utility Act, Illinois Commerce Commission, Docket NO. 98-055, October 1998

"Testimony and Supplemental Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General," before the Department of Public Utilities, State of Connecticut, Joint Application of SBC Communications Inc. and Southern New England Telecommunications Corporation for Approval of Change of Control, Docket No. 9802-20, May 7, 1998.

"Affidavit of Mark N. Cooper on Behalf of the Consumer Federation of America," before the Public Utilities Commission of the State of California, Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks, Investigation on the Commission's Own Motion Into Open Access and Network Architecture Development of Dominant Carrier Networks, Order Instituting Rulemaking on the Commission's Own Motion Into Competition for Local Exchange Service, Order Instituting, R. 93-04-003, I.93-04-002, R. 95-04-043, R.85-04-044. June 1998.

"Stonewalling Local Competition, Consumer Federation of America," and Testimony of Dr. Mark N. Cooper on behalf of Citizen Action before the Board of Public Utilities, In the Matter of the Board's Investigation Regarding the Status of Local Exchange Competition in New Jersey (Docket No. TX98010010), March 23, 1998.

"Direct Testimony of Mark Cooper on Behalf of Residential Consumers," In the matter of the Investigation on the Commission's own motion into any and all matters relating to access charge reform including, but not limited to high cost or Universal Service funding mechanisms relative to telephone and telecommunications services within the state of Indiana pursuant to IC-8-1-2-51, 58, 59, 69; 8-1-2.6 Et Sec., and other related state statues, as well as the Federal Telecommunications Act of 1996 (47 U.S.C.) Sec. 151, Et. Sec., before the Indiana Utility Regulatory Commission, April 14, 1998

"Affidavit of Mark N. Cooper on Behalf of the Texas Office of Public Utility Counsel," In the matter of Application of SBC. Communications Inc., Southwestern Bell Telephone Company Service Inc., d/b/a Southwestern Bell Long Distance, for Provision of In-Region InterLATA Service Texas, Public Utility Commission of Texas, Project 16251, April 1, 1998

"Comments of The Consumer Federation of America," Re: Case 97-021 - In the Matter of Petition of New York Telephone Company for approve of its statement of generally accepted terms and conditions pursuant to Section 252 of the Telecommunications Act of 1996 and Draft Filing of Petition for InterLATA Entry pursuant to Section 271 of the Telecommunications Act of 1996, before the State of New York, Public Service Commission, March 23, 1998.

"Access Charge Reform and Universal Service: A Primer on Economics, Law and Public Policy," Open Session, before the Washington Transport and Utility Commission, March 17, 1998

"Responses of Dr Mark N. Cooper on behalf of the American Association of Retired persons and the Attorney General of Washington," Public Counsel Section, before the Washington Transport and Utility Commission, March 17, 1998,

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the North Carolina Justice and Community Devilment Center," In the Matter of Establishment of Intrastate Universal Service Support Mechanisms Pursuant to G.S.62-110 (f) and Section 254 of the Telecommunications Act of 1996, before the North Carolina Utilities Commission, Docket No. P-100, SUB 133g, February 16, 1998

Comments of The Consumer Federation of America," Re: Case 97-021 - In the Matter of Petition of New York Telephone Company for approve of its statement of generally accepted terms and conditions pursuant to Section 252 of the Telecommunications Act of 1996 and Draft Filing of Petition for InterLATA Entry pursuant to Section 271 of the Telecommunications Act of 1996, before the State of New York, Public Service Commission, January 6, 1998.

"Testimony of Dr. Mark N. Cooper on Behalf of the Arizona Consumers Council," In the Matter of the Competition in the Provision of Electric Services Throughout the State of Arizona, The Arizona Corporation Commission, January 21, 1998

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Virginia Citizens Consumers Council," Virginia Electric Power Company, Application of Approval of Alternative Regulatory Plan, State Corporation Commission of Virginia, December 15, 1997

"Electric Industry Restructuring: Who Wins? Who Loses? Who Cares?" Hearing on Electric Utility Deregulation, National Association of Attorneys General, November 18, 1997

"Direct Testimony of Dr. Mark N. Cooper in Response to the Petition of Enron Energy Services Power, Inc., for Approval of an Electric Competition and Customer Choice Plan and for Authority Pursuant to Section 2801 (E)(3) of the Public Utility Code to Service as the Provider of Last Resort in the Service Territory of PECO Energy Company on Behalf of the American Association of Retired Persons," Pennsylvania Public Utility Commission v. PECO, Docket No. R-00973953, November 7, 1997.

"Policies to Promote Universal Service and Consumer Protection in the Transition to Competition in the Electric Utility Industry," Regulatory Flexibility Committee, Indiana General Assembly, September 9, 1997

"Reply Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General of Arkansas," In the Matter of Rulemaking Proceeding to Establish Rules and Procedures Necessary to Implement the Arkansas Universal Service Fund, Arkansas Public Service Commission, Docket No. 97-041-R, July 21, 1997

"Statement of Dr. Mark N. Cooper," In the Matter of the Rulemaking by the Oklahoma Corporation Commission to Amend and Establish Certain Rules Regarding the Oklahoma Universal Service Fund, Cause No. RM 970000022.

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Alliance for South Carolina's Children," In Re: Intrastate Universal Service Fund, before the Public Service Commission of South Carolina, Docket NO. 97-239-C, July 21, 1997

"Direct Testimony of Dr. Mark N. Cooper on Behalf of Kentucky Youth Advocate, Inc.," In the Matter of Inquiry into Universal Service and Funding Issues, before the Public Service Commission Commonwealth of Kentucky, Administrative Case NO. 360, July 11, 1997

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Office of Public Utility Counsel, Application of Southwestern Bell Telephone Company for Non-Rate Affecting Changes in General Exchange Tariff, Section 23, Pursuant to PURA95 s.3.53 (D), before the Public Utility Commission of Texas, July 10, 1997

"Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," Application of Pennsylvania Power and Light Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code, Pennsylvania Public Utility Commission, Docket No. R-00973954, July 2, 1997

"Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," Application of PECO Company for Approval of its Restructuring Plan

Under Section 2806 of the Public Utility Code, Pennsylvania Public Utility Commission, June 20, 1997

"Initial Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General of Arkansas," In the Matter of Rulemaking Proceeding to Establish Rules and Procedures Necessary to Implement the Arkansas Universal Service Fund, Arkansas Public Service Commission, Docket No. 97-041-R, June 16, 1997

"A New Paradigm for Consumer Protection," National Association of Attorney's General, 1997 Spring Consumer Protection Seminar, April 18, 1997.

"Statement of Dr Mark N. Cooper," Project on Industry Restructuring, Public Utility Commission of Texas, Project No. 15000, May 28, 1996

"Direct Testimony of Dr. Mark N. Cooper Submitted on behalf of The American Association of Retired Persons, before the Public Service Commission, State of New York, In the Matter of Competitive Opportunities Case 94-E-0952 New York State Electric and Gas Co. 96-E-0891; Rochester Gas and Electric Corp. 96-E-0898 Consolidated Edison Company of New York, Inc. 96-E-0897

"Direct Testimony of Dr. Mark N. Cooper on Behalf of Office of Consumer Advocate," before the Pennsylvania Public Utility Commission, Pennsylvania Public Utility Commission Bureau of Consumer Services v. Operator Communications, Inc. D/b/a Oncor Communications, Docket No. C-00946417, May 2, 1997

"Direct Testimony of Dr. Mark N. Cooper, on Behalf of New York Citizens Utility Board, the Consumer Federation of America, the American Association of Retired Persons, Consumers Union, Mr. Mark Green, Ms. Catherine Abate, the Long Island Consumer Energy Project," before the Public Service Commission, State of New York, Proceeding on Motion of the Commission as the Rates, Charges, Rules and Regulations of New York Telephone Company, NYNEX Corporation and Bell Atlantic Corporation for a Declaratory Ruling that the Commission Lacks Jurisdiction to Investigate and Approve a Proposed Merger Between NYNEX and a Subsidiary of Bell Atlantic, or, in the Alternative, for Approval of the Merger, Case 96-c-603, November 25, 1996

"Consumer Protection Under Price Cap Regulation: A Comparison of U.S. Practices and Canadian Company Proposals," before the CRTC, Price Cap Regulation and Related Matters, Telecom Public Notice CRTC, 96-8, on behalf of Federation Nationale des Associations de Consommateurs du Quebec and the National Anti-Poverty Organization, August 19, 1996

"Responses of Dr. Mark N. Cooper on Behalf of the Attorney General of Oklahoma," In the Matter of the Rulemaking by the Oklahoma Corporation Commission to Establish Rules and Regulations Concerning Universal Service, Cause NO. RM 96000015, May 29, 1996

"Statement of Dr. Mark N. Cooper on Behalf of the Attorney General of Oklahoma," In the Matter of the Oklahoma Corporation Commission to Establish Rules and Regulations Concerning Pay Telephones, Cause NO. RM 96000013, May 1996

"Statement of Dr. Mark N. Cooper on Behalf of the Attorney General of Oklahoma," In the Matter of An Inquiry by the Oklahoma Corporation Commission into Alternative Forms of Regulation Concerning Telecommunications Service, Cause NO. RM 950000404

"Statement of Dr. Mark N. Cooper to the System Benefits Workshop," Project on Industry Restructuring, Project No. 15000, before the Public Utility Commission of Texas, May 28, 1996

"Remarks of Dr. Mark N. Cooper, Panel o n Service Quality from the Consumer Perspective," NARUC Winter Meetings, Washington, D.C., February 26, 1996

"Attorney General's Comments," Before the Arkansas Public Service Commission, In the Matter of the Non-Traffic Sensitive Elements of Intrastate Access Charges and Carrier Common Line and Universal Service Fund Tariffs of the Local Exchange Companies, Docket NO. 86-159-U, November 14, 1995

"Reply Comments and Proposed Rules of the Oklahoma Attorney General," Before the Corporation Commission of the State of Oklahoma, In the Matter of the Rulemaking of the Oklahoma Corporation Commission to Establish Rules and Regulations for Local Competition in the Telecommunications Market, Cause No. RM 950000019, October 25, 1995

"Remarks of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons to the Members of the Executive Committee," Indiana Utility Regulatory Commission, in the Matter of the Investigation on the Commission's Own Motion into Any and All Matters Relating to Local Telephone Exchange Competition Within the State of Indiana, Cause No. 39983, September 28, 1995

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Office of Public Utility Counsel," before the Public Utility Commission of Texas, Petition of MCI Telecommunications Corporation for an Investigation of the Practices of Southwestern Bell Telephone Company Regarding the 713 Numbering Plan Area and Request for a Cease and Desist Order Against Southwestern Bell Telephone Company, SOAH Docket No. 473-95-1003, September 22, 1995

"Rebuttal Testimony of Dr. Mark N. Cooper on Behalf of the Office of the Attorney General State of Arkansas," Before the Arkansas Public Service Commission, In the Matter of an Earnings Review of GTE Arkansas Incorporated, Docket NO. 94-301-U, August 29, 1995

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Office of Public Utility Counsel," before the Public Utility Commission of Texas, Petition of MCI Telecommunications Corporation for an Investigation of the Practices of Southwestern Bell Telephone Company Regarding the 214 Numbering Plan Area and Request for a Cease and

Desist Order Against Southwestern Bell Telephone Company, Docket NO. 14447, August 28, 1995

"Direct Testimony of Mark N. Cooper On Behalf of the Office of the People's Counsel of the District of Columbia," Before the Public Service Commission of the District of Columbia, In the Matter of Investigation Into the Impact of the AT&T Divestiture and Decisions of the Federal Communications Commission on the Chesapeake and Potomac Telephone Company's Jurisdictional Rates, July 14, 1995

"Comments of Consumer Action and the Consumer Federation of America," Before the Public Utilities Commission of California, Order Instituting Rulemaking on the Commission's Own Motion into competition for Local Exchange Service, Docket Nos. R. 95-04-043 and I. 95-04-044, May 23, 1995

"Testimony of Dr. Mark N. Cooper on Behalf of the Arkansas Attorney General," before the Arkansas Public Service Commission, In the Matter of an Earnings Review of Southwestern Bell Telephone Company, Docket NO. 92-260-U, April 21, 1995

"Promoting Competition and Ensuring Consumer Protection on the Information Superhighway, Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons and the Consumer Federation of America on Proposed Revisions of Chapter 364," Committee on Commerce and Economic Opportunities, Florida Senate, April 4, 1995

"Direct Testimony and Exhibits of Dr. Mark N. cooper on Behalf of the Division of consumer Advocacy," In the Matter of Public Utilities Commission Instituting a Proceeding on Communications, Including an Investigation of the Communications Infrastructure in Hawaii, docket No. 7701, March 24, 1995

"Promoting Competition and Ensuring Consumer Protection on the Information Superhighway, Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons and the Consumer Federation of America on Proposed Revisions of Chapter 364," Florida House of Representative, March 22, 1995

"Prepared Testimony of Dr. Mark N. Cooper on Behalf of the Office of the Attorney General State of Arkansas," Before the Arkansas Public Service Commission, In the Matter of an Earnings Review of GTE Arkansas Incorporated, Docket NO. 94-301-U, March 17, 1995

"Statement of Dr. Mark N. Cooper," DPUC Investigation into The Southern New England Cost of Providing Service, Docket No. 94-10-01, January 31, 1995

"Statement of Dr. Mark N. Cooper," DPUC Exploration of Universal Service Policy Options, Docket No. 94-07-08, November 30, 1994

"Statement of Dr. Mark N. Cooper," DPUC Investigation of Local Service Options, including Basic Telecommunications Service Policy Issues and the Definition of Basic Telecommunications Service, Docket No. 94-07-07, November 15, 1994

"Testimony of Dr. Mark N. Cooper on Behalf of Attorney General of the Commonwealth of Kentucky, Utility and Rate Intervention Division, before the Public Service Commission, Commonwealth of Kentucky, Case No. 94-121, August 29, 1994

"Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," before the Public Utilities Commission of Ohio, In the Matter of the Application of the Ohio Bell Telephone Company for Approval of an Alternative Form of Regulation and In the Matter of the Complaint of the Office of Consumers' Counsel, v. Ohio Bell Telephone Company, Relative to the Alleged Unjust and Unreasonable Rates and Charges, Case Nos. 93-487-TP-ALT, 93-576-TP-CSS, May 5, 1994

"Reply Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General of Arkansas," before the Arkansas Public Service Commission, in the Matter of the Consideration of Expanded Calling Scopes and the Appropriate NTS Allocation and Return on Investments for the Arkansas Carrier Common Line Pool, Docket No. 93125-U, May 4, 1994

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General of Arkansas," before the Arkansas Public Service Commission, in the Matter of the Consideration of Expanded Calling Scopes and the Appropriate NTS Allocation and Return on Investments for the Arkansas Carrier Common Line Pool, Docket No. 93125-U, April 22, 1994

"Comments of Dr. Mark N. Cooper on Behalf of Consumers Union, Southwest Regional Office, before the Public Utility Commission of Texas, Request for Comments on the Method by which Local Exchange Services are Priced, Project No. 12771, April 18, 1994

"Comments of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," Before the Tennessee Public Service Commission, Inquiry for Telecommunications Rule making Regarding Competition in the Local Exchange, Docket No. 94-00184, March 15, 1994

"Rebuttal Testimony of Dr. Mark N. Cooper on Behalf of the Virginia Citizens Consumer Council, Inc., before the State Corporation Commission at Richmond, Commonwealth of Virginia, In the Matter of Evaluating Investigating the Telephone Regulatory Case No. PUC930036 Methods Pursuant to Virginia Code S 56-235.5, March 15, 1994

"Testimony of Dr. Mark N. Cooper on Behalf of the Virginia Citizens Consumer Council, Inc., before the State Corporation Commission at Richmond, Commonwealth of Virginia, In the Matter of Evaluating Investigating the Telephone Regulatory Case No. PUC930036 Methods Pursuant to Virginia Code S 56-235.5, February 8, 1994

"Testimony of Dr. Mark N. Cooper on Behalf of The American Association of Retired Persons, Citizen Action Coalition, Indiana Retired Teachers Association, and United Senior Action, before the Indiana Utility Regulatory Commission, Cause No. 39705, December 17, 1993

"Testimony of Dr. Mark N. Cooper on Behalf of the Virginia Citizens Consumer Council, Inc.," before the State Corporation Commission at Richmond, Commonwealth of Virginia, In the Matter of Evaluating the Experimental Plan for Alternative Regulation of Virginia Telephone Companies, Case No. PUC920029, October 22, 1993

"Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General," before the Arkansas Public Service Commission, In the Matter of An Earnings Review of Southwestern Bell Telephone Company, Docket No. 92-260-U, 93-114-C, August 5, 1993

"Rebuttal Testimony of Dr. Mark N. Cooper on Behalf of the Attorney General," before the Public Service Commission of the State of Missouri, The Staff of the Missouri Public Service Commission vs. Southwestern Bell Telephone and Telegraph Company, Case No. TO-93-192, April 30, 1993

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the Office of Consumer Counsel," before the Public Utilities Commission of the State of Colorado, In the Matter of the Investigatory Docket Concerning Integrated Service Digital Network, Docket No. 92I-592T

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the People's Counsel," before the Florida Public Service Commission, Comprehensive Review of the Revenue Requirement and Rate Stabilization Plan of Southern Bell Telephone and Telegraph Company, Docket No. 900960-TL, November 16, 1992

"Direct Testimony of Dr. Mark N. Cooper on Behalf of the American Association of Retired Persons," before the Florida Public Service Commission, Comprehensive Review of the Revenue Requirement and Rate Stabilization Plan of Southern Bell Telephone and Telegraph Company, Docket No. 900960-TL, November 16, 1992

"Testimony of Dr. Mark N. Cooper" before the Regulatory Flexibility Committee, General Assembly, State of Indiana, August 17, 1992

"Testimony of Dr. Mark N. Cooper On Behalf of the Consumer Advocate," before the Public Service Commission of South Carolina, Petition of the Consumer Advocate for the State of South Carolina to Modify Southern Bell's Call Trace Offering, Docket No. 92-018-C, August 5, 1992

"Telecommunications Infrastructure Hoax," before the Public Service Commission of Colorado, Conference on ISDN for the Rest of Us, April 23, 1992

"Testimony of Dr. Mark N. Cooper on Behalf of the Consumer Federation of America," before the Corporation Commission of the State of Oklahoma, In the Matter of the Corporation Commission's Notice of Inquiry Regarding Telecommunications Standards in Oklahoma, Cause No. PUD 1185, February 28, 1992

"Testimony of Dr. Mark N. Cooper on Behalf of the Consumer Federation of America," before the Georgia Public Service Commission, In the Matter of A Southern Bell Telephone and Telegraph Company Cross-subsidy, Docket No. 3987-U, February 12, 1992

"Testimony of Dr. Mark N. Cooper on Behalf of the Consumer Federation of America," before the Arkansas Public Service Commission, in the Matter of an Inquiry into Alternative Rate of Return Regulation for Local Exchange Companies, Docket No. 91-204-U, February 10, 1992

"Statement on Behalf of the Consumer Federation of America on HB 1076," before the Missouri General Assembly, January 29, 1992

"Testimony on behalf of the American Association of Retired Persons and the Consumer Federation of America," before the Legislative P.C. 391 Study Committee of the Public Service Commission of Tennessee, January 13, 1992

"Direct Testimony on Behalf of the "Consumer Advocate," Public Service Commission State of South Carolina, In the Matter of the Application of Southern Bell Telephone and Telegraph Company for Approval of Revision to its General Subscribers Service Tariff (Caller ID), Docket No. 89-638-C, December 23, 1991

"Comments of the Consumer Federation of America on Proposed Telecommunications Regulation in New Jersey (S36-17/A-5063)," New Jersey State Senate, December 10, 1991

"Comments of the Consumer Federation of America," Before the Public Service Commission, State of Maryland, In the Matter of a Generic Inquiry by the Commission Into the Plans of the Chesapeake and Potomac Telephone Company of Maryland to Modernize the Telecommunications Infrastructure, Case No. 8388, November 7, 1991

"On Behalf of the Office of Consumers Counsel," before the Public Utilities Commission of Ohio, In the Matter of the Application of the Ohio Bell Telephone Company to Revise its Exchange and Network Services Tariff, P.U.C.O. No. 1, to Establish Regulations, Rates, and Charges for Advanced Customer Calling Services in Section 8. The New Feature Associated with the New Service is Caller ID, Case No. 90-467-TP-ATA; In the Matter of the Application of the Ohio Bell Telephone Company to Revise its Exchange and Network Service Tariff, P.U.C.O. No 1, to Establish Regulations, Rates and Charges for Advanced Customer Calling Services in Section 8., The New Feature Associated with the New Service is Automatic Callback, Case No. 90-471-TP-ATA, September 3, 1991

"On Behalf of the American Association of Retired Persons," Before the Senate Select Telecommunications Infrastructure and Technology Committee, 119th Ohio General Assembly, July 3, 1991

"On Behalf of the Cook County State's Attorney," before the Illinois Commerce Commission, In Re: Proposed Establishment of a Custom Calling Service Referred to as Caller ID and Related Custom Service, Docket Nos. 90-0465 and 90-0466, March 29, 1991

"On Behalf of the Vermont Public Interest Research Group," before the Public Service Board In Re: Investigation of New England Telephone and Telegraph Company's Phonesmart Call Management Services, Docket No. 54-04, December 13, 1990

"On Behalf of the Office of Consumer Advocate," before the State of Iowa, Department of Commerce, Utilities Division, In Re: Caller ID and Related Custom Service, Docket No. INU-90-2, December 3, 1990

"On Behalf of the Office of Public Counsel," before the Florida Public Service Commission, In Re: Proposed Tariff Filings by Southern Bell Telephone and Telegraph Company When a Nonpublished Number Can be Disclosed and Introducing Caller ID to Touchstar Service, Docket No. 891194-TI, September 26, 1990

"On Behalf of the Office of Public Advocate," before the Public Service Commission, State of Delaware, In the Matter of: The Application of the Diamond State Telephone Company for Approval of Rules and Rates for a New Service Known as Caller*ID, PSC Docket No. 90-6T, September 17, 1990

"On Behalf of the Maryland People's Counsel," before The Public Service Commission of Maryland, In the Matter of Provision of Caller Identification Service by the Chesapeake and Potomac Company of Maryland, Case No. 8283, August 31, 1990

"On Behalf of the Office of Attorney General," before the Commonwealth of Kentucky, Public Service Commission, In the Matter of the Tariff Filing of GTE South Incorporated to Establish Custom Local Area Signaling Service, Case No. 90-096, August 14, 1990

"On Behalf of the Consumers' Utility Counsel," before the Georgia Public Service Commission Re: Southern Bell Telephone Company's Proposed Tariff Revisions for Authority to Introduce Caller ID, Docket No. 3924-U, May 7, 1990

"Testimony of Dr. Mark N. Cooper on Caller Identification" before the Committee on Constitutional and Administrative Law, House of Delegates, Annapolis, Maryland, February 22, 1990

"On Behalf of the Office of People's Counsel of the District of Columbia," before the Public Service Commission of the District of Columbia in the Matter of the Application of the Chesapeake and Potomac Telephone Company to Offer Return Call and Caller ID within the District of Columbia, Case No. 891, February 9, 1990

"On Behalf of the Office of Consumer Advocate" before the Pennsylvania Public Utility Commission in the Matter of Pennsylvania Public Utility Commission v. The Bell Telephone Company of Pennsylvania, Docket NO. R-891200, May 1989.

"Statement of Dr. Mark N. Cooper, Joint Hearing on the Public Utility Holding Company Act of 1935," Committees on Finance and Technology and Electricity, National Association of Regulatory Utility Commissioners, February 28, 1989

"On Behalf of Manitoba Anti-poverty Organization, the Manitoba Society of Seniors and the Consumers Association of Canada (Manitoba)" before the Public Utilities Board in the Matter of the Request of Manitoba Telephone System for a General Rate Review, February 16, 1989

"On Behalf of the Ohio Consumers Counsel, In the Matter of the Application of GTE MTO Inc. for Authority to Increase and Adjust its Rates and Charges and to Change Regulations and Practices Affecting the Same, Case No. 87-1307-TP- Air," before the Public Utility Commission of Ohio, May 8, 1988

"On Behalf of the Evelyn Soloman, Proceeding on Motion of the Commission as to the Rates, Charges and Regulations of Niagara Mohawk Power Corporation, Case Nos. 29670 and 29671," before the State of New York Public Service Commission, February 16, 1988

"An Economic Perspective - The Status of Competition in the Telecommunications Industry and Its Impact on Taxation Policy," Before the Joint Subcommittee on the Taxation of The Telecommunications Industry, December 8, 1987

"On Behalf of the Office of Consumer Counsel, State of Washington," In the Matter of the Petition of AT&T Communications of Pacific Northwest, Inc. for Classification as a Competitive Telecommunications Company, March 24, 1987

"On Behalf of Manitoba Anti-poverty Organization and the Manitoba Society of Seniors," before the Public Utilities Board in the Matter of the Request of Manitoba Telephone System for a General Rate Review, March 16, 1987

"On Behalf of the Office of Consumers' Counsel, State of Ohio," In the Matter of the Application of the Ohio Bell Telephone Company for Authority to Amend Certain of its Intrastate Tariffs to Increase and Adjust the Rates and Charges and to Change its Regulations and Practices Affecting the Same, Case No. 84-1435-TP-AIR, April 6, 1986

“On Behalf of Manitoba Anti-poverty Organization and Manitoba Society of Seniors," before the Public Utilities Board in the Matter of the Request of Manitoba Telephone System for a General Rate Review, February 6, 1986

"On Behalf of Mississippi Legal Services Coalition, in the Matter of Notice by Mississippi Power and Light of Intent to Change Rates" Before the Mississippi Public Service Commission, April 15, 1985

"On Behalf of the Universal Service Alliance, in the Matter of the Application of New York Telephone Company for Changes in it Rates, Rules, and Regulations for Telephone Service, State of New York Public Service Commission, Case No. 28961, April 1, 1985

"On Behalf of North Carolina Legal Services, in the Matter of Application of Continental Telephone Company of North Carolina for an Adjustment of its Rates and Charges, Before the North Carolina Utilities Commission, Docket No. P-128, Sub 7, February 20, 1985

"On Behalf of the Consumer Advocate in re: Application of Southern Bell Telephone and Telegraph Company for Approval Increases in Certain of Its Intrastate Rates and

Charges," Before the South Carolina Public Service Commission, Docket No. 84-308-c, October 25, 1984

"On Behalf of the Office of the Consumers' Counsel in the Matter of the Commission Investigation into the Implementation of Lifeline Telephone Service by Local Exchange Companies," Before the Public Utilities Commission of Ohio, Case No. 84-734-TP-COI, September 10, 1984

"On Behalf of North Carolina Legal Services Resource Center in the Matter of Application Southern Bell Telephone and Telegraph Company for an Adjustment in its Rates and Charges Applicable to Intra-state Telephone Service in North Carolina," Before the North Carolina Utilities Commission, Docket No. P-55, Sub 834, September 4, 1984

"On Behalf of Mississippi Legal Services Coalition in the Matter of the Citation to Show Cause Why the Mississippi Power and Light Company and Middle South Energy Should not Adhere to the Representation Relied Upon by the Mississippi Public Service Commission in Determining the Need and Economic Justification for Additional Generating Capacity in the Form of A Rehearing on Certification of the Grand Gulf Nuclear Project," Before the Mississippi Public Service Commission, Docket No. U-4387, August 13, 1984

"On Behalf of the Mississippi Legal Services Corporation Re: Notice of Intent to Change Rates of South Central Bell Telephone Company for Its Intrastate Telephone Service in Mississippi Effective January 1, 1984," before the Mississippi Public Service Commission, Docket No. U-4415, January 24, 1984

"The Impact of Rising Energy Prices on the Low Income Population of the Nation, the South, and the Gulf Coast Region," before the Mississippi Public Service Commission, Docket No. U4224, November 1982

"In the Matter of the Joint Investigation of the Public Service Commission and the Maryland Energy Office of the Implementation by Public Utility Companies Serving Maryland Residents of the Residential Conservation Service Plan," before the Public Service Commission of the State of Maryland, October 12, 1982

"The Impact of Rising Utility Rates on he Budgets of Low Income Households in the Region of the United States Served by the Mississippi Power Company and South Central Bell Telephone Company," before the Chancery Court of Forrest County, Mississippi, October 6, 1982

"The Impact of Rising Energy Prices on the Low Income Population of the Nation, the South and the Gulf Coast Region," before the Mississippi Public Service Commission, Docket No. U-4190, August 1982