Economics of Nuclear Power

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Decisions on New Nuclear Build are Driven by Economics

✓ Uncertainties make cost confidence difficult

- Vendor estimates remain soft, fluid
- Designs not yet complete, some not certified
- Engineering/Procurement/Construction contract pricing will include “fixed”, “firm”, and “target” categories
- Commercial risk-sharing provisions not yet established
- Commodity cost volatility continues
- Construction & regulatory schedules unproven in U.S.
- Financing/credit environment in flux
- Pending change in U.S. administration

Current industry overnight cost estimates range from $2400/kw - $4500/kw … and rising

Time & Action Will Reduce Level of Uncertainty

- ✓ Decision process is a series of decisions, not a single commitment
  - – Decide to file a Construction/Operating License application
  - – Decide to procure long-lead materials
  - – Decide to build
  - • Individual milestones move the process forward in a more manageable, deliberate way
- ✓ A new administration will take office, and act on its energy policy → providing clarification
- ✓ The first movers will move → sharing lessons learned
- ✓ Requires a quantitative risk assessment process
  - • Comprehensive, balanced and integrated view of risks
  - • Risk mitigation strategies developed to address the critical risks
- ✓ Requires a long view

From a Long View, New Nuclear Looks Good

- ✓ Despite capital cost, cost of electricity generated by new nuclear can be competitive in nearly any likely scenario
  - Brattle Group study for State of Connecticut*:

	Nuclear	SCPC	SCPC w/ CCS	IGCC	IGCC w/ CCS	Gas CC	Gas CC w/ CCS
Capital Cost ($/kW)	4,038	2,214	4,037	2,567	3,387	869	1,558
Levelized Cost ($/MWh)	83.4	86.5	141.9	92.2	124.5	76	103.1

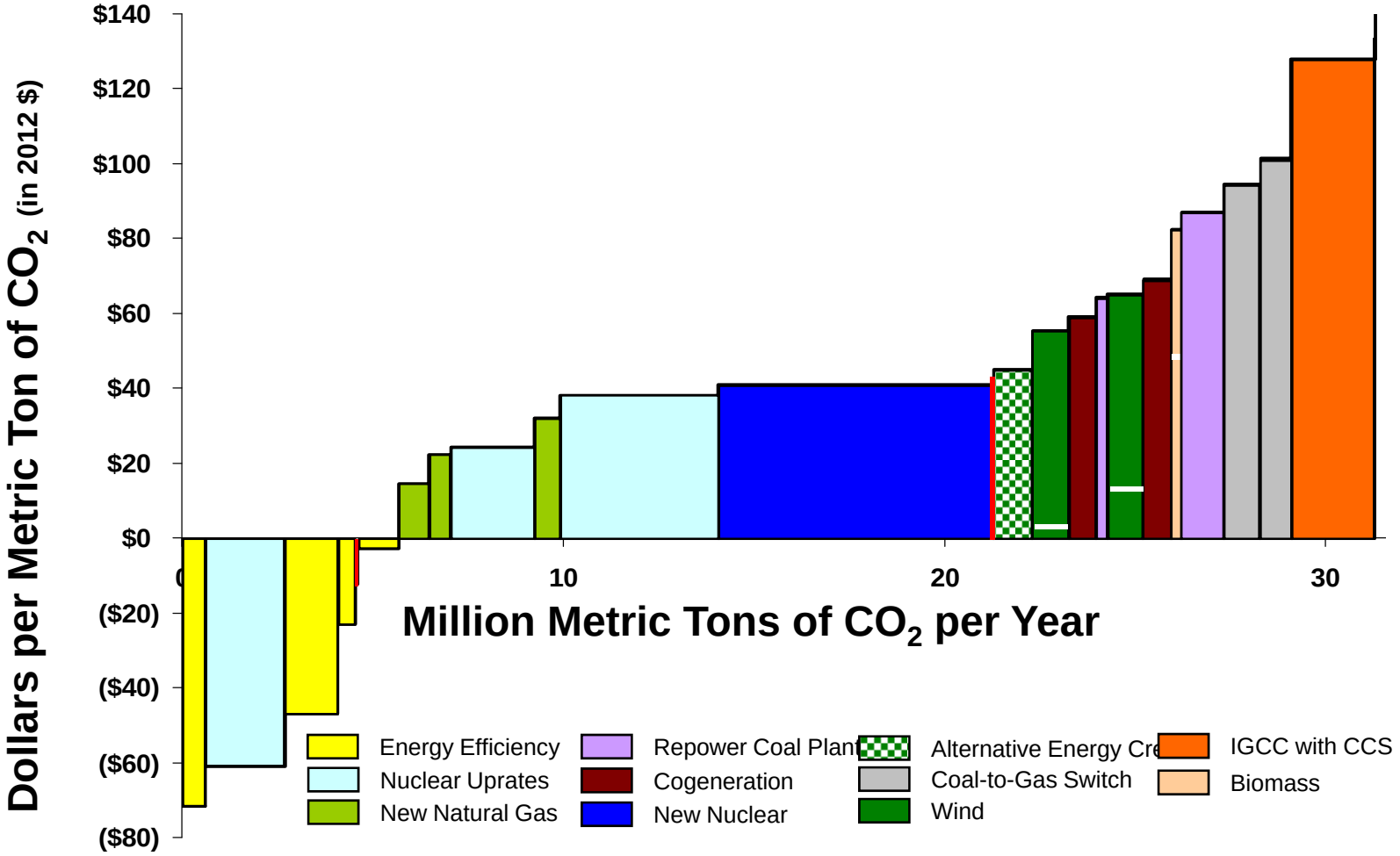
SCPC = supercritical pulverized coal; CCS = carbon capture & storage. Assumes carbon control

- ✓ Gas will continue to be (upwardly) volatile
- ✓ Efficiency & renewables are necessary, but not sufficient
- ✓ Carbon pricing will eventually be imposed
- ✓ Nation must build new nuclear

But the first step is a high one

* Cited in NEI white paper "The Cost of New Generating Capacity in Perspective", August 2008

Supply Curve of Exelon's Carbon Abatement Opportunities



Nuclear is a necessary but not sufficient part of carbon reduction,

Energy Policy Mandates

- ✓ Nuclear is not the sole priority for federal energy policy
- ✓ Effective action on climate change is essential
- ✓ We need to execute on an energy policy that provides:
  - Energy efficiency and security
  - Protection for U.S. economy and consumers
  - Effective market-based carbon policies
  - Competitive power markets
  - Long-term regulatory stability
  - Adequate federal loan guarantee authority
  - Integrated spent fuel management strategy
- Federal action and support is essential in every energy sector
- It is essential for new nuclear build