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RS-19-012

February 8, 2019

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Zion Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-39 and DPR-48
NRC Docket Nos. 50-295, 50-304 and 72-1037

Subject: Response to Request for Additional Information Related to the Application for License Transfers and Conforming Administrative Amendments

References:

1. Letter from Ken Robuck (Energy*Solutions*) and J. Bradley Fewell (Exelon Generation Company, LLC) to U.S. NRC, "Application for License Transfers and Conforming Administrative License Amendments," dated July 24, 2018

2. Letter from John B. Hickman (U.S. NRC) to John Sauger (Zion*Solutions* LLC), "Request for Additional Information Related to the Application for License Transfers and Conforming Administrative Amendments from Zion*Solutions*, LLC to Exelon Generation Company, LLC (EPID NOS 000079/05000297/L-2018-LLA-0217 & 000079/05000304/L-2018-LLA-0217)," dated January 10, 2019

In Reference 1, Zion*Solutions*, LLC (ZS) and Exelon Generation Company, LLC (EGC) submitted an application requesting that the NRC consent to the transfer of ZS's Facility Operating License Nos. DPR-39 and DPR-48 and the transfer of the generally licensed Independent Spent Fuel Storage Installation for the Zion Nuclear Power Station, Units 1 and 2, to EGC.

The NRC requested additional information that is needed to complete its review in Reference 2. In response to this request, EGC is providing the attached information.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this letter, please contact me at (630) 657-2823.

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NMSS

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 8th day of February 2019.

Respectfully,

Patrick R. Simpson
Manager – Licensing

Attachments:

1. Response to Request for Additional Information
2. Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company
3. Updated ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station

cc: NRC Regional Administrator, Region III
John Hickman, Sr. Project Manager, NRC
Illinois Emergency Management Agency – Division of Nuclear Safety

ATTACHMENT 1
Response to Request for Additional Information

NRC Request 1

10 CFR 50.33, "Contents of applications; general information," paragraph (d)(3) states, in relevant part:

> *If applicant is a corporation or an unincorporated association, state:*
>
> ...
>
> *(ii) The names, addresses and citizenship of its directors and of its principal officers;*

Similarly, 10 CFR 72.22, "Contents of application: General and financial information," paragraph (d)(3) states, in relevant part:

> *Each application must state ... [I]f the applicant is a corporation or an unincorporated association:*
>
> ...
>
> *(ii) The names, addresses, and citizenship of its directors and of its principal officers;*

The application states, "EGC has a qualified corporate structure capable of maintaining safe storage of the spent fuel located at the ZNPS ISFSI." While this language provides a general statement on the applicant's corporate structure, the application does not provide complete information regarding all directors, principal officers, or board members of Exelon or its subsidiaries, including EGC.

Pursuant to 10 CFR 50.33(d)(3)(ii) and 10 CFR 72.22(d)(3)(ii), submit the names, addresses, and citizenship of the directors and principal officers of Exelon and all relevant subsidiaries, including EGC.

Response

Exelon Generation Company, LLC (EGC) is a wholly owned subsidiary of Exelon Corporation, a utility services holding company. The general corporate information required by 10 CFR 50.33(d)(3) and 10 CFR 72.22(d)(3)(ii) regarding EGC and its parent company, Exelon Corporation, is provided below.

ATTACHMENT 1
Response to Request for Additional Information

NAME:	Exelon Corporation
STATE OF INCORPORATION & CORPORATE FORM:	Pennsylvania Corporation
BUSINESS ADDRESS:	10 South Dearborn Street P.O. Box 805379 Chicago, IL 60680-5379
BOARD OF DIRECTORS: (Unless otherwise noted, these individuals are U.S. citizens)	Mayo A. Shattuck III Christopher M. Crane Anthony K. Anderson Ann C. Berzin Yves C. de Balmann (U.S. and France) Nicholas DeBenedictis Laurie Brlas Linda P. Jojo Paul Joskow, Ph.D. Robert J. Lawless (Canada) Richard W. Mies John W. Rogers Stephen D. Steinour John F. Young
PARTIAL LIST OF EXECUTIVE PERSONNEL:	Christopher M. Crane – President and Chief Executive Officer Kenneth W. Cornew – Senior Executive Vice President and Chief Commercial Officer Anne Pramaggiore – Senior Executive Vice President, Exelon and Chief Executive Officer, Exelon Utilities William A. Von Hoene – Senior Executive Vice President and Chief Strategy Officer Joseph Nigro – Senior Executive Vice President and Chief Financial Officer Paymon Aliabadi – Executive Vice President and Chief Enterprise Risk Officer Fabian Souza – Senior Vice President and Corporate Controller

NAME:	Exelon Generation Company, LLC
STATE OF INCORPORATION & CORPORATE FORM:	Pennsylvania Limited Liability Company
BUSINESS ADDRESS:	300 Exelon Way Kennett Square, PA 19348-2473
BOARD OF DIRECTORS OR MANAGEMENT COMMITTEE:	None (member managed by Exelon Corporation)
PARTIAL LIST OF EXECUTIVE PERSONNEL:	Kenneth W. Cornew – President and Chief Executive Officer Michael J. Pacilio – Executive Vice President and Chief Operating Officer John F. Barnes – Senior Vice President, Exelon Generation and President Exelon Power Bryan C. Hanson – Senior Vice President; and President, Exelon Nuclear and Chief Nuclear Officer Bryan P. Wright – Senior Vice President and Chief Financial Officer Matthew Bauer – Vice President and Controller James Mc Hugh – Chief Executive Officer, Constellation

NRC Request 2

10 CFR 72.22, paragraph (e) states, in relevant part:

> *Each application must state ... information sufficient to demonstrate to the Commission the financial qualifications of the applicant to carry out, in accordance with the regulations in this chapter, the activities for which the license is sought...The information must show that the applicant either possesses the necessary funds, or that the applicant has reasonable assurance of obtaining the necessary funds...to cover the following:*
>
> ...
>
> *(2) Estimated operating costs over the planned life of the ISFSI; and*
>
> *(3) Estimated decommissioning costs, and the necessary financial arrangements to provide reasonable assurance before licensing, that decommissioning will be carried*

out after the removal of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste from storage.

A) The application states that, "Because EGC is no longer authorized under the 10 CFR Part 50 licenses to operate or load fuel pursuant to the 10 CFR 50.82(a)(2), EGC will not conduct any of the operations contemplated by the financial qualifications provisions of 10 CFR 50.33(f)(2), but rather all of its licensed activities will involve possession of radioactive material in connection with maintaining the ISFSI, and completing the decommissioning of the ISFSI following transfer of all irradiated fuel." The application further states that, "Upon license transfer approval, EGC will assume responsibilities for managing the stored fuel and greater than class C (GTCC) waste and provide funding for the management of all irradiated nuclear fuel at ZNPS until title ... and possession of the fuel is transferred to the Secretary of Energy." While the NRC staff recognizes that, once decommissioning of the reactor facility is complete, there are no longer operational expenses associated with the reactor facility, there does remain operational expenses associated with spent fuel management, including ISFSI operations and maintenance expenses, which require a financial qualification determination. While the application references an Updated Irradiated Fuel Management Plan for ZNPS that was submitted in 2010 following the transfer of the license from EGC to ZS, it does not include the updated remaining operational expenses, in current year dollars, or the method by which the applicant possesses or has reasonable assurance of obtaining funds to cover the remaining operational expenses associated with spent fuel management for ZNPS.

Pursuant to 10 CFR 72.22(e)(2) and 10 CFR 50.54(bb), provide the remaining expected operational costs associated with spent fuel management for ZNPS, in current year dollars. Additionally, provide information related to the method by which the applicant possesses or has reasonable assurance of obtaining funds to cover the remaining operational expenses associated with spent fuel management for ZNPS. For clarity, please provide an updated cash flow analysis reflecting the remaining spent fuel management expenses.

B) According to the application, in 2010, at the time of transferring the ZNPS license to ZS, EGC retained $25 million in its Non-Qualified Decommissioning Fund for maintenance and decommissioning of the ISFSI upon return of the license to EGC. Additionally, the application references the ZNPS ISFSI Decommissioning Funding Plan (DFP), submitted by EGC to the NRC in accordance with 10 CFR 72.30, "Financial assurance and record keeping," paragraph (c), dated October 17, 2016 (ADAMS Accession No. ML16291A505). While the 2016 DFP contained information required for the NRC staff to make a determination that there is reasonable assurance that EGC will be able to decommission the ISFSI and that the licensee is in compliance with the reporting requirements in 10 CFR 72.30(b) and 72.30(c}, for the purpose of this application the staff requires updated information, in current year dollars, related to the expected cost to decommission the ISFSI and the current decommissioning trust fund value.

Pursuant to 10 CFR 72.30(b), each holder of, or applicant for, a license under Part 72 must submit for NRC review and approval a DFP containing information on how reasonable assurance will be provided that funds will be available to decommission its ISFSI. The DFP must contain a detailed decommissioning cost estimate (DCE), in an amount reflecting: (1) the cost of an independent contractor to perform all decommissioning activities, (2) an

adequate contingency factor, and (3) the cost of meeting the 10 CFR 20.1402 unrestricted use criteria (or the cost of meeting the 10 CFR 20.1403 restricted use criteria, provided the licensee can demonstrate its ability to meet these criteria). The licensee's DFP must also identify and justify using the key assumptions contained in the DCE. Further, the DFP must describe the method of assuring funds for ISFSI decommissioning, including means for adjusting cost estimates and associated funding levels periodically over the life of the ISFSI. Additionally, the DFP must specify the volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination, and contain a certification that financial assurance for ISFSI decommissioning has been provided in the amount of the DCE.

Pursuant to 10 CFR 72.30(c), at the time of license renewal and at intervals not to exceed 3 years, the decommissioning funding plan (DFP) required to be submitted by 10 CFR 72.30(b) must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination. The DFP must update the information submitted with the original or prior approved plan. In addition, the DFP must also specifically consider the effect of the following events on decommissioning costs, as required by 10 CFR 72.30(c)(1)-(4): (1) spills of radioactive material producing additional residual radioactivity in onsite subsurface material, (2) facility modifications, (3) changes in authorized possession limits, and (4) actual remediation costs that exceed the previous cost estimate.

Provide the information required in 10 CFR 72.30(b) and 10 CFR 72.30(c), as applicable, in current year dollars.

Response to Part A

The cash flow analysis for the Zion Nuclear Power Station (ZNPS) Independent Spent Fuel Storage Installation (ISFSI) primarily consists of the ISFSI operating and maintenance (spent fuel management) costs, radiological decommissioning costs, the existing trust fund assets and the associated growth of the trust fund assets over the remaining operational years of the ISFSI. Table A.1-1 provides the estimated annual spent fuel management costs for the Zion ISFSI including the costs to transfer the spent nuclear fuel and greater than class C (GTCC) waste on the ISFSI to the Department of Energy (DOE). Table A.1-2 provides the trust fund assets as of December 31, 2018, and the ISFSI decommissioning funding requirements. In accordance with 10 CFR 72.30(b)(4), EGC periodically updates the ISFSI decommissioning cost estimate associated with the assurance method and will adjust the funding levels as necessary to provide assurance that there will be sufficient funds for ISFSI decommissioning.

EGC plans to pay for spent fuel management costs from its operating revenues and the decommissioning trust fund assets not required for radiological decommissioning of the ISFSI. To the extent that the trust fund balance exceeds costs required for radiological decommissioning of the ISFSI, EGC intends to utilize the excess trust fund monies for ISFSI spent fuel management costs. EGC monitors the funding level of the decommissioning trust fund to ensure that withdrawals for spent fuel management costs will not inhibit the ability of EGC to complete radiological decommissioning of the ISFSI. Additionally, EGC intends to supplement payment of spent fuel management costs, as necessary, with its own operating

revenues. EGC has an investment grade credit rating and is financially qualified standing alone based on the financial information provided in Attachment 2.[1]

An additional potential source of funding for ISFSI spent fuel management costs is the Settlement Agreement between EGC and the DOE, under which the United States Government has agreed to reimburse EGC for certain costs incurred attributable to DOE's failure to meet its contractual obligations for the transfer of spent fuel from Zion and other EGC nuclear plants (Reference 1).

The Updated ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station provided in Attachment 3 provides further discussion of the elements taken into consideration in the development of the information presented in Table A.1-2.

Reference:

1. Settlement Agreement between the U.S. Department of Energy and Exelon Generation Company, LLC (including Commonwealth Edison Company and AmerGen Energy Company), signed and executed August 5, 2004, as amended by the Addendum to the Settlement Agreement signed May 4, 2009

[1] In accordance with the Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance, NUREG-1577, Revision 1, p. 10, for a licensee applicant that "has an 'investment grade' rating or equivalent from at least two of these sources [*Moody's*, *Standard and Poors*, and *Value Line*], . . . the reviewer will find such applicants financially qualified."

Table A.1-1: Zion ISFSI Spent Fuel Management Costs
(thousands, December 31, 2018 Dollars)

Year	Cost
2019[1]	$ 2,761
2020	$ 8,261
2021	$ 8,261
2022	$ 8,261
2023	$ 8,284
2024	$ 8,261
2025	$ 8,261
2026	$ 8,261
2027	$ 8,284
2028	$ 8,261
2029	$ 8,261
2030	$ 8,261
2031	$ 12,765
2032	$ 24,373
TOTAL[2]	$130,821

1 For the purpose of the cost estimate License transfer has been conservatively assumed to occur September 1, 2019

2 Total costs may not add due to rounding

Table A.1-2: Zion ISFSI Decommissioning Financial Assurance Summary

Total Trust Fund Assets as of December 31, 2018 *(Thousand $) (12/31/2018 dollars)*	$60,551
Trust Fund Assets Allocated for ISFSI Decommissioning *(Thousand $) (12/31/2018 dollars)* *	$12,909
Annual Contributions	$0
Parent Company Guarantee	$0
10 CFR 72.30 Site Specific Decommissioning Cost *(Thousand $) (12/31/2018 dollars)*	$17,030
Method of Assurance	10 CFR 72.30(e)(1)

* *The remaining funds have been allocated for spent fuel management.*

Response to Part B

The Updated ISFSI Decommissioning Funding Plan for Zion Nuclear Power Station in Attachment 3 provides the requested information.

ATTACHMENT 2

Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Rating Scale

	S&P and Fitch	Moody's
Investment Grade	AAA	Aaa
	AA+,AA, AA-	Aa1, Aa2, Aa3
	A+, A, A-	A1, A2, A3
	BBB+, BBB, BBB-	Baa1, Baa2, Baa3
Speculative Grade	BB+, BB, BB-	Ba1, Ba2, Ba3
	B+, B, B-	B1, B2, B3
	CCC through D	Caa through C

Exelon Credit Ratings as of August 2, 2018

		Corp	ExGen
Corporate LT	S&P	BBB	BBB
	Moody's	Baa2	Baa2
	Fitch	BBB	BBB
Senior Secured	S&P	NR	NR
	Moody's	NR	NR
	Fitch	NR	NR
Senior Unsecured	S&P	BBB-	BBB
	Moody's	Baa2	Baa2
	Fitch	BBB	BBB
Short-Term/ CP	S&P	A-2	A-2
	Moody's	P-2	P-2
	Fitch	F-2	F-2

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

MOODY'S
INVESTORS SERVICE

CREDIT OPINION
30 August 2018

Update

Rate this Research

RATINGS

Exelon Corporation

Domicile	United States
Long Term Rating	Baa2
Type	LT Issuer Rating
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Japan	81-3-5408-4100
EMEA	44-20-7772-5454

Exelon Corporation

Update to Credit Analysis

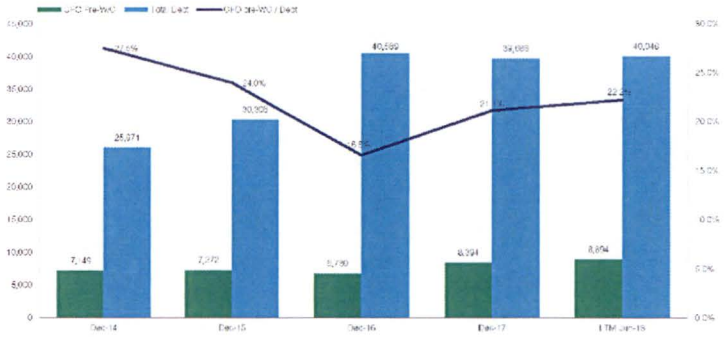
Summary

Exelon Corporation's (Exelon) credit profile reflects its size, regional diversity, and adequate financial profile. Exelon's credit strength comes from its roughly $38 billion in regulated rate base, consisting of regulated transmission and distribution (T&D) utilities diversified across Illinois, Maryland, Pennsylvania, New Jersey, Delaware and the District of Columbia.

Exelon's rating is principally constrained by its higher-risk unregulated utility and merchant power subsidiary, Exelon Generation Company, LLC (ExGen, Baa2 stable). ExGen owns a large fleet of unregulated nuclear generation facilities and a retail energy trading and marketing business. These unregulated businesses are vastly more volatile compared to their regulated T&D businesses.

Moreover, nuclear generation faces a sustained period of challenging conditions because of the competition from low natural gas prices due to shale gas development. As a diversified power company, Exelon is well capitalized, has adequate liquidity reserves, and is expected to generate a ratio of cash flow from operations (CFO) pre-working capital to debt of around 20%. Retained cash flow (RCF) to debt is expected to remain in the mid-to-high teen's range.

Exhibit 1
Historical CFO Pre-WC, Total Debt and CFO Pre-WC to Debt ($ Mn)



Source: Moody's Financial Metrics

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Credit strengths

» Large and growing rate base

» Adequate financial profile

» Strong nuclear operator

Credit challenges

» Stiff competition from cheap natural gas

» High risk associated with unregulated generation and retail business

» Significant leverage at the holding company

Rating outlook

Exelon's stable rating outlook primarily reflects the consistency and predictability of its large T&D utility businesses. Exelon is well positioned to generate a ratio of CFO pre-working capital (CFO pre-WC) to debt of around 18% - 20%, an important threshold for maintaining a stable rating outlook, given the weak business fundamentals at ExGen.

Factors that could lead to an upgrade

» A material shift in its corporate finance policies, including a significant reduction of parent holding company debt and the sustained production of a ratio of CFO pre-WC to debt in the mid-20% range

» A material de-risking across the corporate family, specifically with respect to ExGen's large, merchant nuclear reactor fleet or its large commodity trading and marketing business.

Factors that could lead to a downgrade

» If Exelon's financial performance deteriorated for a sustained period of time, where the ratio of CFO pre-WC to debt fell to the mid-teens on a sustained basis.

» A material increase in business risk, especially if it is associated with additional businesses within ExGen.

Key indicators

Exhibit 2
KEY INDICATORS [1]
Exelon Corporation

	Dec-14	Dec-15	Dec-16	Dec-17	LTM Jun-18
CFO pre-WC + Interest / Interest	7.1x	6.7x	4.7x	5.6x	6.0x
CFO pre-WC / Debt	27.5%	24.0%	16.6%	21.1%	22.2%
CFO pre-WC – Dividends / Debt	21.8%	20.3%	13.7%	18.0%	19.0%
Debt / Capitalization	41.2%	42.5%	47.1%	47.8%	47.5%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Financial Metrics™
Source: Moody's Financial Metrics

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Profile

Exelon Corporation (Exelon) is a diversified holding company headquartered in Chicago. It owns the largest commercial nuclear fleet in the US through its merchant power subsidiary, Exelon Generation Company, LLC (ExGen), with owned capacity of over 35 gigawatts (GW).

Exelon conducts transmission and distribution business through its six utility subsidiaries – Commonwealth Edison Company (ComEd, A3 stable), PECO Energy Company (PECO, A2 stable), Baltimore Gas and Electric Company (BGE, A3 stable), Potomac Electric Power Company (Pepco, Baa1 stable), Delmarva Power & Light Company (DPL, Baa1 stable) and Atlantic City Electric Company (ACE, Baa2 positive).

Exhibit 3
2018 Projected Sources and Uses of Cash

	Total Utilities	ExGen	Corp.
Adjusted CFO	3,900	3,975	175
Base CapEx and Nuclear Fuel	-	(1,975)	(25)
Free Cash Flow	**3,900**	**2,000**	**150**
Utility Investment	(5,525)	-	-
ExGen Growth	-	(375)	-
Total Cash Flow after CapeEx	***(1,625)***	***1,625***	***150***

Source: Company Presentations

Detailed credit considerations

Large, diversified regulated utility portfolio is foundation of credit profile

Exelon's six regulated utilities inherently have low business risk profiles because they are regulated monopolies. Moreover because their business is limited to transmission and distribution activities, these utilities are not directly exposed to commodity price risk. Exelon's growing regulated utility business is strategically important to the Exelon corporate family and is fundamental to Exelon's stable credit quality.

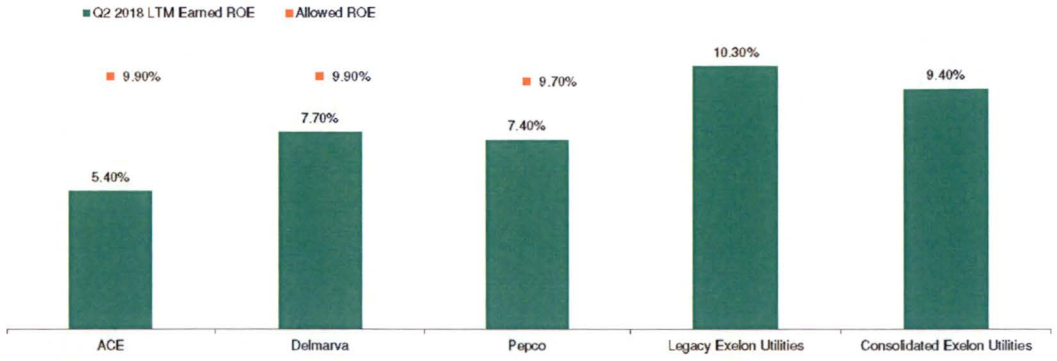
Among the six utilities, ComEd is the largest with about one third of the total rate base. ComEd has lower business risk compared to most T&D utilities because of the formulaic rate mechanism currently in effect for Illinois' investor-owned electric utilities. However, its cash flow to debt metrics are weak for its credit profile. PECO is the next largest utility and represents about 20% of the total rate base. Its credit quality is the strongest among Exelon's utilities because it operates in a supportive regulatory environment and has strong credit metrics.

In August 2018, PECO reached a settlement in its general rate case that factored in the effects of tax reform on rates. The company expects the Pennsylvania Public Utility Commission (PAPUC) to approve the settlement before the end of the year. In June 2018, the governor of Pennsylvania signed a bill that will allow the PAPUC to approve utility-proposed alternative rate mechanisms such as decoupling, formula rates, multi-year rate plans and performance based rates. PECO, however, will not be able to take advantage of this new law until the next rate case.

The rest of the utilities – BG&E, PEPCO, DPL and ACE – operate in less favorable regulatory environments, which include Maryland, the District of Columbia, Delaware and New Jersey. Outside of the recent positive developments discussed below, these four utilities generally have few adjustment mechanisms for capital investments outside of general rate cases and use a current test year method (as opposed to a fully projected forward test year method). BG&E has the strongest credit profile of the four utilities because of its strong cash flow to debt metrics, driven by favorable returns on energy efficiency projects in Maryland. ACE has the lowest credit quality of the four, mainly because it experiences significant regulatory lag and its cash flow to debt metrics are on the weaker side for a T&D entity.

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Exhibit 4
Allowed vs Earned ROEs for Selected Exelon Utilities

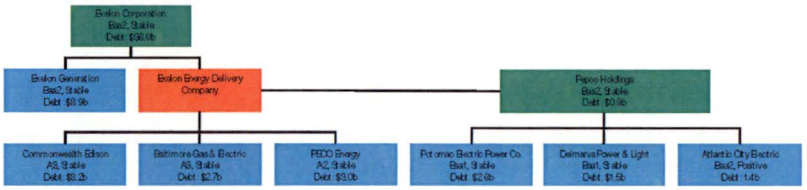


Source: Company Presentations

Exelon acquired PEPCO, DPL and ACE as part of its Pepco Holdings, Inc acquisition in March of 2016. These three utilities are held under Pepco Holdings, LLC (PHI, Baa2 stable), an intermediate holding company. Prior to the acquisition, PHI's utilities had experienced operational issues, challenging regulatory relationships and poor financial results. Prior management was making progress in addressing these issues and the improvement continued after Exelon assumed ownership. Previous concerns regarding operational reliability are fading and the regulatory relationship appears to be improving.

There have been three important positive regulatory developments with regard to the former PHI utilities. First, PEPCO received approval from the District of Columbia Public Service Commission to file a multi-year rate case or utilize a future test period in next rate case. Second, in December 2017, the New Jersey Board of Public Utilities approved a rulemaking that allows ACE and other utilities in New Jersey to request an Infrastructure Investment Program (IIP), which is a capital investment tracker related to safety and reliability projects. Third, in June 2018, the governor of Delaware signed a bill that enacted a Distribution System Investment Charge (DSIC) that will allow utilities to recover infrastructure investments through gradual rate increases and fewer rate cases. The company plans to make its first filing under the DSIC in the fourth quarter of 2018.

Exhibit 5
Organizational Structure
Debt is reported as of 6/30/2018



Source: Company Filings

Exelon Generation has high commodity exposure but low leverage

In LTM June 2018, ExGen provided about 42% of Exelon's consolidated CFO pre-WC. ExGen has a high business risk profile because the wholesale market for electricity has a high level of commodity-related risks and wholesale prices have fallen sharply in the last few years due to competition from gas and oversupply. The company nevertheless continues to display a stable credit profile because of its low debt burden and the relatively low cash production cost associated with its nuclear power plants.

ExGen has received revenues under the New York zero emission credit (ZEC) program since 1 April 2017. Moreover, ExGen was awarded similar ZEC contracts under the Illinois' ZEC program in January 2018. Revenues associated with the Illinois ZEC program

are retroactive to 1 June 2017. Legal challenges against ZECs from fossil generators are on appeal at the US Court of Appeals after the district courts dismissed lawsuits in both New York and Illinois. On 23 May 2018, the governor of New Jersey signed legislation that established a ZEC program in the state to provide compensation to nuclear plants that meet certain requirements. ExGen owns and operates the Oyster Creek Generating Station in New Jersey, which is expected to shut down in October 2018. It also owns and operates the Salem Generating Station which is expected to receive compensation through the new ZECs program. The implementation of the program will potentially mitigate the risk of early retirement of the Salem nuclear plant.

Exelon views ExGen as an integral part of its business and has repeatedly declared its commitment to support and maintain ExGen's investment grade rating. ExGen provides upstream dividend payments to support the holding company interest expense and shareholder dividend requirements. Nevertheless, ExGen's ratings reflect its stand-alone credit profile with no uplift related to parent support.

While we do not expect Exelon to divest ExGen in the foreseeable future, it is worth noting that Exelon's credit profile would continue to exhibit stability without ExGen. Currently, Exelon's ratio of holding company debt to consolidated debt is about 22%. Without the debt associated with its ExGen subsidiary, Exelon's ratio of holding company debt to total debt would rise to about 30%.

Exelon has an adequate financial profile

Maintaining a ratio of CFO pre-WC to debt of around 20% positions Exelon well at their current credit profile. For LTM June 2018, Exelon's CFO pre-WC to debt was around 22.2%; slightly higher than the 21.1% exhibited in 2017. Even though 2016 was significantly lower, with CFO pre-WC to debt of 16.6%, this metric would have been around 20% if a one-time deposit of $1.25 billion to the IRS associated with a tax dispute was added back. Exelon's regulated subsidiaries produced approximately $4.60 billion of CFO pre-WC, or about 52% of the consolidated total. Over the next few years, we anticipate that cash flows from Exelon's utility subsidiaries will increase and that ExGen will maintain CFO pre-WC to debt in line with year end 2017 results.

Although recently passed tax reform legislation has a material effect on Exelon's utility subsidiaries, the overall impact on the consolidated Exelon financial is minor. Tax reform will reduce cash flows at Exelon's regulated utilities and lower their cash flow to debt metrics. However, we do not view the deterioration to be significant enough to warrant rating action. Exelon's unregulated operations will benefit from the lower tax rate and the full expensing of capital expenditures and will generate more cash flow as a result. The positive cash flows from the unregulated operations will offset the declines from the regulated operations, resulting in a slightly positive impact on the consolidated entity.

Exhibit 6
CFO pre-WC
($ billions)

CFO pre-WC	2015	2016	2017	LTM - June'18
Exelon	7.3	6.7	8.4	8.9
ExGen	3.7	3.5	3.2	3.7
ExGen as % of Exelon	50.7%	52.2%	38.1%	41.6%

Source: Moody's Financials Metrics

Liquidity analysis

Exelon has an adequate liquidity profile, with approximately $900 million of cash and short term investments on hand as of 30 June 2018. Exelon also has bank liquidity arrangements totaling $9.5 billion, including $5.3 billion at ExGen. Exelon's regulated utilities have access to $3.1 billion of liquidity, including $600 million at PECO, $600 million at BGE, $1 billion at ComEd, $300 million at Pepco, $300 million at DPL, and $300 million at ACE. All of the facilities expire in May 2023.

Exelon's core syndicated credit facilities are used primarily to provide liquidity support and for the issuance of letters of credit. The credit agreements do not contain any rating triggers that would affect borrowing access to the commitments and do not require material adverse change (MAC) representation for borrowings or the issuance of LOCs. Exelon and its subsidiaries have FFO to interest

coverage financial covenants in between 2.0x and 3.0x. As of the end of the second quarter of 2018, Exelon and its subsidiaries all have a ratio of FFO over interest of at least 5x.

Over the last twelve months ending 30 June 2018, Exelon generated approximately $8.5 billion of CFO, spent about $7.5 billion in capital expenditures and paid $1.3 billion in dividends resulting in negative free cash flow of approximately $0.3 billion. Due to the high level of planned capital expenditures, we expect Exelon to have between $500 million and $1.0 billion of negative free cash flow after dividends over the next 12 - 18 months. We expect the company will finance the shortfall with a balanced mix of debt and equity and will maintain their current capital structure.

As of the last reporting period 30 June 2018, in the event that ExGen were downgraded below investment grade, ExGen could be required to post additional collateral of $1.5 billion.

As of 30 June 2018, Exelon and its subsidiaries had about $628 million of commercial paper outstanding. The next long term debt maturities in Exelon's corporate family include $250 million of Atlantic City Electric Company first mortgage bonds due in November 2018.

Rating methodology and scorecard factors

Exhibit 7

Rating Factors				
Exelon Corporation				
Regulated Electric and Gas Utilities Industry Grid [1][2]	Current LTM 6/30/2018		Moody's 12-18 Month Forward View As of Date Published [3]	
Factor 1 : Regulatory Framework (25%)	**Measure**	**Score**	**Measure**	**Score**
a) Legislative and Judicial Underpinnings of the Regulatory Framework	A	A	A	A
b) Consistency and Predictability of Regulation	A	A	A	A
Factor 2 : Ability to Recover Costs and Earn Returns (25%)				
a) Timeliness of Recovery of Operating and Capital Costs	Baa	Baa	Baa	Baa
b) Sufficiency of Rates and Returns	Baa	Baa	Baa	Baa
Factor 3 : Diversification (10%)				
a) Market Position	A	A	A	A
b) Generation and Fuel Diversity	Baa	Baa	Baa	Baa
Factor 4 : Financial Strength (40%)				
a) CFO pre-WC + Interest / Interest (3 Year Avg)	5.5x	A	5x - 5.5x	A
b) CFO pre-WC / Debt (3 Year Avg)	19.2%	Baa	18% - 21%	Baa
c) CFO pre-WC – Dividends / Debt (3 Year Avg)	16.2%	Baa	14% - 19%	Baa
d) Debt / Capitalization (3 Year Avg)	46.9%	Baa	42% - 47%	A
Rating:				
Grid-Indicated Rating Before Notching Adjustment		Baa1		Baa1
HoldCo Structural Subordination Notching	-1	-1	-1	-1
a) Indicated Rating from Grid		Baa2		Baa2
b) Actual Rating Assigned		Baa2		Baa2

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 6/30/2018(L)
3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.
Source: Moody's Financial Metrics

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Appendix

Exhibit 8

Cash Flow and Credit Metrics [1]

CF Metrics	Dec-14	Dec-15	Dec-16	Dec-17	LTM Jun-18
As Adjusted					
FFO	**7,130**	**7,967**	**9,064**	**9,462**	**10,060**
+/- Other	19	(695)	(2,334)	(1,068)	(1,166)
CFO Pre-WC	7,149	7,272	6,730	8,394	8,894
+/- ΔWC	(2,511)	567	1,853	(747)	(277)
CFO	**4,638**	**7,839**	**8,583**	**7,647**	**8,617**
- Div	1,488	1,124	1,185	1,246	1,301
- Capex	6,218	7,692	8,672	7,741	7,703
FCF	**(3,067)**	**(977)**	**(1,274)**	**(1,340)**	**(387)**
(CFO Pre-W/C) / Debt	27.5%	24.0%	16.6%	21.1%	22.2%
(CFO Pre-W/C - Dividends) / Debt	21.8%	20.3%	13.7%	18.0%	19.0%
FFO / Debt	27.5%	26.3%	22.3%	23.8%	25.1%
RCF / Debt	21.7%	22.6%	19.4%	20.7%	21.9%

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. Periods are Financial Year-End unless indicated. LTM = Last Twelve Months
Source: Moody's Financial Metrics

Exhibit 9

Peer Comparison Table [1]

	Exelon Corporation			Entergy Corporation			Public Service Enterprise Group Incorporated			Dominion Energy, Inc			Southern Company (The)		
	Baa2 Stable			Baa2 Negative			Baa1 Stable			Baa2 Negative			Baa2 Negative		
	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM	FYE	FYE	LTM
(In US mil'lions)	Dec-16	Dec-17	Jun-18	Dec-16	Dec-17	Mar-18	Dec-16	Dec-17	Mar-18	Dec-16	Dec-17	Mar-18	Dec-16	Dec-17	Mar-18
Revenue	31,360	33,531	34,888	10,846	11,074	11,210	9,061	9,084	9,311	11,737	12,586	12,668	19,896	19,031	19,632
CFO Pre-W/C	6,730	8,394	8,894	1,887	2,793	2,973	3,160	3,208	3,187	4,030	4,702	4,799	4,511	7,063	7,340
Total Debt	40,569	39,883	40,046	18,307	19,472	20,475	12,715	14,537	14,503	36,454	38,825	38,937	60,699	51,434	52,570
CFO pre-WC / Debt	16.6%	21.1%	22.2%	10.7%	14.3%	14.5%	24.8%	22.1%	22.0%	11.0%	12.1%	12.2%	9.1%	13.7%	14.0%
CFO pre-WC - Dividends / Debt	13.7%	18.0%	19.0%	15.1%	11.1%	11.4%	18.3%	16.1%	15.9%	8.1%	7.0%	7.0%	8.2%	9.1%	9.2%
Debt / Capitalization	47.1%	47.8%	47.5%	54.0%	56.2%	59.0%	37.1%	43.5%	42.9%	53.0%	61.1%	60.1%	53.8%	60.2%	60.3%

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months.
Source: Moody's Financial Metrics

Ratings

Exhibit 10

Category	Moody's Rating
EXELON CORPORATION	
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Jr Subordinate	Baa3
Commercial Paper	P-2
EXELON GENERATION COMPANY, LLC	
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Commercial Paper	P-2
COMMONWEALTH EDISON COMPANY	
Outlook	Stable
Issuer Rating	A3
First Mortgage Bonds	A1

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Senior Secured	A1
Sr Unsec Bank Credit Facility	A3
Commercial Paper	P-2
PECO ENERGY COMPANY	
Outlook	Stable
Issuer Rating	A2
First Mortgage Bonds	Aa3
Senior Secured Shelf	(P)Aa3
Sr Unsec Bank Credit Facility	A2
Pref. Stock	Baa1
Commercial Paper	P-1
BALTIMORE GAS AND ELECTRIC COMPANY	
Outlook	Stable
Issuer Rating	A3
Sr Unsec Bank Credit Facility	A3
Senior Unsecured	A3
Commercial Paper	P-2
POTOMAC ELECTRIC POWER COMPANY	
Outlook	Stable
Issuer Rating	Baa1
First Mortgage Bonds	A2
Commercial Paper	P-2
DELMARVA POWER & LIGHT COMPANY	
Outlook	Stable
Issuer Rating	Baa1
First Mortgage Bonds	A2
Bkd Senior Secured	A2
Senior Unsecured	Baa1
Commercial Paper	P-2
ATLANTIC CITY ELECTRIC COMPANY	
Outlook	Positive
Issuer Rating	Baa2
First Mortgage Bonds	A3
Bkd Senior Secured	A3
Commercial Paper	P-2
CONSTELLATION ENERGY GROUP, INC.	
Outlook	No Outlook
Bkd Senior Unsecured	Baa2
PEPCO HOLDINGS, LLC	
Outlook	Stable
Issuer Rating	Baa2
Senior Unsecured	Baa2
Commercial Paper	P-2
COMED FINANCING III	
Outlook	Stable
BACKED Pref. Stock	Baa2
PECO ENERGY CAPITAL TRUST IV	
Outlook	Stable
BACKED Pref. Stock	A3
PECO ENERGY CAPITAL TRUST III	
Outlook	Stable
BACKED Pref. Stock	A3

Source: Moody's Investors Service

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REPORT NUMBER 1137849

ATTACHMENT 2
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CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

MOODY'S
INVESTORS SERVICE

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MOODY'S
INVESTORS SERVICE

CREDIT OPINION
19 June 2018

Update

Rate this Research

RATINGS

Exelon Generation Company, LLC

Domicile	Chicago, ILLINOIS, United States
Long Term Rating	Baa2
Type	LT Issuer Rating
Outlook	Stable

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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Exelon Generation Company, LLC

Update to credit analysis

Summary

Exelon Generation Company, LLC's (ExGen, Baa2 stable) credit profile reflects that of a large independent power producer with moderate financial leverage. The company's principal asset base is a large fleet of nuclear power plants (15 of them) that are heavily exposed to wholesale market power prices.

The wholesale power market has been difficult for coal and nuclear plants in the past few years in the US because of the competition from gas-fired power plants. Shale development has made gas cheap and abundant, allowing gas plants to produce power at a much lower cost than in the past. ExGen's larger multi-unit nuclear plants have nevertheless remained competitive because they have a low operating cost. The company has five smaller single-unit nuclear plants that are not competitive but three of them will remain profitable because they will receive zero emission subsidies. Two of the smaller plants that do not receive subsidies are scheduled to close in 2018 and 2019.

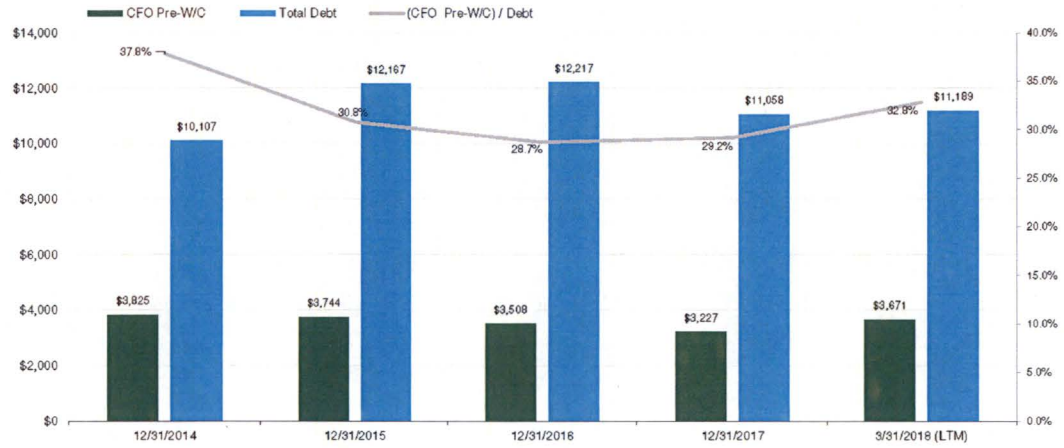
ExGen's ratio of cash flow to debt was weak for its credit profile in 2016 and 2017 but we see improvement in 2018 and 2019 due to a combination of cost reductions, an increase in nuclear generation subsidies and lower tax payments. Potential market reform currently being proposed by the grid operator, PJM Interconnection, LLC (PJM, Aa2, stable), could provide further upside to cash flows.

ExGen's parent, Exelon Corporation (Exelon, Baa2 stable), views ExGen as an integral part of its business and has repeatedly declared its commitment to support and maintain ExGen's investment grade rating. However, ExGen's ratings reflect its stand-alone credit profile with no uplift related to parent support. In addition, Exelon will continue to rely on ExGen for upstream dividend payments over the next few years to meet its holding company interest expense and shareholder dividend requirements.

THIS REPORT WAS REPUBLISHED ON 20 JUNE 2018 WITH UPDATES TO EXHIBIT 6 TO REFLECT NUCLEAR PLANT CAPACITY

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Exhibit 1
Historical CFO Pre-W/C, Total Debt and CFO Pre-W/C to Debt
($MM)



Source: Moody's Financial Metrics™

Credit strengths

» Most of its capacity is cost competitive and is in favorable locations

» Improving cash flow outlook with cost cuts, nuclear subsidy and lower tax payments

» Strong complementary retail operation

Credit challenges

» Low energy prices due to competition from natural gas generation

» Cash flow to debt metrics were low in 2016 and 2017

» Nuclear generation concentration risk

Rating outlook

ExGen's rating outlook is stable. Despite the challenging market environment, we project ExGen's cash flow to debt metrics to improve enough for us to maintain the rating thanks to cost controls, state subsidies, and tax reform.

Factors that could lead to an upgrade

ExGen's ratings could improve if leverage is substantially reduced, to the point where CFO Pre-WC to debt increases to above the 40% range for a sustained period, or the low 30% range when accounting for nuclear fuel as a cash expense.

Factors that could lead to a downgrade

Failure to maintain CFO Pre-WC to debt in the low 30% range, or low 20% range on a nuclear fuel adjusted basis, could result in downward pressure on the rating.

ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Given its concentration in nuclear generation, implementation of industrywide safety or operational mandates could negatively affect ExGen's ratings.

Key indicators

Exhibit 2
Exelon Generation Company, LLC Indicators [1]

	12/31/2014	12/31/2015	12/31/2016	12/31/2017	3/31/2018(LTM)
(CFO Pre-W/C + Interest) / Interest	9.1x	8.2x	7.1x	6.5x	7.3x
(CFO Pre-W/C) / Debt	37.8%	30.8%	28.7%	29.2%	32.8%
RCF / Debt	22.9%	15.3%	24.5%	24.3%	26.1%

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Business Profile

ExGen is one of the largest independent power producers in the US with approximately 35 Gigwatts (GW) of generating capacity. ExGen also owns one of the largest national retail energy supply businesses, serving over 2.0 million customers with about 210 terawatt-hours (TWh) of electric load.

Nuclear assets

The company's asset base is dominated by nuclear power plants. ExGen owns 20.3 GW of nuclear capacity directly and benefits from the cash flows of another 2 GW. The 2 GW indirect ownership is associated with its Constellation Energy Nuclear Group subsidiary (CENG.) CENG owns three nuclear power plants: 576 MW Ginna, 1,776 MW Calvert Cliffs and 1,675 MW of Nine Mile Point (88% ownership interest). Even though Electricite de France (EDF, A3 stable) technically owns 49.99% of CENG, ExGen consolidates from 100% of the cash flows produced by CENG. As a result, we analyze ExGen as if it owns 100% of CENG.

About 80% of ExGen's nuclear capacity is located in the PJM market, while New York and MISO contribute 15% and 5%, respectively. ExGen has two nuclear plants that are scheduled for retirement in PJM – the 625 MW Oyster Creek in the EMAAC zone will retire at in October 2018 and the 837 MW Three Mile Island is scheduled to retire on September 30, 2019.

Exhibit 3
ExGen's Nuclear Capacity by ISO

	PJM	NYISO	MISO	All ISOs
Existing capacity	18,161	3,094	1,069	22,324
To be retired	1,462	-	-	1,462
Net of retirement	16,699	3,094	1,069	20,862
% of total	80%	15%	5%	100%

Source: Company Filings

Fossil Assets

The company has ownership in about 9.5 GW of gas and oil capacity. This amount includes the 1,265 MW Handley plant that was under ExGen Texas Power, LLC's (EGTP, rating withdrawn) ownership but excludes the rest of EGTP plants. EGTP is an ExGen subsidiary currently in bankruptcy and it has been deconsolidated from ExGen's financials. EGTP's assets were liquidated, however, ExGen has reacquired the Handley plant from EGTP for $62 million. The Chapter 11 bankruptcy proceedings were finalized on April 17, 2018, resulting in the ownership of EGTP assets (other than the Handley Generating Station) being transferred to EGTP's lenders.

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Exhibit 4
ExGen Gas and Oil Capacity (includes Handley but excludes other ETGP assets)

Market	CCGT	CCGT comment	Non CCGT fossil	Non CCGT comment	Total fossil
ERCOT	2,152	Wolf Hollow II and Colorado Bend II	1,265	Handley retained from EGTP	3,417
ISO-NE	1,417	Mystic 8&9	774	includes 575 MW Mystic 7	2,191
Alabama	753	Hillabee	-		753
Alberta, CAN	-		105	Grande Prairie CT	105
Total Non PJM	4,322		2,144		6,466
PJM - ComEd	-		296	Chicago Energy CT	296
PJM - EMAAC	-		1,604		1,604
PJM - SWMAAC	-		834		834
PJM - MAAC	-		268		268
Total PJM	-		3,002		3,002
Total	**4,322**		**5,146**		**9,468**

Source: Company Filings

Renewable Assets

ExGen has ownership in about 1.5 GW of wind and solar projects and they are primarily held under its ExGen Renewables IV, LLC subsidiary. ExGen Renewables IV has a senior secured bank loan rating of Ba2 with a stable outlook.

ExGen owns 572 MW of the Conowingo run-of-river hydro facility in Maryland and the 1,070 MW Muddy Run pumped storage hydro facility in Pennsylvania. These two hydro facilities do not fall under ExGen Renewables IV.

Capital Structure

At the end of the first quarter of 2018, ExGen has a total of $11.2 billion of consolidated debt, adjusted according to Moody's methodology. Moody's adjustment includes a $1.4 billion underfunded pension liability and $604 million of operating lease and PPA adjustments.

ExGen considers about $6.8 billion of its debt to be recourse debt and $2.2 billion to be non-recourse debt. Almost all the non-recourse debt is related to its renewable portfolio and held under its ExGen Renew IV subsidiary.

ExGen Renew IV itself has about $850 million of debt (in the form of a Term Loan B). ExGen Renew IV receives direct cash flows from Antelope Valley Solar Ranch (AVSR), SolGen (a portfolio of distributed generation solar projects), Albany Green Project (biomass in Georgia) and 51% of cash flows from ExGen Renewables Partners, LLC. ExGen Renewables Partners is an intermediary holding company that owns Continental Wind, Renewable Power Generation (RPG) and some independent projects.

Antelope Valley Solar Ranch (AVSR) has about $530 million of project debt, Continental Wind, $512 million, Renewable Power Generation (RPG), $127 million and Sol Gen, $147 million.

In its first quarter 2018 earnings presentation, Exelon forecast that its 2018 year-end recourse debt balance will be $6.75 billion and non-recourse debt will be $2 billion. It also expects a recourse EBITDA of $2.85 billion and a non-recourse EBITDA of $275 million.

Detailed credit considerations

Nuclear Generation Assets in a Challenging Low Gas Price Environment

ExGen is the dominant nuclear operator in the competitive generation sector in the US, accounting for about 50% of the market share in merchant nuclear generating capacity. The company owns 15 nuclear power plants with a total of 22.3 GW of generating capacity,

giving them a significant amount of scale and diversity. ExGen also has a reputation as a competent nuclear operator with a proven track record of operating nuclear power plants safely and efficiently.

Despite its operational excellence, ExGen's nuclear fleet is under pressure due to competition from new high-efficiency gas units. These gas units are also known as CCGTs because they use combined cycle gas turbine technology to achieve high fuel efficiency for power generation. In the current gas price environment, CCGTs have a very favorable fuel cost profile because of the level of gas prices, which are very low by historical standards, and their high fuel efficiency, which is about 30% better than a typical coal or nuclear plant that uses steam turbine technology.

On a relative basis, ExGen's larger, multi-unit, nuclear plants have a similar cash cost of production compared to CCGTs. However, the large nuclear plants are considered somewhat less competitive because they have to run base load while the gas units can avoid running during off-peak hours when spot prices fall below their variable cost.

Nuclear Fleet in Favorable Location

Most of ExGen's nuclear fleet (80%) is located in the PJM market. PJM is considered a favorable market for generators from a credit perspective because PJM, along with ISO-NE, are designed with a three-year forward capacity market, which provides significant cash flow stability and visibility for generators.

Furthermore, most of ExGen's nuclear facilities are located within premium capacity zones of PJM, such as ComEd and EMAAC, where capacity prices have cleared above the system wide price. In the most recent auction, which is for 2021/2022 delivery, capacity prices in ComEd and EMAAC cleared at $196/MW-day and $166/MW-day, respectively, while the system wide price was significantly lower, at $140/MW-day. Despite the favorable pricing, a good portion of ExGen's nuclear capacity (> 5 GW) failed to clear in the last auction (see table below).

Exhibit 5
A significant portion of ExGen's capacity did not clear 2021/2021 PJM auction

	Nuclear			Non Nuclear		
Market	**Cleared MW**	**Installed MW ***	**Cleared/ installed MW**	**Cleared**	**Installed MW**	**% Cleared**
PJM - ComEd	5,175	10,296	50%	-	296	0%
PJM - EMAAC	3,925	4,627	85%	2,100	3,246	65%
PJM - SWMAAC	850	888	96%	850	834	102%
PJM - MAAC				225	268	84%
Total PJM	***9,950***	***15,811***	***63%***	***3,175***	***4,644***	***68%***

* Net of planned retirement and assumes 50% CENG ownership.
Source: PJM, Company Filings

ZEC Payments Important For Single Unit Nuclear Facilities

ExGen has five smaller, single-unit nuclear plants that are economic challenged. They include the 625 MW Oyster Creek, 837 MW Three Mile Island, 1,069 MW Clinton, 842 MW FitzPatrick, and 576 MW Ginna. The 1,870 MW Quad Cities, which ExGen has 75% ownership interest, is also under economic distress even though it is considered to be a large nuclear plant.

Oyster Creek and Three Mile Island are scheduled to retire in 2018 and 2019. Clinton, Quad Cities, Fitzpatrick and Ginna will continue to operate and remain profitable because of financial support from zero emission credits (ZECs). Zero emission credits are a form of subsidy for nuclear power plants to compensate them for their zero emission attributes in the context of climate change concerns.

New York and Illinois have agreed to provide a total combined annual subsidy of roughly $525 million. We estimate that ExGen's cash flow to debt ratio is about 200 basis points higher compared to the early retirement case, due to the ZECs from New York and Illinois. New York and Illinois' ZEC programs are under legal challenges from fossil generators. We view the risk of a successful legal challenge to be low because both New York and Illinois District Courts have dismissed the cases. The plaintiffs have appealed the cases to the 2nd and 7th Circuit Courts, respectively.

New Jersey also passed a zero emission subsidy program in May 2018. New Jersey ZECs should provide meaningful cash flows for ExGen's 42.59% ownership interest in the 2,364 MW Salem nuclear plant.

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Exhibit 6
List of ExGen's Nuclear Power Plants

Power Plant	State	No. of units	Plant Capacity (MW)	Owned capacity (MW)	Owned capacity with 100% CENG (MW)	Location	Comment
Illinois							
Braidwood	IL	2	2,381	2,381	2,381	PJM - ComEd	
LaSalle	IL	2	2,320	2,320	2,320	PJM - ComEd	
Byron	IL	2	2,347	2,347	2,347	PJM - ComEd	
Dresden	IL	2	1,845	1,845	1,845	PJM - ComEd	
Quad Cities	IL	2	1,871	1,403	1,403	PJM - ComEd	Receving IL ZES
Clinton	IL	1	1,069	1,069	1,069	MISO - Zone 4	Receving IL ZES
Total Illinois			**11,833**	**11,365**	**11,365**		
Pennsylvania							
Peach Bottom	PA	2	2,606	1,303	1,303	PJM - EMAAC - PECO	
Limerick	PA	2	2,317	2,317	2,317	PJM - EMAAC - PECO	
Three Mile Island	PA	1	837	837	837	PJM - MAAC - MetEd	Scheduled to close in 2019
Total Pennsylvania			**5,760**	**4,457**	**4,457**		
New York							
Nine Mile Point [1]	NY	2	3,812	838	1,676	NYISO	Receving NY ZECs
R.E. Ginna [1]	NY	1	1,152	288	576	NYISO	Receving NY ZECs
FitzPatrick	NY	1	842	842	842	NYISO	Receving NY ZECs
Total New York			**5,805**	**1,968**	**3,094**		
New Jersey							
Salem	NJ	2	2,364	1,007	1,007	PJM - EMAAC - PSEG	NJ ZECs safety net
Oyster Creek	NJ	1	2,386	625	625	PJM - EMAAC - JCPL	Scheduled to close in 2019
Total New Jersey			**4,750**	**1,632**	**1,632**		
Maryland							
Calvert Cliffs [1]	MD	2	1,776	888	1,776	PJM - SWMAAC	
Total Maryland			**1,776**	**888**	**1,776**		
Total				***20,310***	***22,324***		

[1] Under CENG ownership
Source: Exelon Q4 2017 10-K

PJM's Market Reform is a Credit Positive

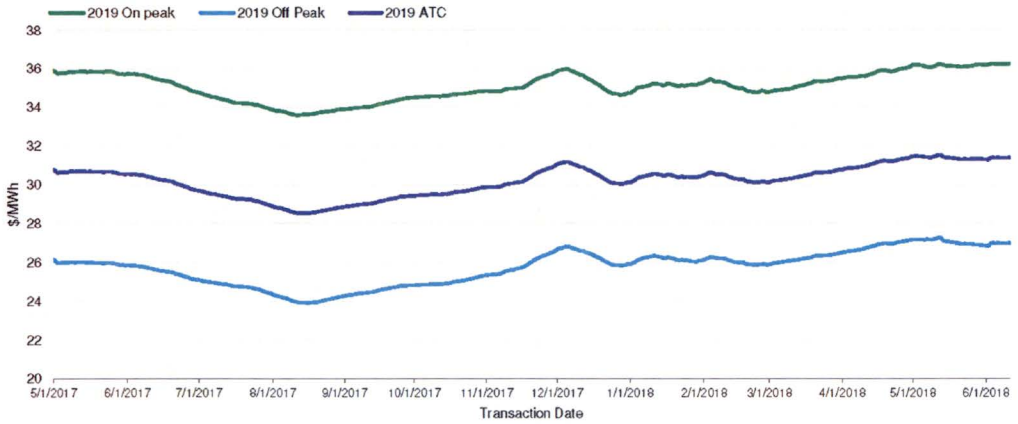
PJM has proposed new bidding rules for inflexible generation in the energy market. The new rule for the bidding rule of inflexible generation units, which likely would take effect in 2019, could raise spot market prices and bolster generators' cash flows. The size of the gain has the potential to be fairly significant: according to PJM's simulation, spot energy prices may increase by $3.50 per megawatt-hour, which would translate into an additional $500 million pretax cash flow for ExGen, assuming no hedging.

The rule change involves a market microstructure for how inflexible generating units are bid into the spot market for power trading. A generation unit is deemed inflexible if it has to run at a certain minimum load because of technical or economic reasons. Based on existing rules, these inflexible units are prohibited from setting prices when quantities are below their minimum utilization rates because they risk driving up market prices owing to the cost of their inflexibility. However, under the new rule, inflexible units are recognized as part of market dynamics and are free to set the market price even if they drive up prices.

Although this reform has the potential to benefit generators greatly, we are circumspect on the actual upside, especially for the period beyond 2021. The power market is extremely complex and subject to many volatile commodity and operational factors. The upside that PJM modeled is based on a theoretical scenario. Additionally, current forward prices have not improved significantly in the past year. This leads us to conclude that the forward market has not priced in a $3.50 per megawatt-hour price uplift as PJM has suggested.

PJM has also proposed the capacity market reform to limit the effects of subsidized generation, such as the nuclear plants that are currently receiving ZECs. PJM has presented two options to FERC – MOPR-Ex and Capacity Repricing. Both of these options will bolster capacity prices but under the MOPR-Ex proposal, subsidized plants are unlikely to receive any capacity payments. ExGen currently has one plant – Quad Cities – that is receiving ZECs and cleared the latest PJM capacity market auction.

Exhibit 7
2019 Delivery Prices for PJM West
20-Day Rolling Average



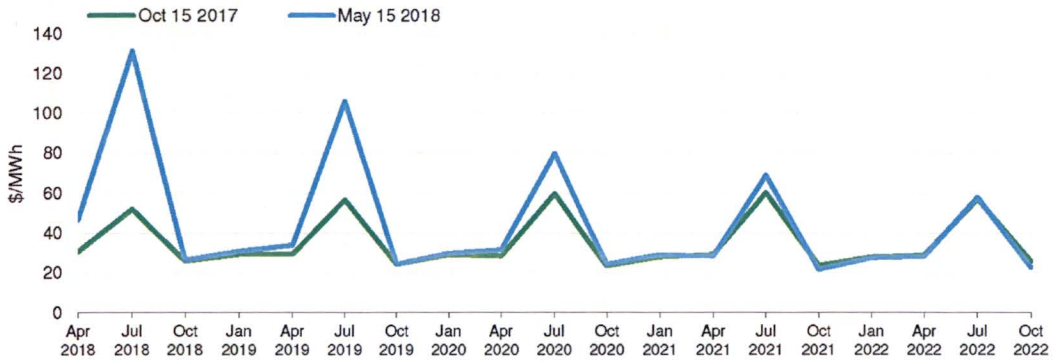
Source: SPGMI

ERCOT Market Tightens in 2018

After years of oversupply and rock-bottom prices, the ERCOT market has suddenly found itself in a tight supply-demand position. This is in large part due to Vistra's decision to retire 4.2 GW of its uneconomic coal-based generating capacity in early 2018. However, the sustainability of the currently high prices is uncertain because of the potential for new entrants, especially starting in 2020, which could drive down prices again.

The ERCOT forward market is in strong backwardation (i.e., there is a declining forward curve.) The figure below compares the forward prices as of October 15, 2017 and May 15, 2018. Forward on-peak prices for the third quarter of 2018 and 2019 shot up to $131/MWh and $106/MWh by May 15, 2018, from $52/MWh and $56/MWh on October 15, 2017. The price improvement, however, tails off quickly in 2020 and 2021. By 2022, the improvement has completely gone away. The steep backwardation of the forward curve suggests that the market believes that eager developers will again build more new capacity than the market needs in a couple of years.

Exhibit 8
ERCOT on-peak forward prices



Source: SPGMI

In the ERCOT market, ExGen owns the 1,265 MW Handley steam gas plant and two recently built plants – 1,088 MW Colorado Bend Energy Center II in the Houston zone and 1,064 MW Wolf Hollow II in the North zone of the ERCOT market. These two recently built plants are some of the most advanced gas plants available on the market, with both high fuel efficiency and dispatch flexibility.

Renewable Portfolio Will Contribute Minimal Cash Flows

ExGen consolidated its renewable holdings under ExGen Renewables IV in 2017 and put in place an $850 million term loan B credit facility at this entity. Even though ExGen's renewable portfolio contains high-quality assets with long-term cash flows, we expect ExGen to receive little or no dividend distributions from ExGen Renewables IV over the next few years because of the stringent cash sweep requirements of the term loan B facility.

Plant in New England Appears to be in Distress

ExGen owns the 2,000 MW Mystic plant (unit 7, 8, and 9) in Massachusetts. This plant appears to be economically challenged because the company filed a deactivation notice with ISO-NE in March of 2018 that it intends to retire this facility on June 1, 2022 due to economic reasons. Even though Mystic 8 and 9 will likely continue to run under reliability-must-run contracts or agreements that have similar effects due to ISO-NE's concerns surrounding grid reliability, we do not think this plant will provide a significant amount of cash flows going forward.

Retail Operation Provides Significant Value

ExGen's retail operation enhances ExGen's business model because of the significant synergistic value associated with matching generation with retail load, both in terms of collateral savings and enhanced ability to hedge basis and variable load risk. More importantly, it allows ExGen to take advantage of its large generation asset base and, in our estimate, earn an additional $1/MWh to $1.5/MWh of free cash flow. Assuming a retail volume of 210 TWh, the retail operation would provide between $210 million and $315 million of free cash flows.

Cash Flow Leverage Projected to Improve

For the past two years, ExGen's cash flow leverage, as measured by CFO Pre-WC to debt, has been relatively weak for its credit profile, 28.7% in 2016 and 29.2% in 2017. We expect ExGen's CFO Pre-WC to debt to improve to the mid-30% range in 2018 and 2019, due to a combination of nuclear subsidies, operating cost reductions and lower tax payments. We estimate that the tax reform will enhance ExGen cash flows by about $200 million to $300 million per year.

Our standard CFO Pre-WC to debt calculation reflects the GAAP accounting treatment for nuclear fuel, which is capitalized and then depreciated over time. To ensure comparability with other generators who do not capitalize their fuel cost, we also calculate ExGen's nuclear fuel cost as if they are a cash expense. Using this approach, ExGen CFO Pre-WC to debt would be lowered to 19.2% in 2016 and 19.3% in 2017. Our CFO Pre-WC to debt projection would be in the mid-20% range in 2018 and 2019.

If we deconsolidate ExGen's non-recourse entities, ExGen's cash flow leverage improves significantly. The CFO Pre-WC to debt ratio (net of nuclear fuel) would improve by 300 basis points in 2017. We note that our standard financial adjustments currently do not deconsolidate non-recourse entities from our cash flow leverage calculations. However, given that ExGen is unlikely to receive any dividends from its non-recourse entities for the next few years and its history of abandoning non-performing projects, we consider ExGen's deconsolidated metrics to be a meaningful input in our credit evaluation process.

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Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Exhibit 9

Deconsolidation improves CFO Pre-WC to Debt by 300 bps

Consolidated Calculation		
	2017	% debt
CFO PreWC	3,227	29%
Nuclear fuel	1,096	10%
CFO PreWC net of nuclear fuel	2,131	19%
Total Debt	***11,058***	
Recourse Only Calculation		
	2017	% debt
CFO PreWC	3,043	35%
Nuclear fuel	1,096	13%
CFO PreWC net of nuclear fuel	1,947	22%
Total recourse debt	***8,758***	

Source: Moody's Investors Service

Liquidity analysis

ExGen has a heavy need for liquidity due to being a large volume user of commodity forwards and futures for its hedging strategy. Based on modeled results, we believe that the company has adequately demonstrated that it has sufficient liquidity to handle severe credit and market events.

The company's main source of liquidity is $5.8 billion of revolving credit facilities and bilateral credit facilities. The revolving credit facility expires in May 2022. Under the terms of the revolver, ExGen must maintain an interest coverage ratio of 3x. At the end of the first quarter of 2018, ExGen was in compliance with this financial covenant with an interest coverage of 13x, as reported in its latest 10-Q. The credit facilities do not contain a material adverse change clause as a pre-condition for drawings. As of 31 March 2018, ExGen also had cash holdings of $610 million as another source of liquidity.

ExGen's liquidity demands are mostly from trade collateral. Most of the $1.45 billion usage under the credit facilities as of 31 March 2018 was to issue letters of credit to support trade collateral. ExGen also had about $165 million of commercial paper outstanding at the end of March 2018.

ExGen has $600 million of senior unsecured notes due in 2019 and $2.55 billion due in 2020 (including $550 million of CENG notes.) ExGen's capital expenditure program also creates a significant demand for liquidity. According to Exelon's projection at year end 2017, forecast capital expenditure (base plus committed growth) for ExGen is expected to be about $2.1 billion in 2018. We, however, expect that the company will be able to fund these capital expenditures using cash flow from operations.

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Rating methodology and scorecard factors

Exhibit 10

Rating Factors				
Exelon Generation Company, LLC				
Unregulated Utilities and Unregulated Power Companies Industry Grid [1][2]	Current LTM 3/31/2018		Moody's 12-18 Month Forward View As of Date Published [3]	
Factor 1 : Scale (10%)	**Measure**	**Score**	**Measure**	**Score**
a) Scale (USD Billion)	A	A	A	A
Factor 2 : Business Profile (40%)				
a) Market Diversification	Baa	Baa	Baa	Baa
b) Hedging and Integration Impact on Cash Flow Predictability	Baa	Baa	Baa	Baa
c) Market Framework & Positioning	Baa	Baa	Baa	Baa
d) Capital Requirements and Operational Performance	Baa	Baa	Baa	Baa
Factor 3 : Financial Policy (10%)				
a) Financial Policy	A	A	A	A
Factor 4 : Leverage and Coverage (40%)				
a) (CFO Pre-W/C + Interest) / Interest (3 Year Avg)	7.5x	Baa	7.5x - 8x	Baa
b) (CFO Pre-W/C) / Debt (3 Year Avg)	29.5%	Baa	30% - 35%	Baa
c) RCF / Debt (3 Year Avg)	23.3%	Baa	24% - 29%	A
Rating:				
a) Indicated Rating from Grid		Baa1		Baa1
b) Actual Rating Assigned		Baa2		Baa2

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of 3/31/2018 (LTM)
[3] This represents Moody's forward view; not the view of the issuer; and unless noted in the text, does not incorporate significant acquisitions and divestitures.
Source: Moody's Financial Metrics™

Ratings

Exhibit 11

Category	Moody's Rating
EXELON GENERATION COMPANY, LLC	
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Commercial Paper	P-2
PARENT: EXELON CORPORATION	
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Jr Subordinate	Baa3
Commercial Paper	P-2

Source: Moody's Investors Service

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Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Appendix

Exhibit 12

Peer Comparison [1]

	Exelon Generation Company, LLC Baa2 Stable			PSEG Power LLC Baa1 Stable			Calpine Corporation Ba3 Negative			Vistra Energy Corp. Ba2 Positive		NRG Energy, Inc. Ba3 Positive		
(In US millions)	FYE Dec-16	FYE Dec-17	LTM Mar-18	FYE Dec-16	FYE Dec-17	LTM Mar-18	FYE Dec-16	FYE Dec-17	LTM Mar-18	FYE Dec-17	LTM Mar-18	FYE Dec-16	FYE Dec-17	LTM Mar-18
Revenue	17,751	18,466	19,100	4,023	3,930	4,064	6,716	8,752	8,480	5,430	4,838	10,512	10,629	10,668
CFO Pre-W/C	3,508	3,227	3,671	1,323	1,294	1,300	1,179	856	488	1,208	998	2,148	1,584	1,949
Total Debt	12,217	11,058	11,169	2,625	2,913	2,654	12,461	11,705	11,362	4,950	4,848	17,958	17,623	17,572
(CFO Pre-W/C + Interest) / Interest Ex	7.1x	6.5x	7.3x	10.2x	10.6x	11.4x	2.8x	2.3x	1.8x	6.0x	5.2x	3.2x	2.7x	3.2x
(CFO Pre-W/C) / Debt	28.7%	29.2%	32.8%	50.4%	44.4%	49.0%	9.5%	7.3%	4.1%	24.9%	20.6%	12.0%	9.0%	11.1%
(CFO Pre-W/C - Dividends) / Debt	21.2%	23.2%	28.7%	40.9%	32.4%	42.4%	9.4%	7.2%	4.0%	24.9%	20.6%	11.5%	8.8%	10.9%
Debt / Book Capitalization	38.8%	36.1%	36.4%	24.9%	28.8%	26.0%	78.9%	79.2%	83.0%	43.3%	44.4%	88.8%	90.6%	89.2%

[1] All figures & ratios calculated using Moody's estimates & standard adjustments. FYE = Financial Year-End. LTM = Last Twelve Months. RUR* = Ratings under Review, where UPG = for upgrade and DNG = for downgrade.

Source: Moody's Financial Metrics™

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CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

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S&P Global
Ratings

RatingsDirect®

Research Update:

Exelon Corp. And Subsidiaries Outlooks Revised To Positive, Ratings Affirmed On Expectation For Reduced Business Risk

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ATTACHMENT 2
Standard & Poor's, Fitch and Moody's and Current Ratings for Exelon Corporation and Exelon Generation Company

Research Update:

Exelon Corp. And Subsidiaries Outlooks Revised To Positive, Ratings Affirmed On Expectation For Reduced Business Risk

Overview

- Exelon's second quarter financial results and the quality of the company's cash flow continue to gradually improve reflecting solid management of regulatory risk, growth of its lower risk regulated utilities, and the stability of the zero emission credits (ZECs).
- We are revising our outlooks on Exelon Corp. and its subsidiaries to positive from stable and are affirming all of our ratings on the companies.
- The positive outlook reflects our expectation for reduced businesses risk, which is consistent with the rising proportion of Exelon's cash flow that it generates from its lower-risk utility operations, and less volatile ZECs. In addition, we expect the company's financial measures to consistently remain in the higher half of the range for our current assessment of its financial risk profile, including a funds from operations (FFO)-to-debt ratio of about 19%.

Rating Action

On Aug. 2, 2018, S&P Global Ratings revised its outlooks on Exelon Corp. and its subsidiaries Commonwealth Edison Co. (ComEd), PECO Energy Co. (PECO), Exelon Generation Co. LLC (ExGen), Pepco Holdings LLC (PHI), Potomac Electric Power Co. (Pepco), Atlantic City Electric Co. (ACE), Delmarva Power & Light Co. (Delmarva), and Baltimore Gas and Electric Co. (BGE) to positive from stable and affirmed all of its ratings on the companies.

Rationale

The positive outlook reflects our expectation that Exelon will continue to gradually reduce its business risk while maintaining financial measures that are consistently in the higher half of the range for its financial risk profile category. Exelon's second-quarter results were in line with these expectations.

Strategically, the company continues to reduce its regulatory lag and earn closer to its authorized returns on equity through the use of its many regulatory mechanisms and timely rate case fillings. The recent enactment of

the distribution system investment charge legislation in Delaware is consistent with the company's strategic efforts. Furthermore, Exelon continues to invest more than 70% of its capital spending in its lower-risk regulated utilities, disproportionately growing its regulated businesses relative to its other segments to the benefit of its business risk.

During the past year, ZECs were approved in New York, Illinois, and New Jersey, which will add more stable and predictable cash flows for the company's merchant business. Therefore, we expect that the company's cash flow will be less volatile because its utility operations and ZECs will account for about 75% of its consolidated EBITDA.

The issuer credit rating on Exelon reflects our assessment of the company's business risk profile as strong and our assessment of its financial risk profile as significant.

Our assessment of Exelon's business risk profile reflects our projection that the company's lower-risk, rate-regulated utility businesses will account for about 65% of the company's consolidated EBITDA while the more-predictable ZECs will account for about 10%. The merchant business will continue to be constrained by weak power prices and challenging capacity prices. However, price reform in the PJM Interconnection LLC (PJM) and the capacity markets could provide some upside. Under our base-case scenario, we expect that the company will continue to benefit from stable ZECs revenue despite the current legal challenges in New York and Illinois.

We assess Exelon's financial measures against more relaxed benchmarks than we use for a typical industrial company because it derives the majority of its EBITDA from its lower-risk, rate-regulated utility business and has effectively managed its regulatory risk. Under our base-case scenario, we assume continued consistent rate increases for all of Exelon's regulated utilities, continued weak power prices that are only partially offset by the ZECs, and robust annual capital spending averaging about $6.5 billion. We expect that the company's financial measures will consistently be in the higher half of the range for the company's financial risk profile category. Specifically, we expect that the company will maintain an FFO-to-debt ratio of about 19%. In 2017, Exelon's FFO-to-debt was 19.7%.

We assess Exelon's management and governance as strong. This incorporates our view that the company's management team is very effective in its stewardship of its operating assets and in growing the company in a manner that supports its credit quality while consistently communicating its strategies to all interested stakeholders.

Under our group rating methodology, we view Exelon as the parent of a group whose members include the merchant business Exelon Generation Co. LLC; regulated utilities Commonwealth Edison Co., PECO Energy Co., Baltimore Gas & Electric Co., Potomac Electric Power Co., Delmarva Power & Light Co., and Atlantic City Electric Co.; and intermediary utility holding company Pepco Holdings LLC. We assess all of the subsidiaries as core businesses of Exelon

because they are highly unlikely to be sold, possess a strong long-term commitment from the parent's management team, are successful, and are closely linked to the parent's name and reputation.

Liquidity

Exelon has adequate liquidity, in our view, and could more than cover its liquidity needs for the next 12 months even if its consolidated EBITDA declined by 10%. We expect Exelon's liquidity sources to exceed its uses by more than 1.1x over the next 12 months. Under our stress scenario, we do not expect that Exelon will need to access the capital markets during the period to meet its liquidity needs. Our assessment also reflects the company's stable cash flow generation, generally prudent risk management, sound relationships with its banks, and generally satisfactory standing in the credit markets.

Principal liquidity sources:

- Consolidated credit facility availability of about $9.45 billion;
- Annual FFO of about $8 billion; and
- Cash on hand of about $500 million.

Principal liquidity uses:

- Long-term debt maturities of about $1.0 billion in 2019;
- Annual capital spending of about $6.5 billion; and
- Annual dividend payments of $1.3 billion.

Outlook

The positive outlook reflects our expectation for reduced businesses risk, which is consistent with the rising proportion of Exelon's cash flow that it generates from its lower-risk utility operations, and less volatile ZECs. Overall, we expect that these components will reflect about 75% of consolidated EBITDA. In addition, we expect the company's financial measures to consistently remain in the higher half of the range for our current assessment of its financial risk profile, reflecting a funds from operations (FFO)-to-debt ratio of about 19%.

Downside scenario

We could affirm our ratings on Exelon and revise the outlook to stable over the next 12-18 months if the company's financial performance weakens, reflecting FFO-to-debt consistently below 19%. We could also affirm the ratings and revise the outlook to stable if Exelon's management of regulatory risk weakens or if its regulated utilities and ZECs do not consistently account for about 75% of its consolidated EBITDA.

Upside scenario

We could raise our rating on Exelon and its subsidiaries by one notch within the next few quarters if the company's lower-risk regulated utilities and ZECs consistently account for about 75% of its consolidated EBITDA, it continues to effectively manage its regulatory risk, and it maintains its current financial performance, reflecting an FFO-to-debt ratio of about 19%.

Ratings Score Snapshot

Issuer Credit Rating: BBB/Positive/A-2

Business risk: Strong
- Country risk: Very low
- Industry risk: Low
- Competitive position: Strong

Financial risk: Significant
- Cash flow/Leverage: Significant

Anchor: bbb

Modifiers
- Diversification/Portfolio effect: Neutral (no impact)
- Capital structure: Neutral (no impact)
- Liquidity: Adequate (no impact)
- Financial policy: Neutral (no impact)
- Management and governance: Strong (no impact)
- Comparable rating analysis: Neutral (no impact)

Stand-alone credit profile: bbb
Group credit profile: bbb

Issue Ratings--Subordination Risk Analysis

Capital structure

- Exelon's current capital structure consists of about $36 billion of total debt of which about $28 billion is outstanding at its subsidiaries.

Analytical conclusions

- We rate Exelon's unsecured debt one notch below our issuer credit rating on the company because it ranks behind a significant amount of debt issued by the company's subsidiaries in the capital structure.

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Related Criteria

- Criteria - Corporates - General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings , April 7, 2017
- Criteria - Corporates - General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria - Corporates - Industrials: Key Credit Factors For The Unregulated Power And Gas Industry, March 28, 2014
- Criteria - Corporates - General: Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- Criteria - Corporates - General: Corporate Methodology, Nov. 19, 2013
- Criteria - Corporates - Utilities: Key Credit Factors For The Regulated Utilities Industry, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Group Rating Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- Criteria - Corporates - Utilities: Collateral Coverage And Issue Notching Rules For '1+' And '1' Recovery Ratings On Senior Bonds Secured By Utility Real Property, Feb. 14, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009
- Criteria - Insurance - General: Hybrid Capital Handbook: September 2008 Edition, Sept. 15, 2008

Ratings List

Ratings Affirmed; Outlook Action

	To	From
Exelon Corp.		
PECO Energy Co.		
Exelon Generation Co. LLC		
Commonwealth Edison Co.		
Issuer Credit Rating	BBB/Positive/A-2	BBB/Stable/A-2
Atlantic City Electric Co.		
Potomac Electric Power Co.		
Delmarva Power & Light Co.		
Issuer Credit Rating	BBB+/Positive/A-2	BBB+/Stable/A-2

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Baltimore Gas & Electric Co.		
Issuer Credit Rating	A-/Positive/A-2	A-/Stable/A-2
PEPCO Holdings Inc.		
Issuer Credit Rating	BBB+/Positive/--	BBB+/Stable/--

Ratings Affirmed

Exelon Corp.	
Senior Unsecured	BBB-
Junior Subordinated	BBB-
Commercial Paper	A-2
Atlantic City Electric Co.	
Senior Secured	A
Recovery Rating	1+
Commercial Paper	A-2
Baltimore Gas & Electric Co.	
Senior Unsecured	A-
Preference Stock	BBB
Commercial Paper	A-2
Commonwealth Edison Co.	
PECO Energy Co.	
Senior Secured	A-
Recovery Rating	1+
Preferred Stock	BB+
Commercial Paper	A-2
Delmarva Power & Light Co.	
Senior Secured	A
Recovery Rating	1+
Senior Unsecured	BBB+
Commercial Paper	A-2
Exelon Generation Co. LLC	
Senior Unsecured	BBB
Commercial Paper	A-2
PEPCO Holdings Inc.	
Senior Unsecured	BBB
Potomac Electric Power Co.	
Senior Secured	A
Recovery Rating	1+
Commercial Paper	A-2

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Certain terms used in this report, particularly certain adjectives used to express our view on rating relevant factors, have specific meanings ascribed to them in our criteria, and should therefore be read in conjunction with such criteria. Please see Ratings Criteria at www.standardandpoors.com for further information. Complete ratings information is available to subscribers of RatingsDirect at www.capitaliq.com. All ratings affected by this rating action can be found on S&P Global Ratings' public website at www.standardandpoors.com. Use the Ratings search box located in the left column.

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ATTACHMENT 3
UPDATED ISFSI DECOMMISSIONING FUNDING PLAN FOR ZION NUCLEAR POWER STATION

ATTACHMENT 3
UPDATED ISFSI DECOMMISSIONING FUNDING PLAN FOR ZION NUCLEAR POWER STATION

1.0 BACKGROUND

By letter dated July 24, 2018, (Reference 1) ZionSolutions, LLC (ZS) and Exelon Generation Company, LLC (EGC) submitted for the U.S. Nuclear Regulatory Commission (NRC) review and approval an application requesting that the NRC consent to the transfer of ZS's Facility Operating License for Zion Nuclear Power Station (ZNPS) (Nos. DPR-39 and DPR-48) and the transfer of the generally licensed Independent Spent Fuel Storage Installation for ZNPS, Units 1 and 2, to EGC.* Upon License transfer approval and the subsequent transfer of the License, EGC becomes responsible for managing the spent nuclear fuel and greater than class C (GTCC) waste (referred to collectively as "spent fuel management") and providing funding for spent fuel management costs at ZNPS after the removal of spent fuel, high-level radioactive waste, and/or reactor-related GTCC waste from storage. In 2010, at the time of transferring the ZNPS license to ZS, EGC retained $25 million in its Non-Qualified Decommissioning Trust Fund (referred to as the "ISFSI Trust Fund") for maintenance and decommissioning of the Independent Spent Fuel Storage Installation (ISFSI) following site decommissioning completion and return of the license to EGC. The proposed license transfer does not result in a change of ownership of the EGC ISFSI Trust Fund.

ZS and EGC have requested NRC approval of the License transfer by July 24, 2019 and, subject to NRC approval, anticipate the License transfer back to EGC to be completed no later than December 30, 2019.

The previous Decommissioning Funding Plan (DFP) and cost estimate for the ISFSI were submitted by EGC on October 17, 2016 (Reference 2). The DFP provided herein reflects the information provided in Reference 2 updated to dollar values as of December 31, 2018. This submittal fulfills the 10 CFR 72.30(c) requirement for timely resubmittal of the DFP every three (3) years.

2.0 SUMMARY DESCRIPTION

EGC maintains a cost estimate for spent fuel management costs and decommissioning of the ZNPS ISFSI, which is periodically updated and adjusted as deemed appropriate by EGC and in compliance with applicable regulatory requirements. This cost estimate includes the costs associated with decommissioning the ISFSI. 10 CFR 72.30, "Financial assurance and recordkeeping for decommissioning," requires that the funding plan for decommissioning the ISFSI be resubmitted periodically with adjustments, as necessary, to account for changes in costs and the extent of contamination. EGC has extracted from this cost estimate, and provides herein, information supporting this required response for ZNPS, Units 1 and 2.

EGC notes that radiological decommissioning costs for ISFSIs typically consist of the removal and disposal of small volumes of neutron-activated concrete and certain structural steel components. No impact is expected upon soil and groundwater at ZNPS during the storage periods contemplated in the cost estimate. EGC also notes that induced radioactivity at the ZNPS ISFSI is not expected to result in residual radioactivity in excess of 25 mRem/yr in an unrestricted release scenario, were no action to be taken to remediate the site. However, since EGC anticipates that there may be small, but measurable,

* Unless otherwise noted, future references to the "License" include the general license for the Zion Independent Spent Fuel Storage Installation.

amounts of induced radioactivity present and release of this material from ZNPS will likely require it to be disposed of at an NRC licensed radioactive waste disposal facility, EGC has included these costs in its cost estimate.

3.0 DETAILED DESCRIPTION

3.1 Reasonable Assurance of Funds Availability

In Reference 3, EGC described certain terms of the sale agreement of ZNPS to ZS which required ZS to construct an ISFSI, transfer the spent nuclear fuel and GTCC waste to the ISFSI, and decommission the ZNPS Units except for the ISFSI. The NRC approved the corresponding license transfer via Reference 4.

Following the completion of the sale, EGC transferred the funds in the ZNPS Units' Qualified and Non-Qualified Decommissioning Trust Funds into Qualified and Non-Qualified Decommissioning Trust Funds established by ZS. As part of the transfer of funds to ZS, EGC segregated $25 million to be retained in EGC's Non-Qualified Decommissioning Trust Fund (the ISFSI Trust Fund) for the purpose of funding the maintenance and decommissioning of the ISFSI after ZS completes the decommissioning of the rest of the ZNPS site and the License transfers back to EGC.

Table 1 shows the ISFSI Trust Fund assets and the costs estimated for ISFSI decommissioning as required under 10 CFR 72.30(b), as of December 31, 2018.

3.2 Detailed Cost Estimate and Adjustments

A detailed cost estimate was developed to estimate the costs (in 2016 dollars) to manage the spent nuclear fuel in an ISFSI on the ZNPS site and decommission the ISFSI (Reference 2). The analysis relies upon site-specific information reflecting current assumptions pertaining to the disposition of the spent fuel and the design of the spent fuel dry storage facilities.

The cost estimate assumes that once decommissioning and demolition of ZNPS are complete, currently scheduled to occur no later than December 30, 2019, the site License and responsibility for ISFSI spent fuel management and decommissioning are to be transferred back to EGC from ZS.

EGC currently intends to use an independent contractor to perform all activities associated with the decommissioning of the ISFSI. Table 2 shows the cost for an independent contractor to perform all radiological decommissioning activities, with an adequate contingency to meet the 10 CFR 20.1402 criteria for unrestricted use. All costs have a 25% contingency factor applied consistent with the evaluation criteria referenced by the NRC in NUREG-1757 (Reference 5), except Items 11 through 15 and Item 17 in Table 2. Costs associated with Items 11 through 15 and Item 17 have a 15% contingency factor applied to them. A 15% contingency factor was applied instead of 25% for these items because experience with these types of costs has been more predictable and there has been a lower likelihood of unforeseen increases associated with these types of costs.

The cost estimate provided herein has been escalated to December 31, 2018 dollars. The method used to escalate was performed in two steps. The first step increased the cost estimate to June 30, 2018 dollars using the Employment Cost Index, Total Compensation

Private Industry Workers. The second step increased the cost estimate to December 31, 2018 dollars using a forecasted average annual escalation rate of 2.864%. This rate is based on past performance of the Employment Cost Index, Total Compensation Private Industry Workers.

3.3 Assumptions

EGC has made the following assumptions within the ZNPS cost estimate with respect to the site ISFSI decommissioning:

1. ZNPS's site license is to be transferred back to EGC in September 2019. This date is conservative relative to the date in the license transfer agreement (no later than December 30, 2019). All values in Table 2 are at ownership share. The ownership share for EGC of ZNPS is 100%.
2. All ISFSI decommissioning costs are conservatively expected to be incurred beginning in the year in which the all spent fuel has been removed from the site.
3. For the purposes of the cost estimate, the transfer of all ZNPS spent fuel to the DOE is assumed to be completed in 2032. This date assumes the DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority, the DOE will give priority to removing fuel from shutdown sites, and that the DOE begins removing spent fuel from commercial facilities in 2025 with an annual capacity of 3,000 metric tons of uranium. Any delay in transfer of fuel to DOE or decrease in the rate of acceptance will correspondingly prolong the transfer process and result in spent fuel remaining at the site longer than anticipated. As part of the periodic updates to the cost estimate, the assumptions regarding DOE fuel removal from the site are reviewed and adjusted based on new information or considerations.
4. The trust fund assets allocated for ISFSI Decommissioning earn a 2% annual real rate of return, consistent with 10 CFR 50.75(e)(1)(i).

3.4 Method of Assurance

In accordance with 10 CFR 72.30(b)(4), Table 1 describes the method from 10 CFR 72.30(e) selected by EGC for assuring funds for ISFSI decommissioning. EGC periodically updates the cost estimate associated with the site-specific assurance method and adjusts the funding levels, as necessary, in accordance with 10 CFR 50.75.

The cost estimate is periodically updated and adjusted, as deemed appropriate, by EGC and in compliance with applicable regulatory requirements. Currently, EGC performs a comprehensive update to cost estimates at least once every 5 years in accordance with Regulatory Guide 1.159, Revision 2, Section C.1.4.3, "Frequency of Adjustment" (Reference 7). In addition, on an annual basis the cost estimate is adjusted to account for inflation.

3.5 Volume of Subsurface Residual Radioactivity Requiring Remediation

EGC has not identified any onsite, subsurface material containing residual radioactivity at the ISFSI.

3.6 Effects of Events Listed in 10 CFR 72.30(c)

The previous Zion ISFSI DFP was submitted by letter dated October 17, 2016 (Reference 2) and was based on an updated cost estimate. Each of the items listed in 10 CFR 72.30(c)(1) through (4) was considered in preparation of the 2016 updated cost estimate as noted in Reference 6. The DFP provided herein relies on the 2016 cost estimate. Therefore, the effects, if any, since 2016 of the following events listed in 10 CFR 72.30(c)(1)-(4) have been specifically considered in the decommissioning costs provided in Table 2:

1. Spills of radioactive material producing additional residual radioactivity in onsite subsurface material

   No impact. There have been no spills of radioactive material producing additional residual radioactivity in onsite subsurface material from 2016 to 12/31/2018 at the Zion ISFSI.

2. Facility modifications

   No impact. There have been no modifications to the Zion ISFSI from 2016 to 12/31/2018 that affect the cost estimate.

3. Changes in authorized possession limits

   No impact. There have been no changes in authorized possession limits at the Zion ISFSI from 2016 to 12/31/2018.

4. Actual remediation costs that exceed the previous cost estimate

   No impact. No actual remediation costs have been incurred at the Zion ISFSI, so no actual remediation costs exceed the previous cost estimate.

3.7 Certification of Financial Assurance

In accordance with 10 CFR 72.30(b), financial assurance for decommissioning the ISFSI has been provided in an amount that equals or exceeds the cost estimate for ISFSI decommissioning, as demonstrated in Table 1.

4.0 REFERENCES

1. Letter from Ken Robuck (ZionSolutions, LLC) and J. Bradley Fewell (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Application for License Transfers and Conforming Administrative License Amendments," dated July 24, 2018 (ZS-2018-0040) (ADAMS Accession No. ML18211A303)

2. Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Independent Spent Fuel Storage Installation (ISFSI) Decommissioning Funding Plan for Zion," dated October 17, 2016 (RS-16-204) (ADAMS Accession No. ML1629A505)

3. Letter from T. S. O'Neill (Exelon Generation Corporation) and J. Christian (ZionSolutions, LLC) to U.S. Nuclear Regulatory Commission, "Application for License Transfers and Conforming Administrative License Amendments," dated January 25, 2008 (ADAMS Accession No. ML080310521)

4. Letter from J. B. Hickman (Nuclear Regulatory Commission) to J. A. Christian (ZionSolutions, LLC), "Order Approving Transfer of Licenses and Conforming Amendments Relating to Zion Nuclear Power Station, Units 1 and 2 TAC Nos. J00341 and J00342)," dated May 4, 2009 (ADAMS Accession No. ML082840443)

5. NUREG-1757, "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness," U.S. NRC's Office of Nuclear Material Safety and Safeguards, Vol. 3, Rev 1, February 2012

6. Letter from Patrick R. Simpson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information Regarding Decommissioning Funding Plans for Independent Spent Fuel Storage Installations (ISFSIs)," dated May 2, 2018 (RS-18-061) (ADAMS Accession No. ML18122A098)

7. Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors," Office of Nuclear Regulatory Research, Revision 2, October 2011

ATTACHMENT 3
UPDATED ISFSI DECOMMISSIONING FUNDING PLAN FOR ZION NUCLEAR POWER STATION

TABLE 1
Zion Nuclear Power Station - ISFSI Only - Decommissioning Financial Assurance Summary

Total Trust Fund Assets as of December 31, 2018, *(2018 dollars)* *(Thousands $)*	Trust Fund Assets Allocated for ISFSI Decommissioning, *(2018 dollars)* *(Thousands $)*	Annual Contributions	Parent Company Guarantee	Part 72.30 Site Specific Decommissioning Cost, *(2018 dollars)* *(Thousands $)*	Method of Assurance
$60,551	$12,909	$0	$0	$17,030 [$65 (in 2032) + $16,965 (2033)]	10 CFR 72.30(e)(1)

ATTACHMENT 3
UPDATED ISFSI DECOMMISSIONING FUNDING PLAN FOR ZION NUCLEAR POWER STATION

TABLE 2
ISFSI Decommissioning Funding Estimate for Zion Nuclear Power Station
(December 31, 2018 Dollars)

Item	Activity	Labor Costs	Equipment & Materials Costs	Burial Costs	Other Costs	Total Costs*
	ISFSI Decommissioning					
1	Staffing	$1,080,845				$1,080,845
2	Characterize ISFSI	$2,475,093	$416,864		$291,158	$3,183,115
3	Security	$704,295				$704,295
4	Insurance				$964,799	$964,799
5	NRC Fees				$257,570	$257,570
6	Property Taxes				$1,163,970	$1,163,970
	Demolish ISFSI					
7	Mobilization	$87,296	$2,603		$1,987	$91,886
8	Transfer Cask	$3,130	$1,869			$4,999
9	Fuel Transfer Station	$5,955	$7,791			$13,746
10	Concrete Casks	$157,553	$231,855			$389,408
11	Fencing	$17,452	$9,403			$26,855
12	Monitoring Building	$34,944	$65,593			$100,537
13	ISFSI Pad & Foundations	$133,223	$250,073			$383,297
14	Warehouse	$61,152	$114,788			$175,939
15	Roadways & Drainage	$16,779	$8,345			$25,124
16	General Conditions	$170,030	$145,274			$315,304
17	Recycle Concrete	$322,832	$453,206		$977,841	$1,753,878
18	Dispose of Activated Concrete	$13,175	$149,604	$1,924,679	$866,908	$2,954,366
19	Dispose of Activated Steel	$15,304	$152,433	$1,983,002	$893,178	$3,043,917
	License Termination					
20	Final Status Survey	$262,206	$9,813		$47,033	$319,053
21	NRC Confirmation Survey	$67,418			$9,592	$77,010
					TOTAL:	**$17,029,914**

* Total costs may not add due to rounding