

Securitization and Its Potential Role in Financing V.C. Summer Nuclear Costs

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Introduction

We have been asked by the South Carolina Office of Regulatory Staff to explain securitization and how it compares to other proposed financing methods for the V.C. Summer nuclear costs. This report is our response. It is an introduction to securitization as it is used in the utility industry. All content and opinions are based on publicly available information. The report consists of the following four sections:

- Securitization Basics
- Credit Rating Agency Review
- Recent Example - Duke Energy Florida Nuclear Asset Securitization
- Securitization of the V.C. Summer Costs

Securitization Basics

What is securitization?

- Securitization is the process through which assets are packaged into securities and sold to investors. The cash flows generated by the assets are used to pay the principal and interest on the securities – thus the securities are often known as Asset-Backed Securities (ABS).¹
- A common example is a Mortgage-Backed Security (MBS). In this case, mortgages are bundled together into a mortgage pool. The payments from the mortgages (cash flow from financial asset) are used to pay the principal and interest on the MBS. By selling the MBS, the originating bank recovers the principal of the loans which allows it to generate more mortgages.
- The rating associated with the securities sold in the securitization process depends upon the risk of default on the cash payments flowing from the underlying assets.
- In the utility industry, the cash payments come from ratepayers. In a MBS, the cash payments are the mortgage payments backed the underlying home as the asset.

¹ “Demystifying Securitization for Unsecured Investors,” Special Comment, Moody’s Investors Service Global Credit Research, January 2003.

History of securitization in the utility industry

- Securitization was initially used in the electric industry as part of deregulation and restructuring, starting in the late 1990's, to recover the costs of generation assets rendered uneconomic or “stranded” by competition.²
- The first instance occurred in California in 1997. Under the restructuring, utilities were required to sell generating assets, many of which sold at less than book value. To secure the recovery of these and other restructuring costs, \$6 billion in cost recovery bonds were issued.
- The use of securitization, a.k.a. stranded cost bonds, spread to other states such as Michigan, Pennsylvania, Massachusetts, and Texas as deregulation and restructuring was pursued.
- Then, 10 years later, in 2007, new forms of utility cost recovery bonds emerged in the form of storm recovery and environmental control bonds to finance damage from hurricanes or other natural disasters and environmental clean-ups.

² “Beyond Stranded Cost Recovery: New Cost Recovery Bonds Represent Variations on Stranded Cost Bonds,” Special Report, Moody's Investors Service, Nov. 6, 2008.

Securitization in the utility industry

- In 2014, Entergy Louisiana used securitization to recover the costs of a terminated repowering project at its 538 MW Little Gypsy steam generating station.³ In 2016, securitization was used to recover the costs of the shuttered the Crystal River nuclear plant in Florida.⁴ And, just this year, Public Service of New Hampshire completed a securitization of \$636 million to recover costs of past investments in generation that are not expected to be recovered under market restructuring.⁵
- Currently, Colorado is considering legislation that would allow the retirement and securitization of older coal plants to comply with state and federal environmental rules.⁶
- Figure 1 shows total utility cost recovery bond issuance by year. All these bonds, except for Entergy New Orleans, have been rated triple-A by the major credit-rating agencies (Moody's gave an Aa1 rating to Entergy New Orleans securitization bonds).
- Figure 2 shows total utility cost recovery bond issuance by state. There are now 17 states that have used this type of utility financing.

³ <https://www.reuters.com/article/us-markets-assetbackeds/abs-utility-to-recoup-power-project-costs-via-securitization-idUSTRE75R7WH20110628>

⁴ <http://www.orlandosentinel.com/business/os-nsf-duke-energy-florida-nuclear-plant-20151117-story.html>

⁵ <https://electricityrates.com/psnh-issue-bonds-to-recover-past-investments/>

⁶ <https://www.abalert.com/search.pl?ARTICLE=171774>

Types of securitization in the utility industry

- **Stranded costs bonds** – as part of deregulation and restructuring, utilities were authorized to recover so-called stranded costs, which, very generally, were costs incurred in the regulated environment that were no longer be recoverable in a deregulated environment.
- **Storm recovery bonds** – these bonds are issued to help finance the recovery from storms, such as hurricane Rita and Katrina in Louisiana, or to prepare for such recovery.
- **Environmental bonds** – these bonds are often issued to finance environmental cleanup, but also to recover costs for the retirement of generation to comply with environment laws.
- **Nuclear plant retirement bonds** – this refers exclusively to the bonds that were issued in Florida to recover the costs for nuclear generation that was abandoned because it was too expensive to repair.

Figure 1 - Securitization in the utility industry over time

Utility bonds by issuance year and proceeds (in \$ millions)

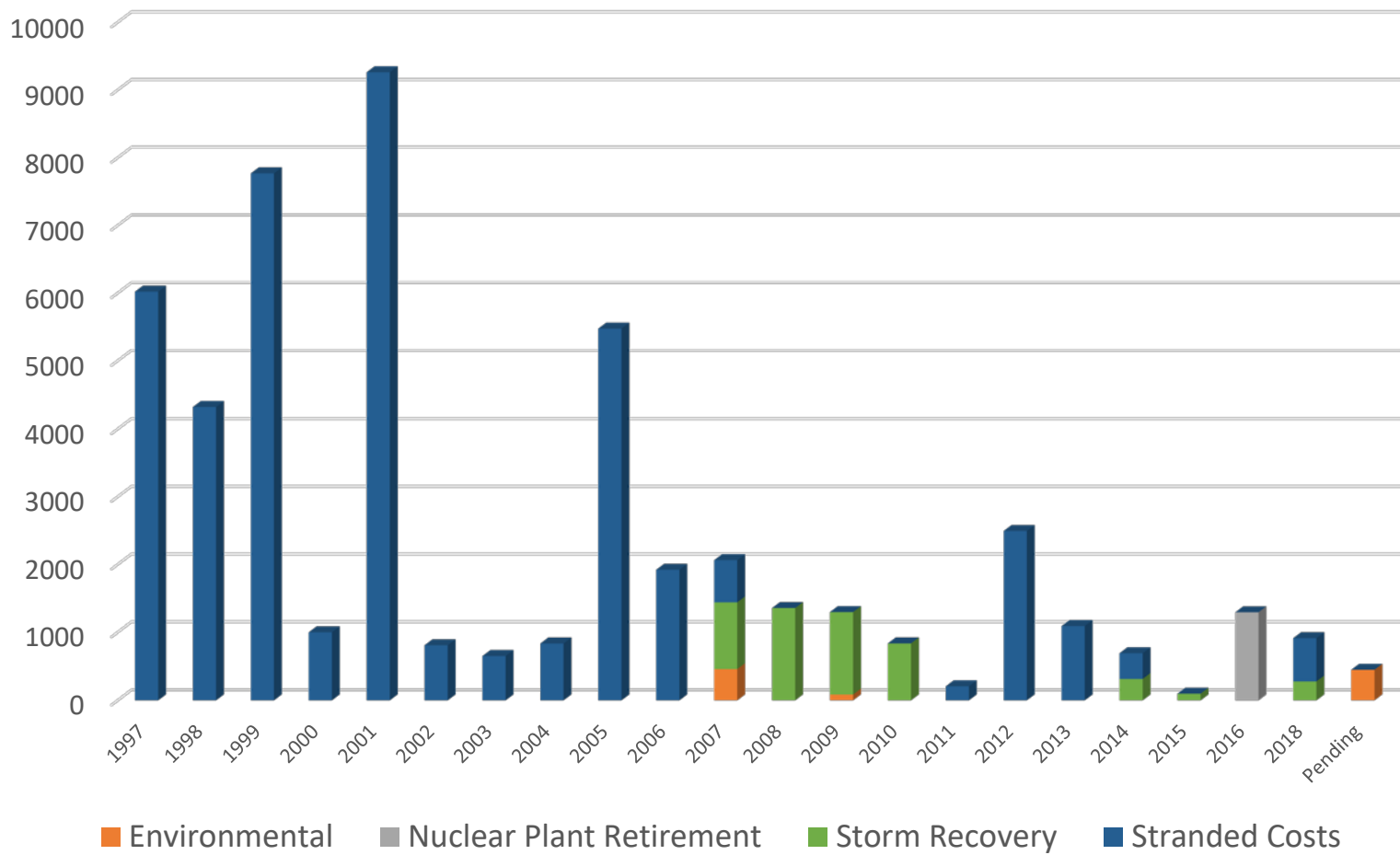
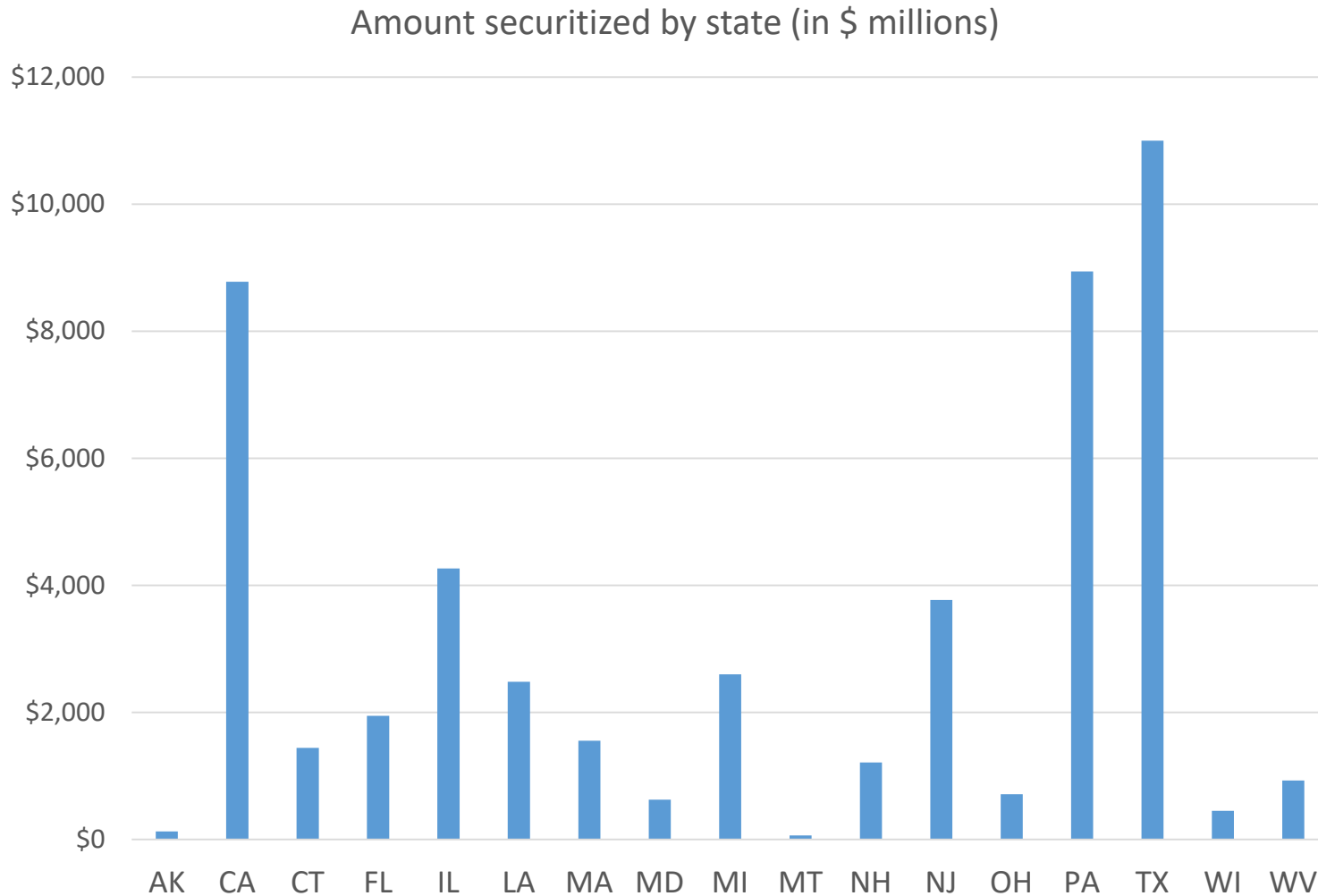


Figure 2 – Seventeen states have used securitization for utility financing⁷



⁷ Data for Figures 1 and 2 from Moody's Investors Service.

Securitization process in utility industry

- Utility securitization is enabled through state legislation. This legislation sets out the framework for the securitization, the conditions under which it applies, and the requirements that must be met. It creates an intangible property right to a portion of the utility's future revenue.
- The legislation requires the state PSC to issue a Financing Order stating that the revenue will be allowed in rates and dedicated to debt service.
- The bond issue and revenue collection is administered through a separate company, owned by the utility, to protect the revenues from claimants in bankruptcy.
- Once the bonds are issued, the utility collects the revenues in a separate charge on customer bills that goes directly to bond payments. The customer charge is trued-up, on an annual or semi-annual basis, to keep revenues collected in line with debt obligations.
- The proceeds generated from the bond issue are available to the utility for immediate use.

Steps in the securitization process in the utility industry

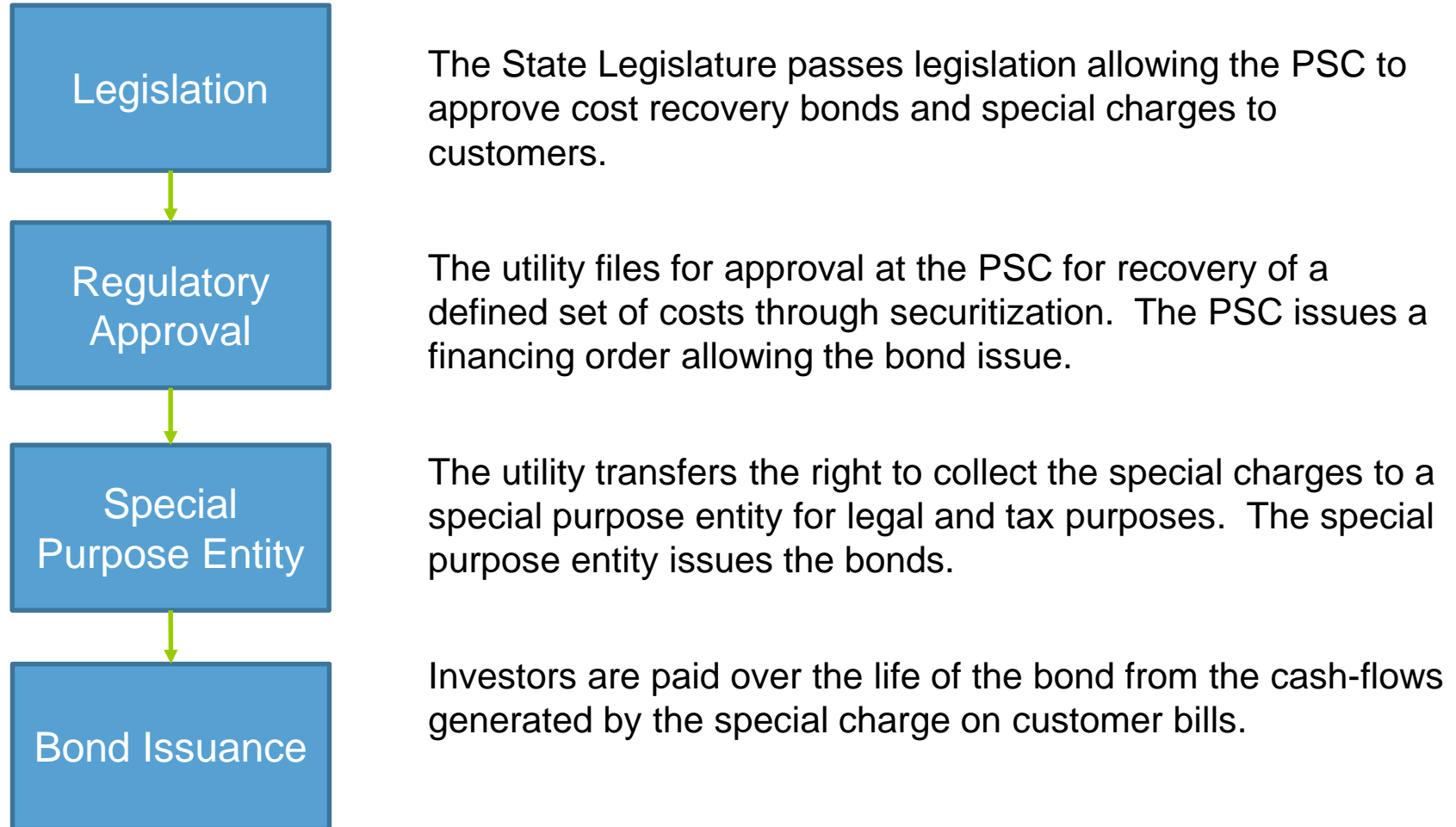
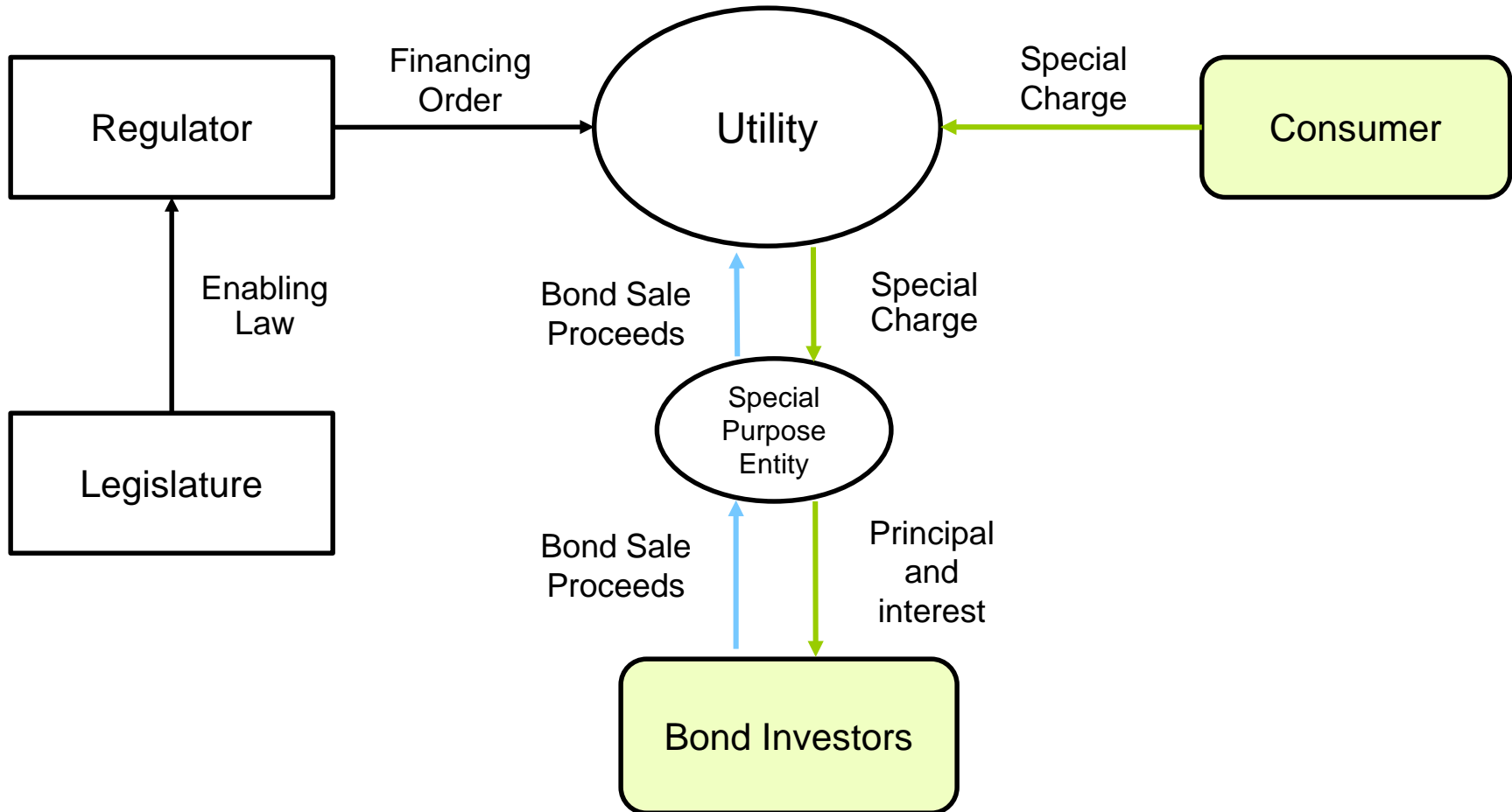


Illustration of the utility securitization process



Why choose securitization?

1. Lower cost to customer

- The guaranteed income through special customer charges can allow for financing at a lower rate.
- The rate on the securitized bond is generally lower than the utility's weighted average cost of capital (WACC). Consumers would pay the WACC if the costs were recovered through the rate base.
- Securitization can lower a utility's tax burden if the debt is removed from the balance sheet and not subject to income taxes.

2. Transparency – the cost is clearly indicated on customers' bills as a separate line item.

3. Regulatory Control – takes the management of this obligation out of the hands of the utility's management.

4. Cash Upfront – provides immediate cash to the utility which can be used by the utility to pay debt, purchase equity, or other purposes.

Drawbacks of securitization

- 1. Inflexible** – financial terms cannot be altered regardless of changes such as a deterioration of the financial health of the utility, a reduction in the number of customers or the quantity of energy consumed that would increase the per kWh charge.
- 2. Issuance costs** – the fees and cost associated with the securitization are generally higher than other financing options.
- 3. Time to enact** – legislation development timeline may not match the timetable for financing.

Credit Rating Agency Review

In the evaluation of utility cost recovery bonds, Moody's scrutinizes each step in the process, from the specifics of the state legislation to the strength and stability of the ratepayer.⁸

Legislation

- Utility cost recovery bonds are enabled through state legislation. Moody's analyses the extent to which this legislation could be weakened in the future. State pledges not to make any change to the bond recovery charges, and provisions that make any violation of the pledge a violation of the law would mitigate this risk.

Public Service Commission Financing Order

- Moody's analyses the order to ensure that it is irrevocable.

⁸ "Moody's Global Approach to Rating Securities Backed by Utility Cost Recovery Charges," Moody's Investor Service, June 22, 2015.

Customer Charges and the True-Up Mechanism

- An assessment is made of any caps on charges or time limits on collection that may result in insufficient recovery to pay off the bonds. The true-up mechanism is evaluated to make sure that cash flows keep pace with the debt obligations.

Non-Bypassibility

- An evaluation is done to ensure that customers cannot bypass the bond recovery charge. There must be assurance that current and future customers will continue to pay the charge. For example, charges assessed on transmission and distribution usage will stay intact even if a customer changes its electricity provider.

Bankruptcy of the Utility

- In the event of utility bankruptcy, there is risk that utility creditors may try to make a claim on the bond recovery charges. For this reason, the rights to the charges are transferred to a special financing entity. Moody's evaluates the legislation and financing orders to ensure that the rights are transferred as a "true sale" protecting them from utility creditors. Utility charges are also evaluated to ensure that bond recovery charge is not comingled with other utility charges.

Bankruptcy of the Special Purpose Entity

- The structure of the special purpose entity is evaluated for bankruptcy potential and the possible outcomes in bankruptcy to ensure that other creditors of the special purpose entity cannot make a claim on the bond recovery charges.

Economic Factors

- Even with the legal safety measures in place, adverse economic events may focus attention on the bond recovery charge and put it at risk. Therefore, an analysis is done of the absolute value of the charge and the charge as a percentage of the monthly residential bill. The charge is typically less than 10% of the bill.
- Next, a variety of stress tests are done to evaluate what would happen under various adverse scenarios such as:
 - A reduction in energy consumption, or
 - Disruptions or volatility in collections, or
 - A change in the mix of the customer base

Recent Example – Duke Energy Florida --- Nuclear Asset Securitization

Background

- The Crystal River nuclear plant, owned by Duke Energy Florida (DEF), was permanently shut down in 2013. In 2009, the plant sustained damage – a crack in the reactor’s 42-inch-thick concrete containment building – during an upgrade and maintenance project by the plant’s former owner Progress Energy. In 2011 additional cracks were found. DEF, which bought Progress in 2012, initially considered repairing the plant but determined that the cost would be prohibitive.⁹
- In 2015, the Florida State legislature approved statute 366.95, “Financing for certain nuclear generating asset retirement or abandonment costs.”¹⁰ That same year, DEF filed a petition at the Florida Public Service Commission seeking approval for the securitization of \$1.3 billion in Crystal River costs.¹¹

⁹<http://www.tampabay.com/news/business/energy/duke-energy-florida-customers-will-see-a-new-charge-on-their-bill-starting/2282006>

¹⁰http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0366/Sections/0366.95.html

¹¹<http://www.psc.state.fl.us/ClerkOffice/DocketFiling?docket=20150171>

Approval

- On November 19, 2015, the Florida PSC approved DEF's request.¹²
The order found that:
 - “the issuance of the nuclear asset-recovery bonds and the imposition of the nuclear asset-recovery charges...have a significant likelihood of resulting in lower overall costs or would significantly mitigate the rate impacts to customers as compared with the traditional method of financing and recovering nuclear asset-recovery costs,”¹³ and that,
 - “the broad based nature of the State pledge...and the irrevocable character of this Financing Order, in conjunction with the true-up adjustment provisions...constitutes a guarantee of regulatory action for the benefit of investors in nuclear asset-recovery bonds.”¹⁴

¹² <http://www.psc.state.fl.us/library/filings/2015/07364-2015/07364-2015.pdf>

¹³ *Ibid.*, p.26, P.39.

¹⁴ *Ibid.*, p.26, P.40.

Results

- The Florida PSC approved the recovery of \$1.3 billion for a period of up to 23 years and authorized collection of recovery charges on all DEF transmission and distribution customers.
- The bonds were ultimately issued in five tranches of varying lengths with interest rates between 1.196% and 3.112%.
- The primary use by DEF of the proceeds from the bond issuance was to pay down outstanding short-term debt, and/or to make an equity distribution to DEF's parent, Duke Energy Corp., and pay the upfront bond issuance costs.¹⁵

It was estimated that under the traditional rate base method of finance the increase in charges on the residential bill would be \$4.96 per 1,000 kWh, whereas under securitization the increase would be \$2.93.

Securitization was estimated to reduce the total estimated cumulative revenue requirement by \$708 million over 20 years.

¹⁵Presale: Duke Energy Florida Project Finance LLC, S&P Global Ratings, June 8, 2016, p.3.

Standard & Poor's Rating

The bonds financed through securitization ultimately received an Aaa rating. S&P's analysis just prior to the issuance detailed the strengths and weakness of the deal.¹⁶

- Strengths

- A well designed true-up mechanism and irrevocable financing order
- An assessment that nuclear asset-recovery charges will continue to be imposed on customers by any successor to DEF
- The assurance that the State of Florida will not take or permit any action to reduce, alter, or impair the nuclear asset recovery charges

- Weaknesses

- Potentially significant forecasting variance of the deal due to uncertainty and errors in assumptions
- Potentially volatile electricity consumption
- Interest payments in early years that represent a larger share of collection were assessed as having a higher level of liquidity risk – these payments cannot be missed

¹⁶ *Ibid.*

Standard & Poor's Rating

- Factors that Mitigate the Weaknesses
 - Deal passed stress tests that included large decreases in electricity consumption that still allowed full payment of the bonds
 - A capital reserve was set up as a source of liquidity to make bond payments in the event of a temporary reduction in amounts collected in the cost recovery charges
 - The charges on a typical retail customer's bill were found to be small enough not to cause customers to refuse to pay, even under stress tests
 - An analysis under a hypothetical bankruptcy of the sellers led to conclusion that payments would still be made
 - The deal passed a stress test of the liquidity risk in early years

Prospectus

\$1,294,290,000 SERIES A SENIOR SECURED BONDS, DUKE ENERGY FLORIDA, LLC

Sponsor, Depositor and Initial Servicer
Central Index Key Number: 0000037637

DUKE ENERGY FLORIDA PROJECT FINANCE, LLC

Issuing Entity
Central Index Key Number: 0001669374

<u>Series A Bonds</u>	<u>Expected Weighted Average Life (Years)</u>	<u>Principal Amount Offered</u>	<u>Scheduled Final Payment Date</u>	<u>Final Maturity Date</u>	<u>Interest Rate</u>	<u>Initial Price to Public</u>	<u>Underwriting Discounts and Commissions</u>	<u>Proceeds to Issuer (Before Expenses)</u>
Series A 2018	2.0	\$183,000,000	03/01/2020	03/01/2022	1.196%	99.999%	0.25%	\$182,540,670
Series A 2021	5.0	\$150,000,000	09/01/2022	09/01/2024	1.731%	99.998%	0.40%	\$149,397,000
Series A 2026	10.0	\$436,000,000	09/01/2029	09/01/2031	2.538%	99.996%	0.50%	\$433,802,560
Series A 2032	15.2	\$250,000,000	03/01/2033	03/01/2035	2.858%	99.995%	0.65%	\$248,362,500
Series A 2035	18.7	\$275,290,000	09/01/2036	09/01/2038	3.112%	99.994%	0.70%	\$273,346,453

Securitization of the V.C. Summer Nuclear Costs

Should South Carolina consider securitization?

- Securitization could potentially lower the overall costs and mitigate the rate impact to customers relative to financing the V.C. Summer nuclear costs through the traditional rate base method.
- Securitization expands the options available to regulators and the utility to resolve the V.C. Summer litigation.
- Securitization provides transparency and regulatory control.
- Securitization would provide immediate funds to SCE&G that could be used to:
 - Pay off short-term or longer term debt
 - Manage its equity position
 - Fund a rate reduction to customers
 - Pay for other utility needs

Current state of play in South Carolina

Securitization of V.C. Summer nuclear costs has not been proposed by SCE&G as part of the Dominion/SCANA merger or as a financing solution absent the merger.

However,

- The consideration and use of securitization as a tool to lower costs to consumers could arise in merger negotiations or in negotiations with SCE&G were the merger to fall through.
- Securitization could be part of a post-bankruptcy solution, if SCE&G were to declare bankruptcy.
- Or, like Duke Energy Florida, securitization could be part of a financing solution adopted by new owners of the utility.

What can be learned from prior utility securitizations?

- They have reduced costs to consumers.
- They have been implemented successfully.
- They continue to be used in the utility industry.

Hurdles to securitization in South Carolina

We see two primary hurdles to using securitization to finance V.C. Summer nuclear costs.

- SC does not have enabling legislation, and given the controversy over the Base Load Review Act, it may be difficult to get legislation passed.
- The amount of the securitization would be limited to keep the impact on the retail customers' bill to 10%¹⁶, but more likely closer to 5%, in order to achieve the lowest financing costs possible.

¹⁶ "Typically the percentage of a residential customer's monthly bill devoted to the cost recovery charge is less than 10%," Moody's Global Approach to Rating Securities Back by Utility Cost Recovery Charges, Moody's Investors Service, p. 5.

Comparison of traditional rate base method vs. securitization

The Dominion/SCANA merger filing proposes to finance \$3.3 billion in V.C. Summer nuclear costs using the traditional rate base method over 20 years.¹⁷ Securitization could be used to finance this amount, or a portion of this amount, over the same 20 years.

Merger Proposal

Allowed Return on Equity: 10.25% (52.81%)

Cost of Debt: 5.85% (47.19%)

Weighted Average Cost of Capital: 8.17%

8.17%

Securitization

Anticipated to require multiple tranches with rates likely less than 4% (based on DEF)*

< 4%

Securitization of \$3.3 billion could reduce the total estimated cumulative revenue requirement by as much as \$1.5 billion over 20 years based on certain simplifying assumptions.*

¹⁷ Joint Application and Petition of South Carolina Electric & Gas Company and Dominion Energy, Inc. before The Public Service Commission of South Carolina, Docket No. 2017-370-E, Jan. 12, 2018, p.29.

*Actual savings would depend on strength of the legislation making securitization possible, the strength of the financing order, market conditions at the time of the bond issue, the structure of the bond issue, tax treatment, regulatory treatment of amounts in rate base, and other factors.

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