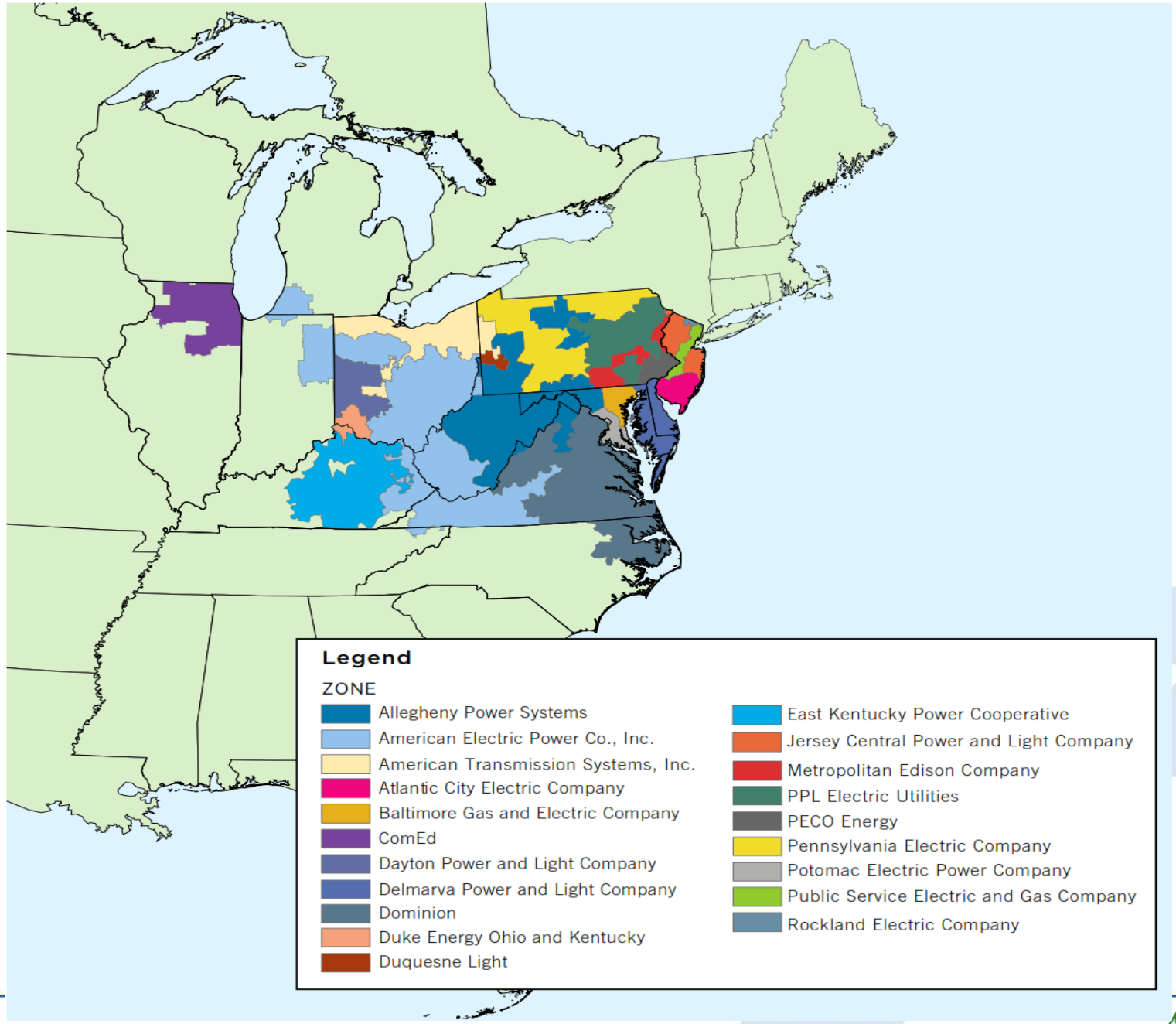
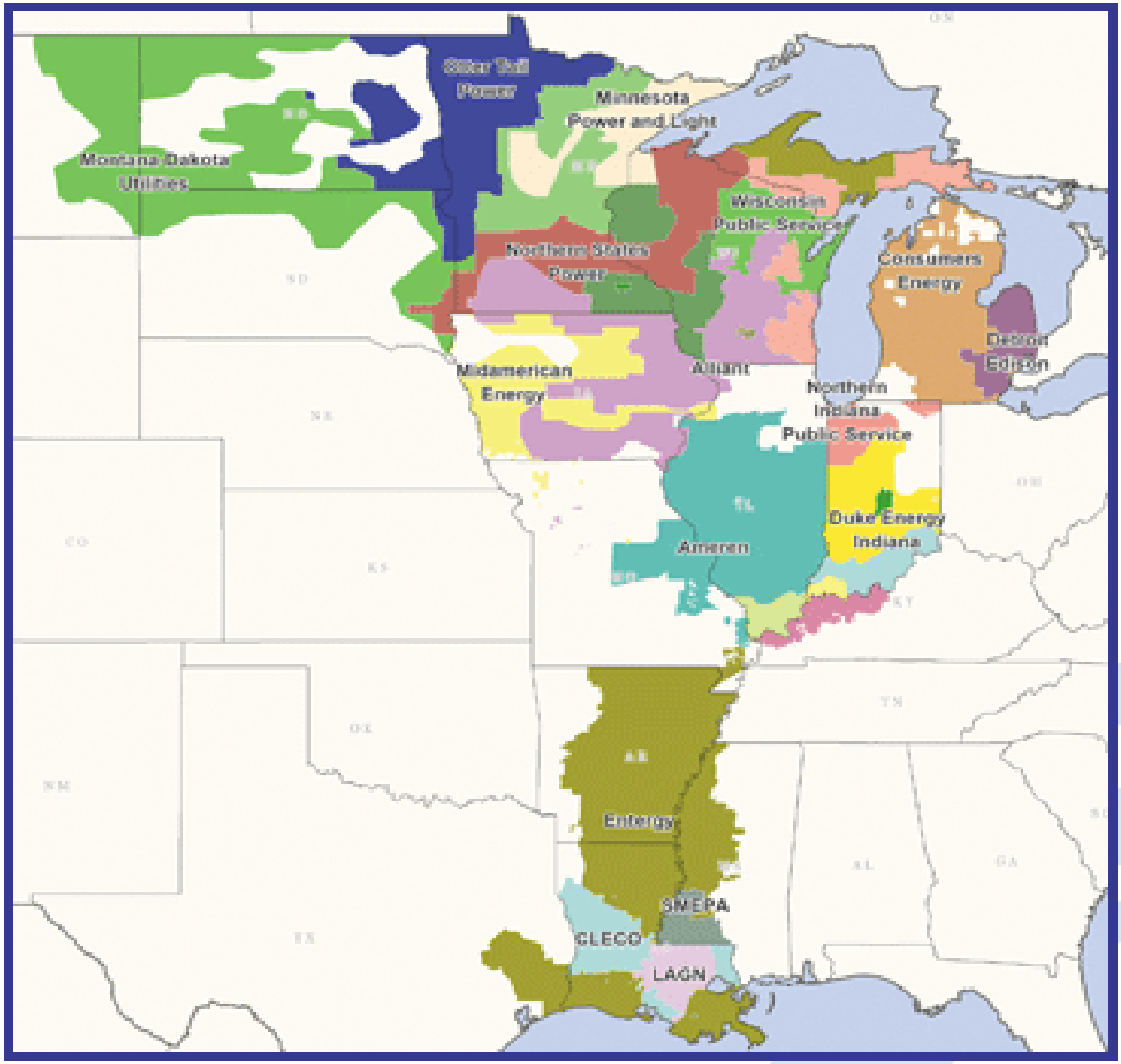
AMP PJM Meeting

American Municipal Power ***June 3, 2016***

Agenda

- Basis for Transmission Dependent Utility ("TDU") and Customer Concerns
- Highlight Customer-Focused Provisions and FERC Guidance


Legend
ZONE
Allegheny Power Systems
American Electric Power Co., Inc.
American Transmission Systems, Inc.
Atlantic City Electric Company
Baltimore Gas and Electric Company
ComEd
Dayton Power and Light Company
Delmarva Power and Light Company
Dominion
Duke Energy Ohio and Kentucky
Duquesne Light
East Kentucky Power Cooperative
Jersey Central Power and Light Company
Metropolitan Edison Company
PPL Electric Utilities
PECO Energy
Pennsylvania Electric Company
Potomac Electric Power Company
Public Service Electric and Gas Company
Rockland Electric Company

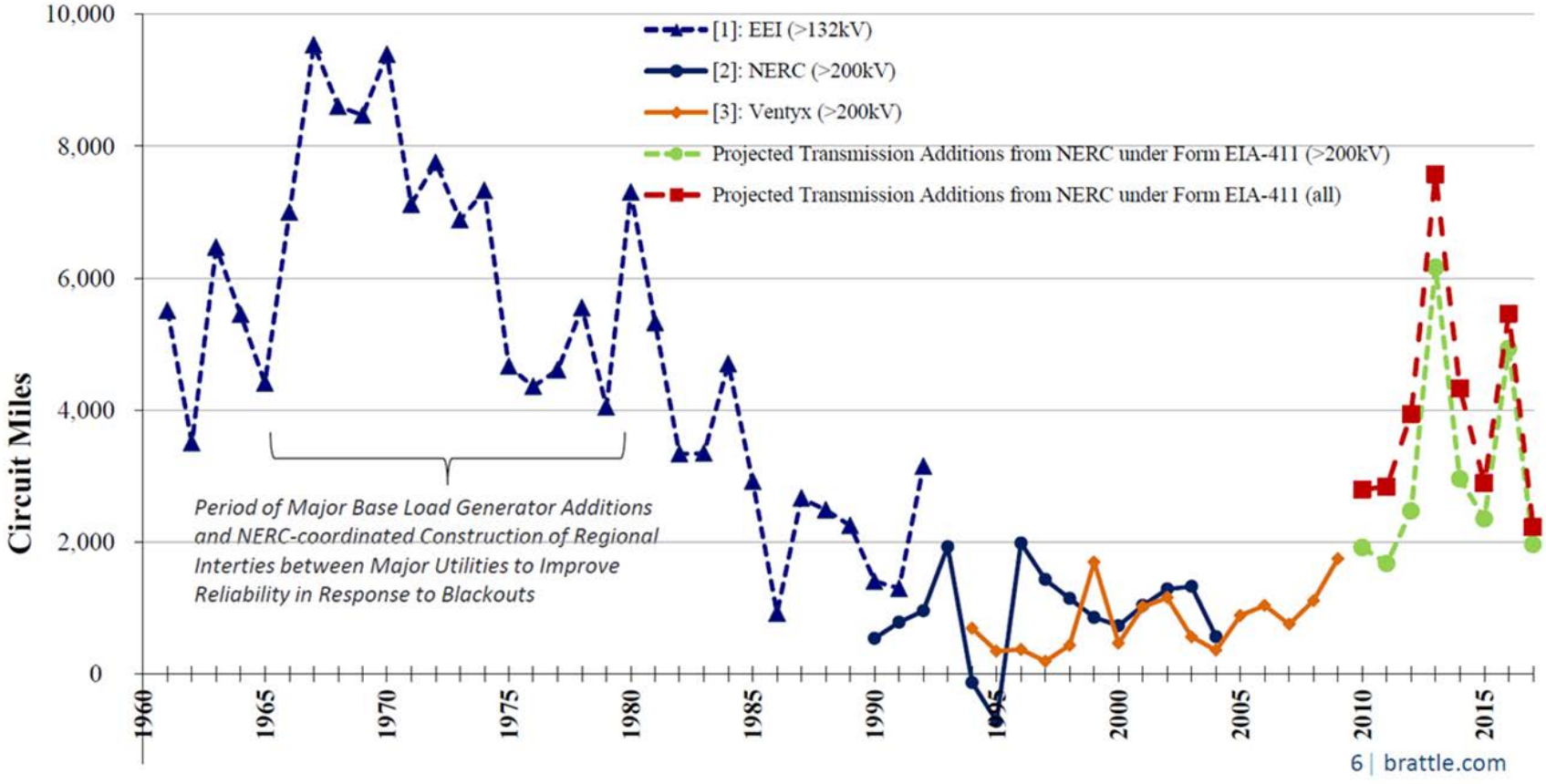

Otter Tail Power
Minnesota Power and Light
Montana-Dakota Utilities
Wisconsin Public Service
Northern States Power
Consumers Energy
Detroit Edison
Midamerican Energy
Alliant
Northern Indiana Public Service
Duke Energy Indiana
Ameren
Entergy
SMEPA
CLECO
LAGN

Background

- Rising Transmission Costs
- $12 Billion in Supplemental Projects
- $5.5 Billion of those are Aging Infrastructure

Historical Circuit-Mile Additions Document Aging Grid

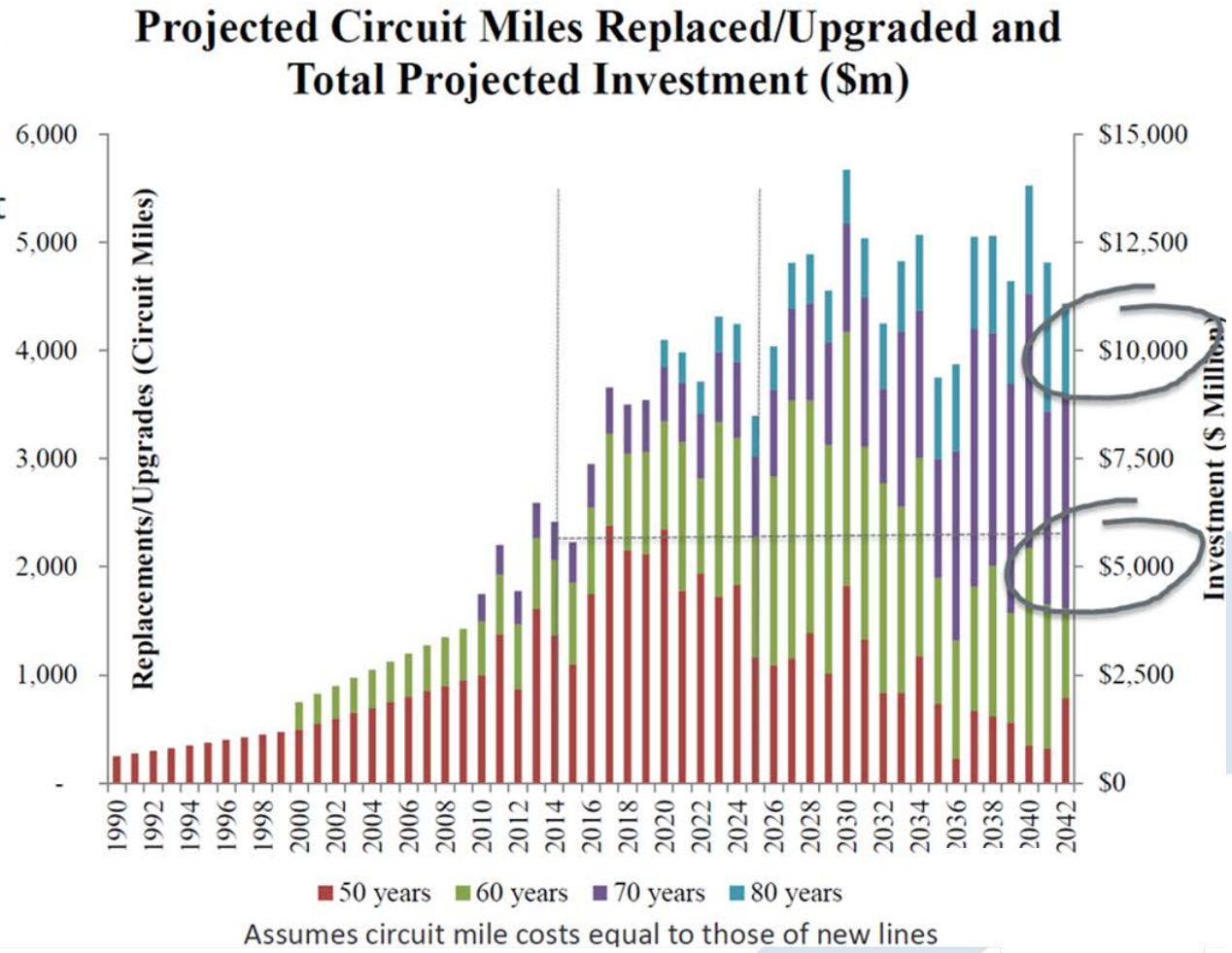
- Most of the existing grid was built 30-50+ years ago
- Even relatively high recent and projected circuit miles additions are below levels of additions in 1960s and 1970s



*Investment Trends and Fundamentals in US Transmission and Electricity Infrastructure; July 17, 2015 Brattle Presentation to JP Morgan Investor Conference

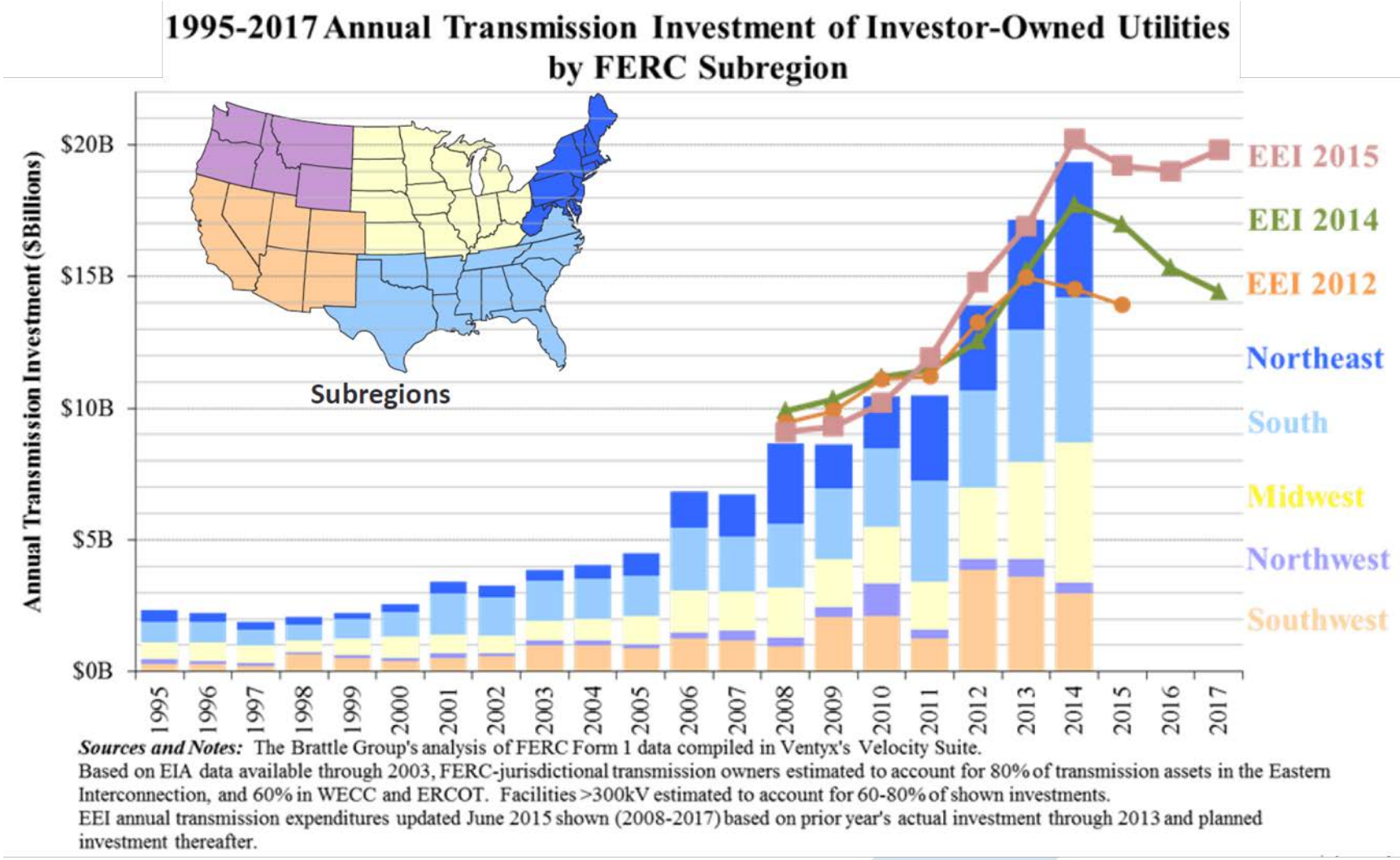
Replacing and Upgrading Aging Transmission Will Require Significant Investments

- If all facilities had to be replaced after 50 to 80 years, investment need could increase by $5 billion/yr over next decade
- Some of these replacements may become large upgrades open to non-incumbents



*Investment Trends and Fundamentals in US Transmission and Electricity Infrastructure; July 17, 2015 Brattle Presentation to JP Morgan Investor Conference

Historical and Projected Transmission Investments



Sources and Notes: The Brattle Group's analysis of FERC Form 1 data compiled in Ventyx's Velocity Suite.
Based on EIA data available through 2003, FERC-jurisdictional transmission owners estimated to account for 80% of transmission assets in the Eastern Interconnection, and 60% in WECC and ERCOT. Facilities >300kV estimated to account for 60-80% of shown investments.
EEI annual transmission expenditures updated June 2015 shown (2008-2017) based on prior year's actual investment through 2013 and planned investment thereafter.

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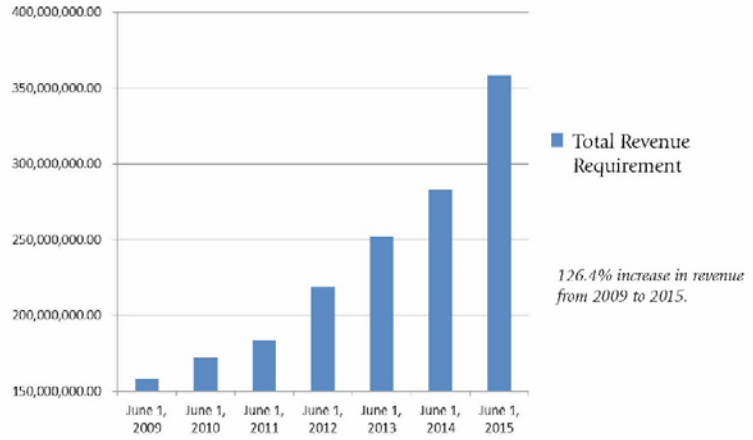
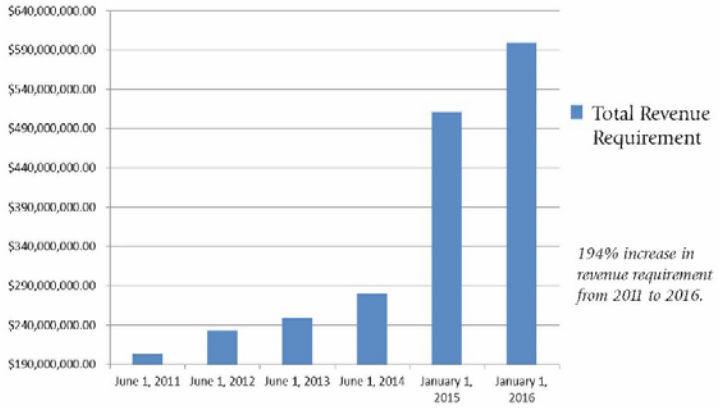
PPL Transmission Revenue Requirement



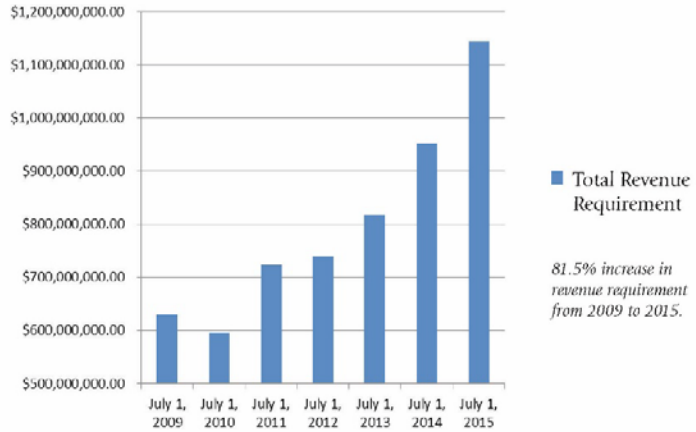
126.4% increase in revenue from 2009 to 2015.

ATSI Transmission Revenue Requirement



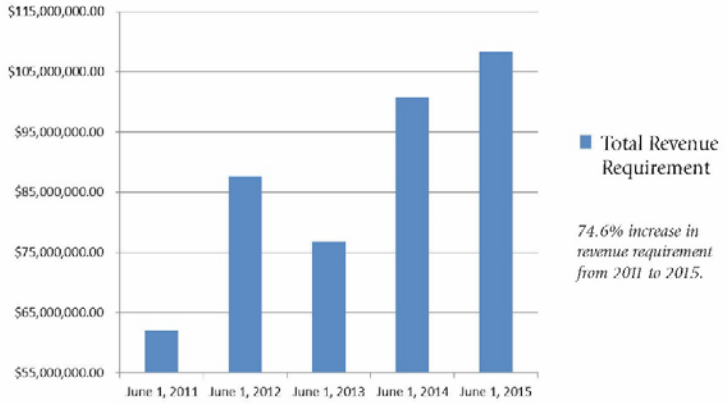
194% increase in revenue requirement from 2011 to 2016.

AEP Transmission Revenue Requirement



81.5% increase in revenue requirement from 2009 to 2015.

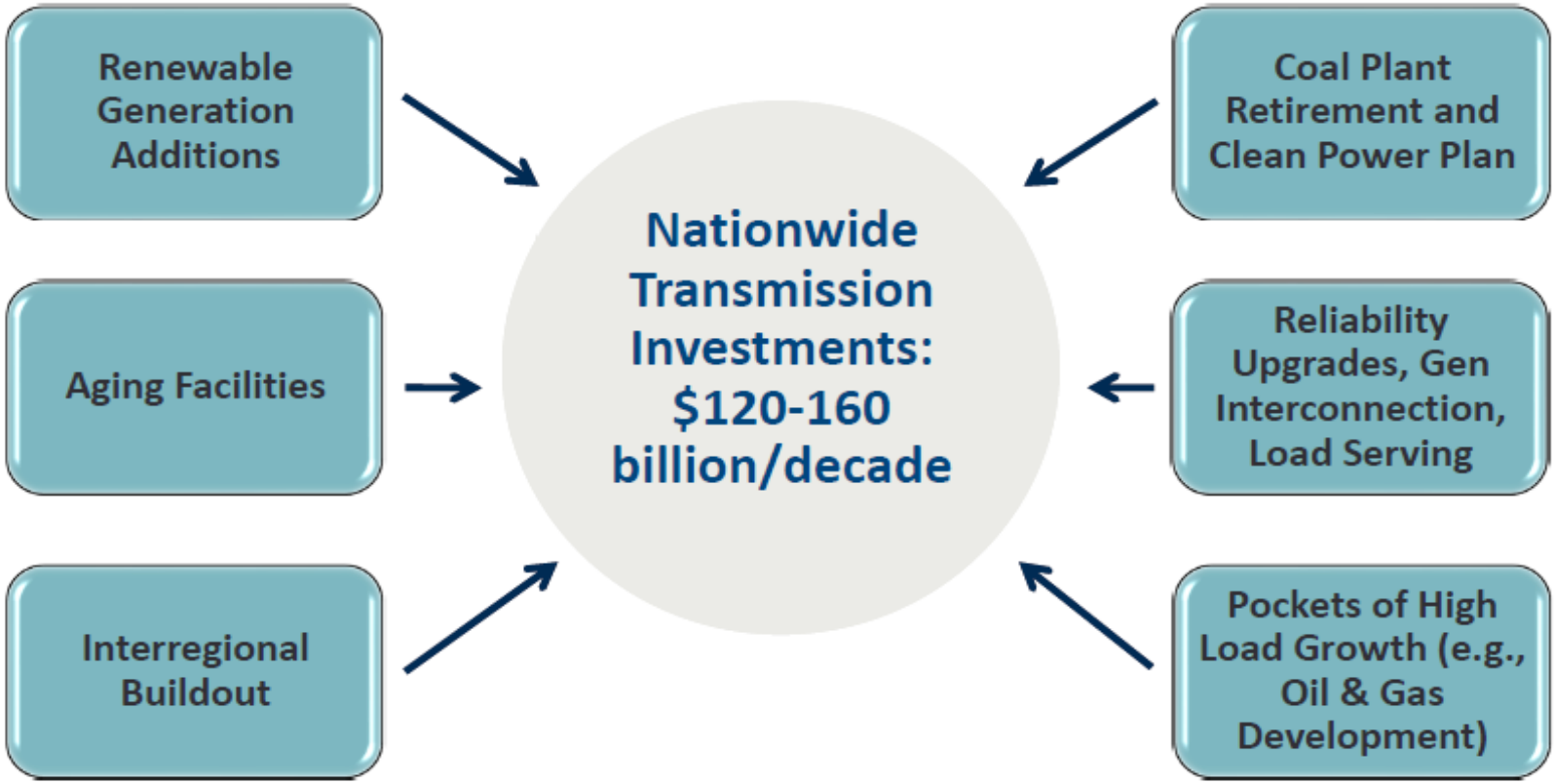
Duke Transmission Revenue Requirement



74.6% increase in revenue requirement from 2011 to 2015.

Drivers:

Summary of Projected Transmission Investment Opportunities Nation-Wide



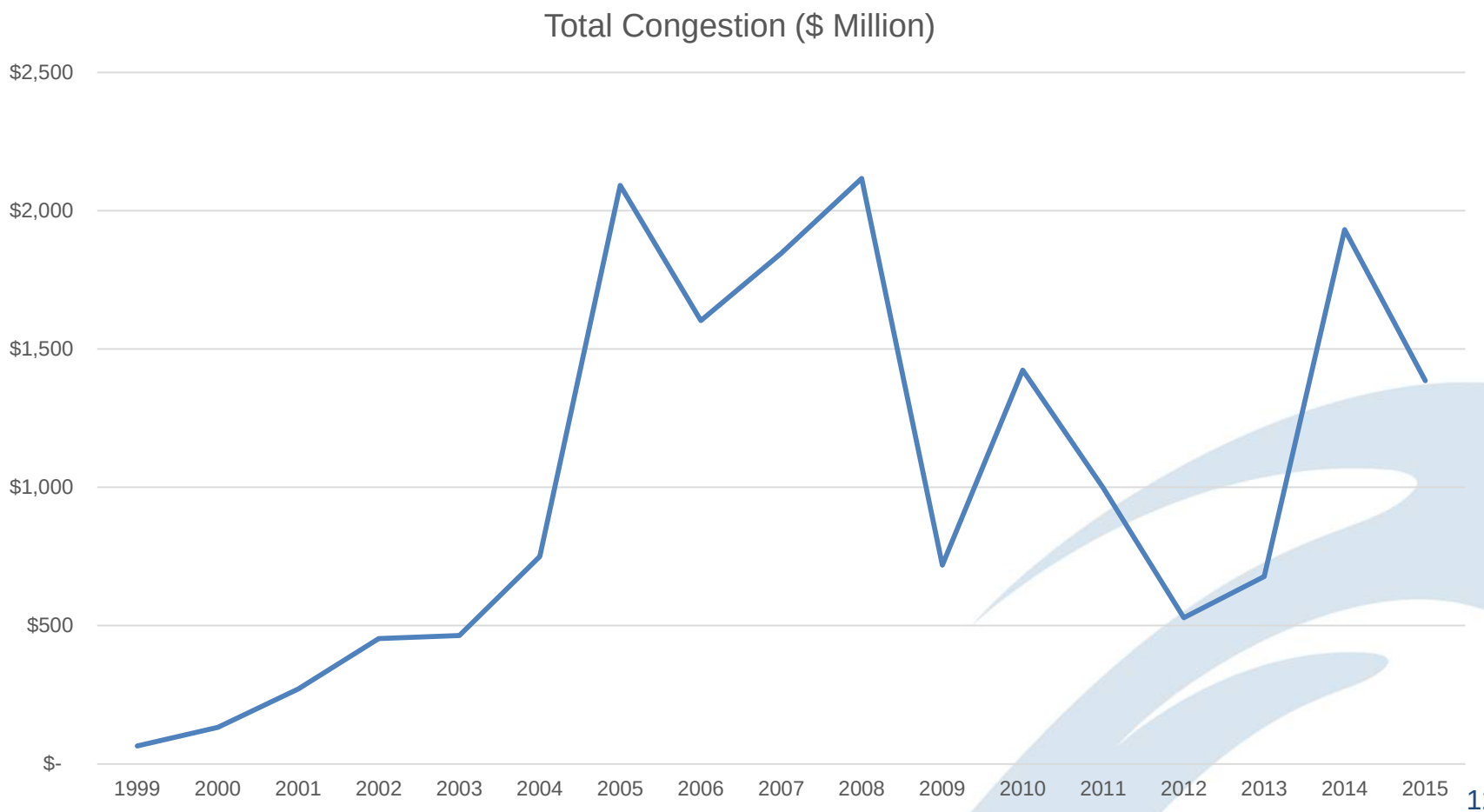
Sources and Notes:
The $120-160 billion projection per decade was originally developed in conjunction with WIRES for "Employment and Economic Benefits of Transmission Investment in the US and Canada," May 2011. This projection has since been refined and regionalized in several client-confidential analyses.

Benefits?

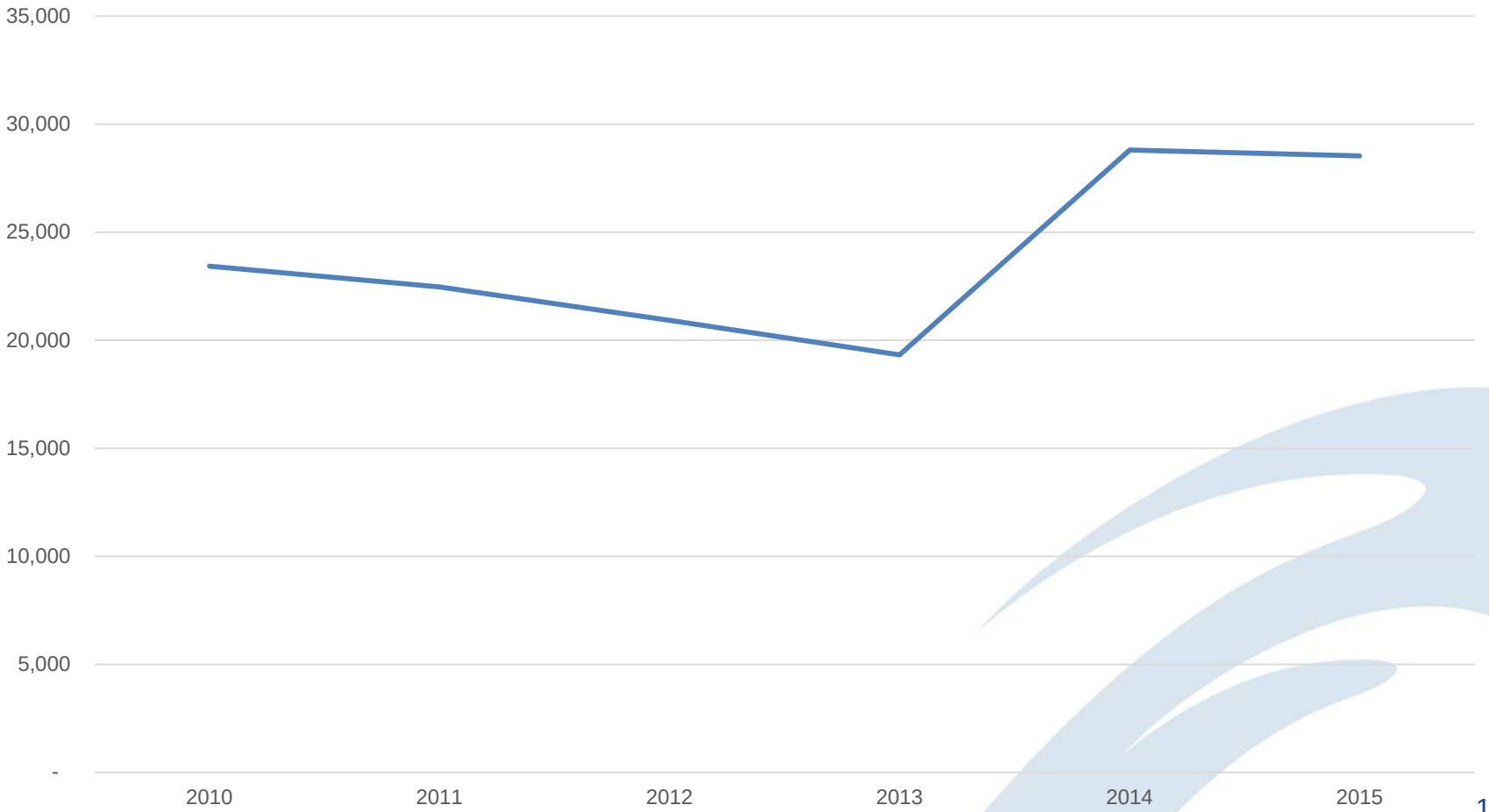
- Reduced Congestion?
- Additional Operational Flexibility to Increase System Capacity?

Inconclusive…

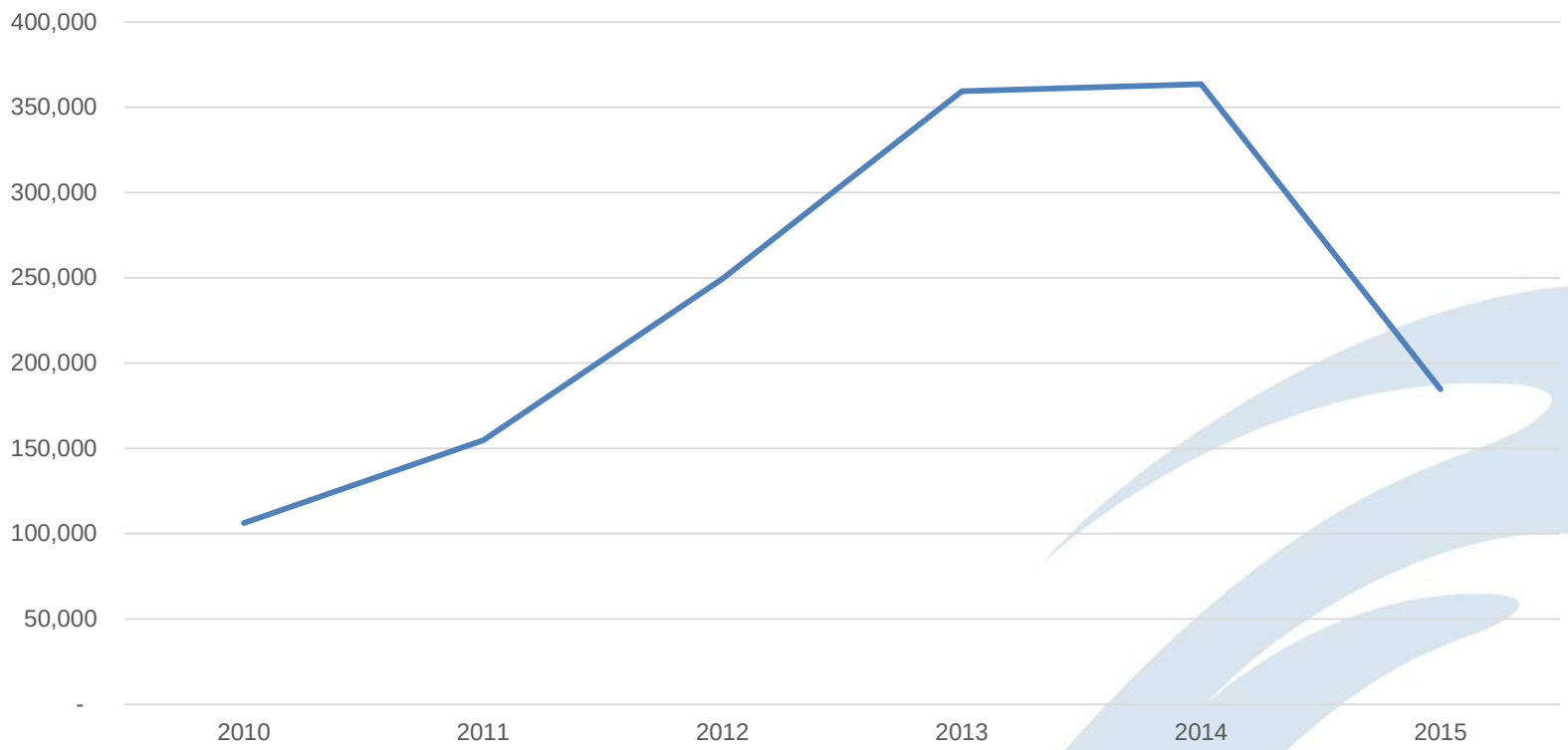
Total Congestion Dollars



Congestion Hours: Real-Time



Congestion Hours: Day-Ahead



Other risks…

- Over-investment: “Averch-Johnson effect” – the expectation that, whenever a regulated utility’s after-tax return on rate base exceeds its net cost of borrowing, the utility will tend to put more dollars into rate base (“over-invest”) than is economically optimal
- Loss of “regulatory lag” as a brake on over-investment as TOs shift to forward-looking formula rates

Take-aways from last session…

- The TOs consider transmission facility replacement to be an asset management decision made by utility executives based on the corporate risk and prioritization models, maintenance programs, reliability impacts and customer concerns.
- Asset management replacement decisions are driven by geography, maintenance, design, manufacturer, age, parts, condition, environment, safety and other factors. Not necessarily known well in advance.
- Subjective and objective elements in the decision-making process.

FERC Direction…

Order 890:

- Required all public utility transmission providers to have coordinated, open, and transparent local transmission planning processes. [Order No. 890, FERC Stats. & Regs. ¶ 31,241 at P 435]

FERC Direction…

Order 890 – on Coordination	FERC Staff Whitepaper
[T]he ultimate responsibility for planning remains with transmission providers. With this said, we fully intend that the planning process adopted herein provide for the timely and meaningful input and participation of customers into the development of transmission plans. This means that customers must be included at the early stages of the development of the transmission plan and not merely given an opportunity to comment on transmission plans that were developed in the first instance without their input.	The coordination principle requires transmission providers to meet with all of their transmission customers and interconnected neighbors to develop local and/or regional transmission plans on a nondiscriminatory basis. The purpose of the coordination requirement, as stated in Order No. 890, is to eliminate the potential for undue discrimination in planning by opening appropriate lines of communication between transmission providers, their transmission-providing neighbors, affected state authorities, customers, and other stakeholders. Staff also encourages transmission providers to have a mechanism in place to notify affected parties of the development of a potential project, or other significant events, and invite them to participate in related planning meetings.

FERC Direction…

Order 890 – on Openness	FERC Staff Whitepaper
The Commission adopts the NOPR's proposal and will require that transmission planning meetings be open to all affected parties including, but not limited to, all transmission and interconnection customers, state commissions and other stakeholders. We recognize that it may be appropriate in certain circumstances, such as a particular meeting of a subregional group, to limit participation to a relevant subset of these entities. We emphasize, however, that the overall development of the transmission plan and the planning process must remain open.	The openness principle requires that transmission planning meetings be open to all affected parties, including but not limited to all transmission and interconnection customers, state authorities, and other stakeholders. Although the Commission recognized in Order No. 890 that it may be appropriate in certain circumstances to limit participation in a meeting to a subset of parties, such as a particular meeting of a subregional group, the Commission emphasized that the overall development of the transmission plan and the planning process must remain open.

FERC Direction…

Order 890 – on Transparency	FERC Staff Whitepaper
The Commission adopts the NOPR's proposal and will require transmission providers to disclose to all customers and other stakeholders the basic criteria, assumptions, and data that underlie their transmission system plans. In addition, transmission providers will be required to reduce to writing and make available the basic methodology, criteria, and processes they use to develop their transmission plans, including how they treat retail native loads, in order to ensure that standards are consistently applied. This information should enable customers, other stakeholders, or an independent third party to replicate the results of planning studies and thereby reduce the incidence of after-the-fact disputes regarding whether planning has been conducted in an unduly discriminatory fashion….We believe that the same safeguards developed as discussed above regarding the openness principle, such as confidentiality agreements and password protected access to information, will adequately protect against inappropriate disclosure of confidential information or CEII.	The transparency principle requires transmission providers to reduce to writing and make available the basic methodology, criteria, and processes used to develop transmission plans, including how they treat retail native loads, in order to ensure that standards are consistently applied. To that end, each transmission provider must describe in Attachment K the method(s) it will use to disclose the criteria, assumptions and data that underlie its transmission system plans. The Commission specifically found that simple reliance on Form Nos. 714 and 715 failed to provide sufficient information to provide transparency in planning because those forms were designed for different purposes. Transmission providers were also directed to provide information regarding the status of upgrades identified in the transmission plan. The Commission explained that sufficient information should be made available to enable customers, other stakeholders, and independent third parties to replicate the results of planning studies and thereby reduce the incidence of after-the-fact disputes regarding whether planning has been conducted in an unduly discriminatory fashion.

FERC Direction…

Order 890 – on Information Exchange	FERC Staff Whitepaper
In order for the Final Rule's planning process to be as open and transparent as possible, the information collected by transmission providers to provide transmission service to their native load customers must be transparent and, to that end, equivalent information must be provided by transmission customers to ensure effective planning and comparability. Lastly, in response to the concerns of some commenters, we emphasize that the transmission planning required by this Final Rule is not intended, as discussed earlier, to be limited to the mere exchange of information and then review of transmission provider plans after the fact. The transmission planning required by this Final Rule is intended to provide transmission customers and other stakeholders a meaningful opportunity to engage in planning along with their transmission providers.	The information exchange principle requires network customers to submit information on their projected loads and resources on a comparable basis (*e.g., planning* horizon and format) as used by transmission providers in planning for their native load…. The Commission emphasized that transmission planning is not intended to be limited to the mere exchange of information and after the fact review of transmission provider plans. The planning process is instead intended to provide a meaningful opportunity for customers and stakeholders to engage in planning along with their transmission providers. To that end, the Commission clarified that information exchange relates to planning, not other studies performed in response to interconnection or transmission service requests.

FERC Direction…

Order 890 – on Comparability	FERC Staff Whitepaper
The transmission system plan must (1) meet the specific service requests of its transmission customers and (2) otherwise treat similarly-situated customers (e.g., network and retail native load) comparably in transmission system planning… We are specifically requiring a comparability principle to address concerns, such as those raised by commenters, that transmission providers continue to plan their transmission systems such that their own interests are addressed without regard to, or ahead of, the interests of their customers. Comparability requires that the interests of transmission providers and their similarly-situated customers be treated on a comparable basis. In response to the concerns expressed by several commenters, we emphasize that similarly-situated customers must be treated on a comparable basis, not that each and every transmission customer should be treated the same.	The comparability principle requires transmission providers, after considering the data and comments supplied by customers and other stakeholders, to develop a transmission system plan that meets the specific service requests of their transmission customers and otherwise treats similarly-situated customers (*e.g., network and retail* native load) comparably in transmission system planning. In Order No. 890, the Commission expressed concern that transmission providers historically have planned their transmission systems to address their own interests without regard to, or ahead of, the interests of their customers. Through the comparability principle, the Commission required that the interests of transmission providers and their similarly-situated customers be treated on a comparable basis during the planning process.

FERC Direction…

Order 1000:

- Amended Order 890 to ensure that FERC-jurisdictional services are provided at just and reasonable rates and on a basis that is just, reasonable and not unduly discriminatory.
- Acknowledged that each transmission planning region has unique characteristics and accorded significant flexibility to tailor regional planning to accommodate regional differences – did not prescribe exact manner transmission providers must fulfill regional planning requirements.
- But - FERC stated that it identified a minimum set of requirements to ensure that all transmission planning processes result in services being provided at rates, terms, and conditions that are just and reasonable and not unduly discriminatory or preferential [Order No. 1000, FERC Stats. & Regs. ¶ 31,323 at P 13.]

FERC Direction…

Order 1000

- Requires transmission providers to consult with stakeholders to develop the regional transmission plan. [Order No. 1000, FERC Stats. & Regs. ¶ 31,323 at P 6.]
- To address Order 890 deficiencies, requires transmission providers "to evaluate, in consultation with stakeholders, alternative transmission solutions that might meet the needs of the transmission planning region more efficiently or cost-effectively than solutions identified by individual public utility transmission providers in their local transmission planning process."
- If the public utility transmission providers in the transmission planning region, in consultation with stakeholders, determine that an alternative transmission solution is more efficient or cost-effective than transmission facilities in one or more local transmission plans, then the transmission facilities associated with that more efficient or cost-effective transmission solution can be selected in the regional transmission plan for purposes of cost allocation. [Order No. 1000, FERC Stats. & Regs. ¶ 31,323 at P 148.]

FERC Direction...

Order 1000

- The process used to produce the regional transmission plan must satisfy the following Order No. 890 transmission planning principles: (1) coordination; (2) openness; (3) transparency; (4) information exchange; (5) comparability; (6) dispute resolution; and (7) economic planning.

- Application of these transmission planning principles will ensure that stakeholders have an opportunity to participate in the regional transmission planning process in a timely and meaningful manner.

- Stakeholders must have an opportunity to express their needs, have access to information, and an opportunity to provide information, and thus have an opportunity to participate in the identification and evaluation of regional transmission solutions.

FERC Direction…

FERC Staff's Whitepaper on Guidance Principles for Clean Power Plan Modeling (in Docket AD16-14)

"A transparent process that allows stakeholder input on important aspects of the planning process provides the most practical way to assure that reasonable assumptions and inputs into the study processes are considered. In addition, the modeling entity should provide sufficient access to information so that stakeholders can replicate the results of studies. Using a transparent process that engages stakeholders to review and identify study inputs, modeling techniques, base case content, and study results can help promote the use of accurate assumptions, the employment of rigorous study methods, and the reasonable interpretation of results."

OA, Schedule 6, Section 1.3(d)	FERC Interpretation
The Subregional RTEP Committees shall be responsible for the timely review of the criteria, assumptions and models used to identify reliability criteria violations, economic constraints, or to consider Public Policy Requirements, proposed solutions prior to finalizing the Local Plan, the coordination and integration of the Local Plans into the RTEP, and addressing any stakeholder issues unresolved in the Local Plan process. The Subregional RTEP Committees will be provided sufficient opportunity to review and provide written comments on the criteria, assumptions, and models used in local planning activities prior to finalizing the Local Plan.	**PJM Interconnection, LLC, ER13-198-006/007**: Local planning activities include planning for Supplemental Projects and, therefore, consistent with the coordination planning principle, we understand this sentence to mean that stakeholders will have an opportunity at the early stages of each individual PJM transmission owner's planning of Supplemental Projects (i.e., before each transmission owner actually identifies any potential Supplemental Project) to review the criteria, assumptions, and models each individual transmission owner uses to plan Supplemental Projects.

OA, Schedule 6, Section 1.3(d)	FERC Interpretation
The Subregional RTEP Committees shall be responsible for the timely review of the criteria, assumptions and models used to identify reliability criteria violations, economic constraints, or to consider Public Policy Requirements, proposed solutions prior to finalizing the Local Plan, the coordination and integration of the Local Plans into the RTEP, and addressing any stakeholder issues unresolved in the Local Plan process.	**PJM Interconnection, LLC, ER13-198-006/007**: However, the Operating Agreement states that Subregional RTEP Committees will be responsible for "addressing any stakeholder issues unresolved in the Local Plan process."[27] Thus, a stakeholder can raise any unresolved concerns it may have about an individual transmission owner's process for planning Supplemental Projects as part of the Subregional RTEP Committees process, **all prior to the Local Plan being finalized**.

CTOA

PURPOSE: The CTOA was for the purpose of facilitating coordination of planning and operation of Transmission Facilities AND to transfer certain planning and operating responsibilities to PJM.

[Article 2 – Purposes and Objectives]

- The Parties have entered into this Agreement to: (i) facilitate the coordination of planning and operation of their respective Transmission Facilities within the PJM Region; (ii) transfer certain planning and operating responsibilities to PJM; (iii) provide for regional transmission service pursuant to the PJM Tariff and subject to administration by PJM; and (iv) establish certain rights and obligations that will apply to the Parties and PJM.

CTOA

CTOA reserves the authority and responsibility to operate and maintain transmission facilities owned by the TOs to the TOs. [CTOA Section 4.5].

CTOA

The OA and the CTOA also reserve the authority to for planning transmission expansions and enhancements to PJM:

- 4.1.4 Planning Information. Each party shall transfer to PJM, pursuant to this Agreement and in accordance with the Operating Agreement, the responsibility to prepare a Regional Transmission Expansion Plan and to provide information reasonably requested by PJM to prepare the Regional Transmission Expansion Plan and shall otherwise cooperate with PJM in such preparation.

- 4.1.5 Operations Support. As required by the PJM Tariff, the Operating Agreement, the PJM Manuals, or as otherwise reasonably requested by PJM, each Party will provide to PJM necessary data, information and related technical support consistent enabling PJM to monitor and analyze system conditions with so that PJM may affirmatively determine that PJM is in compliance with NERC standards.

- 4.1.2 Directing the Operation of Transmission Facilities. “Each Party shall transfer to PJM, pursuant to this Agreement and in accordance with the Operating Agreement, the responsibility to direct the operation of its Transmission Facilities provided that such transfer is not intended to require any change in the physical operations or control over Transmission Facilities.

- 4.2.1 Obligation to Build. Subject to: (i) the requirements of applicable law, government regulations and approvals, including, without limitation, requirements to obtain any necessary state or local siting, construction and operating permits; (ii) the availability of required financing; (iii) the ability to acquire necessary right-of-way; (iv) the right to recover, pursuant to appropriate financial arrangements and tariffs or contracts, all reasonably incurred costs, plus a reasonable return on investment; and (v) other conditions or exceptions set forth in the Regional Transmission Expansion Planning Protocol, Parties designated as the appropriate entities to construct and own or finance enhancements or expansions applicable to the PJM Region specified in the Regional Transmission Expansion Plan or required to expand or modify Transmission Facilities pursuant to the PJM Tariff shall construct and own or finance such facilities or enter into appropriate contracts to fulfill such obligations.

CTOA

Operating Agreement requires PJM to take into account the legal and contractual rights and obligations of the TOs. However – it also requires PJM to strive for consistency in planning data and assumptions.

- Operating Agreement, Schedule 6, Section 1.4(d): The Regional Transmission Expansion Plan shall (i) avoid unnecessary duplication of facilities; (ii) avoid the imposition of unreasonable costs on any Transmission Owner or any user of Transmission Facilities; (iii) take into account the legal and contractual rights and obligations of the Transmission Owners; (iv) provide, if appropriate, alternative means for meeting transmission needs in the PJM Region; (v) provide for coordination with existing transmission systems and with appropriate interregional and local expansion plans; and **(vi) strive for consistency in planning data and assumptions that may relieve transmission congestion across multiple regions.**

CTOA

Not bullet-proof…

In the Order 1000 compliance cases, FERC rejected the TO's argument that the CTOA provisions that included a federal right of first refusal are entitled to a *Mobile-Sierra* presumption.

FERC stated that it did not exercise its discretion to grant *Mobile-Sierra* protection to all the rate-related provisions—including the right of first refusal provision—as the TOs contended; rather, the Commission granted very limited *Mobile-Sierra* protection to the allocation of filing rights as between the transmission owners and PJM.

Maintenance vs. Planning

"Maintenance" is not defined. Has been discussed…

"While the analysis required to distinguish between a modification sufficient to trigger compliance from routine maintenance, repair and replacement is complex, the distinction is hardly subtle. Routine maintenance, repair and replacement occurs regularly, involves no permanent improvements, is typically limited in expense, is usually performed in large plants by in-house employees, and is treated for accounting purposes as an expense. In contrast to routine maintenance stand capital improvements which generally involve more expense, are large in scope, often involve outside contractors, involve an increase of value to the unit, are usually not undertaken with regular frequency, and are treated for accounting purposes as capital expenditures on the balance sheet. As outlined in Section III, the only two courts which have addressed this issue have essentially adopted this same analysis."

US v. Ohio Edison Company [276 F. Supp.2d 829, S.D. Ohio, Eastern Division (August 7, 2003]

What TDUs and Customers Want?

Consistent with FERC direction and principles of coordination, openness, transparency, information exchange and comparability:

1) the ability to ensure that planned facilities are indeed necessary and economical
2) transparent criteria, assumptions and models
3) meaningful opportunity for review and input
4) consistency and uniformity to the extent practical