



THE ENERGY COUNCIL OF RHODE ISLAND

Advocating for affordable energy prices and a robust supply of power in Rhode Island

RI Energy Facility Siting Board
Meg Curren, Chairperson
89 Jefferson Blvd
Warwick, RI 02888

September 21, 2016

Members of the Board,

We submit this letter and attachments as our testimony regarding the need for greater generating capacity of electricity in Rhode Island and New England.

You are most assuredly aware of the seven nuclear, coal and oil fired plants being shut down in New England over the next few years, which generate more than 4,200 megawatts a year and the potential for more to close, raising the potential loss to 10,000 megawatts.

While distributed generation, demand resources and imports will help in restoring some of that loss, in our opinion, it will not be enough to come on line, fast enough or be reliable enough to replace the loss.

Our membership, large Rhode Island energy users bear the brunt of the cost of the forward capacity market in their bills now. Much has been said lately about the last forward capacity market, as a sign the wholesale market is able to replace this generating loss and therefore, the proposed Invenergy power plant in Burrillville is not needed.

On June 28 of this year, TEC-RI sponsored a seminar for large energy users, specifically to discuss the forward capacity market. Andrew Gillespie, Principal Analyst at ISO-NE prepared and made a presentation, a copy of which has been made available to you tonight.

I asked him one question during his presentation and that question was, "opponents of the proposed power plant in Rhode Island point to the last February forward capacity auction as a sign that the proposed power plant is not

needed”, is that true? His answer was clarified by ISO in press release issued the following week:

“The ISO analyst was speaking at a workshop on the Forward Capacity Market and, in response to a question about the need for the proposed Burrillville power plant, he noted the facts: that, resources that clear in a forward capacity auction are, by definition, needed to meet the region’s capacity requirement. The analyst noted that the region has seen significant resource retirements and, with these retirements, the region went from a capacity surplus to a capacity shortfall, and the higher prices resulting from that supply-and-demand dynamic signaled the need for new resources in New England.”

As an aside, “I want to clarify a couple of possible misconceptions about how the auction operates. The auction is managed by an auctioneer running a sophisticated software program that selects the most cost-effective offers to meet future demand. New resources offer the number of megawatts they want to commit, and the price they’re willing to accept, in competition with other resources, including existing plants. The ISO doesn’t pick and choose resources; and the auction can’t change a resource’s megawatt offer – in other words, if a resource owner’s offer is more megawatts than are needed, the ISO and the auctioneer can’t reduce the megawatts offered. It’s up to resource owners to decide their bidding strategy, including price and number of megawatts offered into the auction.”

I have also attached an ISO New England Update Report Update that was provided during another ISO presentation last Thursday, in Providence, RI at the ISO Consumer Liaison quarterly meeting, which TEC-RI planned and facilitated with them.

We rely heavily on ISO to present fact based information about capacity, forward capacity and reliability. We don’t make this stuff up and they are not opinions, based on who is paying an attorney or consultants, to represent their biased opinions. We would ask you to familiarize yourself with these two attachments, as therein lies the facts of the forward capacity market and reliability issues.

Madam Chair, our members and other large commercial and industrial users in the state are also some of the largest employers in the State of RI. Their ability to employ our residents is contingent on their ability to compete and the cost of electricity in Rhode Island and New England is already amongst the highest in the lower 48 states.

A few months ago, a coalition of business and labor was able to help stop a bill from passing at the State House that would have done an end run around the regulatory process that is now in place. The lack of passage of that bill reaffirms, the Energy Facility Siting Board fully controls, through process and decision, whether this project moves forward.

We are here tonight to say in our opinion, based on impartial facts by a neutral and uninterested party that the facts speak to the need for this gas fired energy plant and it is dire and very much needed.

It would be unfortunate and irresponsible with so much uncertainty about the availability of future power in New England, to not build this plant, which will supply reliable power to Rhode Island and the region.

Do you really want to gamble that “maybe” we’ll have enough reliable power in the future? Or do you want to guarantee it and protect the businesses and employees here in Rhode Island? That is the very simple question before you.

Thank you for allowing us to testify on this very important matter to all Rhode Islanders.

Regards,



Douglas W. Gablinske
Executive Director of TEC-RI

JUNE 28, 2016 | CRANSTON, RI

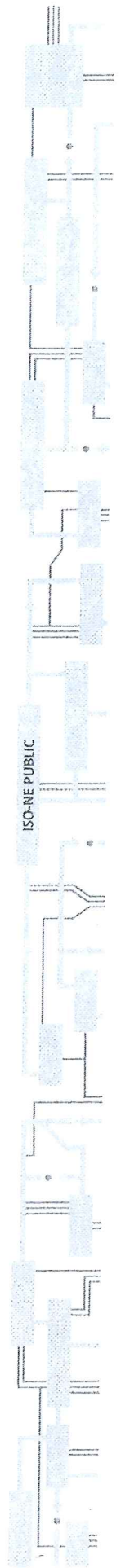
Overview of the Forward Capacity Market



*The Energy Council of Rhode Island (TEC-RI) and
Best Energy Practice Capacity Market Seminar*

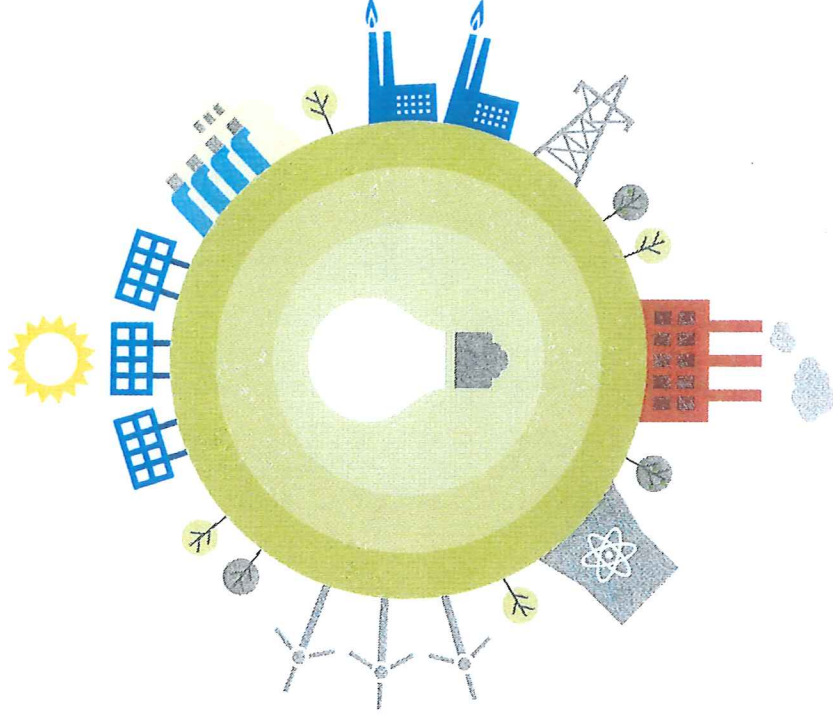
Andrew Gillespie

PRINCIPAL ANALYST, MARKET DEVELOPMENT



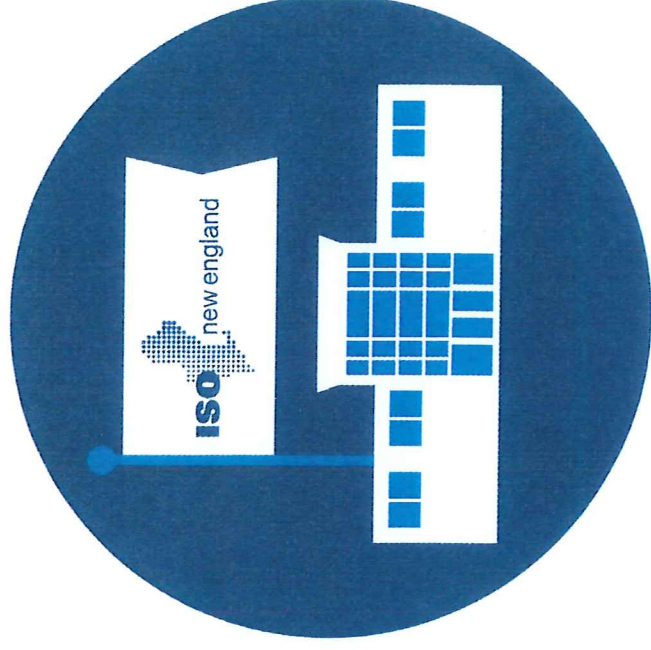
Overview of Presentation

- About ISO New England
- Major Responsibilities
- Forward Capacity Market Overview
- Forward Capacity Market Mechanics
- Who Pays for Capacity



ISO New England (ISO) Has Two Decades of Experience Overseeing the Region's Restructured Electric Power System

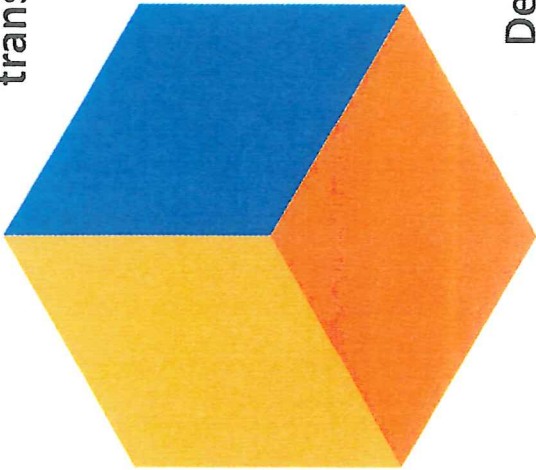
- **Regulated by the Federal Energy Regulatory Commission**
- **Reliability coordinator for New England under the North American Electric Reliability Corporation**
- **Independent of companies in the marketplace and neutral on technology**



Reliability Is the Core of ISO New England's Mission

Fulfilled by three interconnected and interdependent responsibilities

Overseeing the day-to-day
operation of New England's
electric power generation and
transmission system



Managing
comprehensive
regional **power**
system **planning**

Developing and
administering the region's
competitive **wholesale**
electricity markets



Ensuring Fair and Efficient Wholesale Electricity Markets Is a Major Responsibility

Energy Market

Daily market for wholesale customers to buy and sell electric “energy”

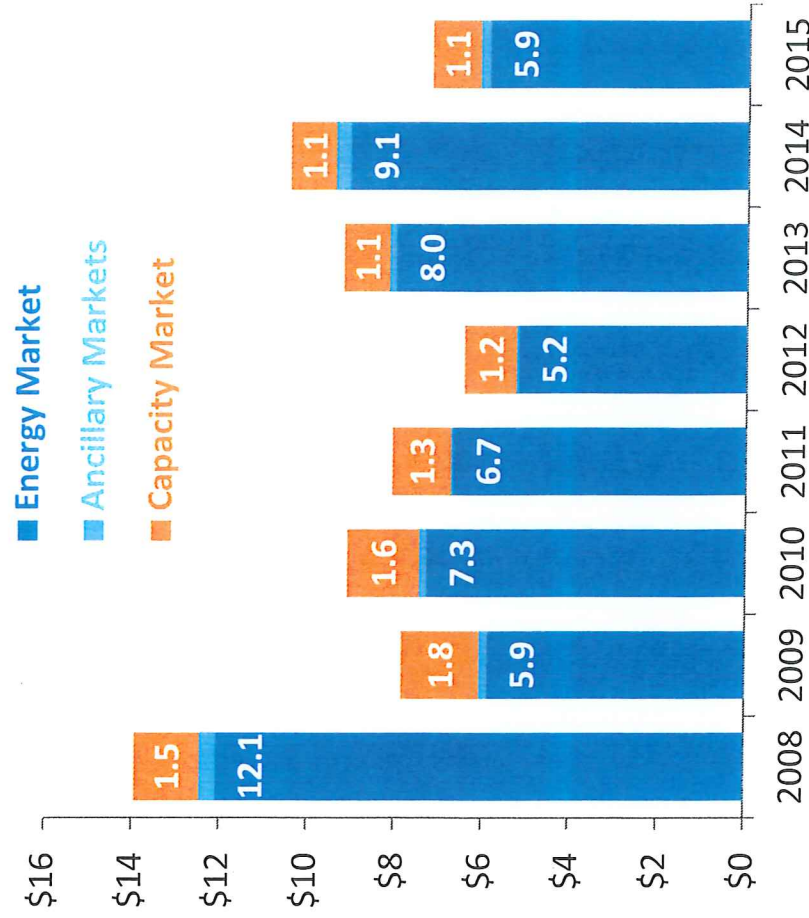
Forward Capacity Market

ISO determines capacity needs three years into the future and resources compete to sell capacity to the system through annual forward capacity auctions

Ancillary Markets

Resources are compensated for providing regulation services and reserves to ensure reliability in real time

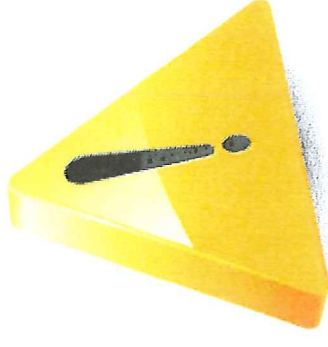
Annual Value of Wholesale Electricity Markets
(in billions)



FORWARD CAPACITY MARKET OVERVIEW



Important Information

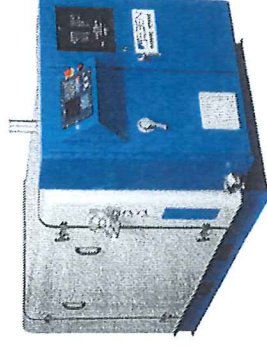
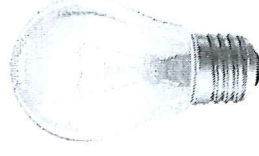
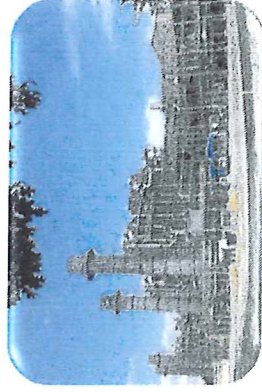


- It is important that you read the rules and understand them; this is a brief introduction to the **Forward Capacity Market**
- The rules that govern the Forward Capacity Market are extensive – most are included in Market Rule 1, Section III.13
- The rules govern, but there are often proposals to modify the rules in various stages
 - Some are still in stakeholder discussions
 - Some are pending at the Federal Energy Regulatory Commission (FERC)
 - Some have future effective dates (e.g., *Pay for Performance*)



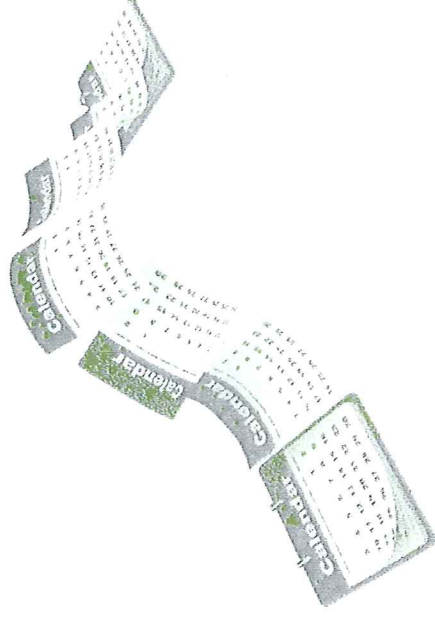
Forward Capacity Market Overview

- The **Forward Capacity Market (FCM)** is a long-term (three-year forward) wholesale electricity market that assures resource adequacy, locally and systemwide
- The market is designed to promote **economic investment** in supply and demand resources where they are needed most
- Capacity resources may be **new or existing** resources, and include supply from power plants, import capacity, or demand resources



Forward Capacity Market Overview, continued

- To purchase enough qualified resources to satisfy the region's future electricity needs and allow enough time to construct new capacity resources, **Forward Capacity Auctions** are held each year approximately three years in advance of when the capacity resources must provide service
- That delivery period is called the **Capacity Commitment Period (CCP)**
- The CCP is a **12-month period** that begins June 1 and ends May 31



Forward Capacity Market Overview, *continued*

- Capacity resources compete in an annual auction to obtain a commitment to supply capacity in three years' time; this commitment is called a **Capacity Supply Obligation (CSO)**
- Suppliers with the lowest-priced offers clear the auction and receive capacity payments based on the auction clearing price—these payments are in addition to what resources receive in the energy and reserve markets
- In exchange for capacity payments, the resources have an **obligation** to be ready to run when called on



Why Have a Forward Capacity Market?



- For some resources, **infrequent** dispatch provides **limited opportunities to fully recover fixed costs**
 - Energy prices may not be high enough for long enough
 - Expenditures not recovered in the energy and ancillary service markets are often called the “missing money”
- Not just a **peaking resource problem** - resources with **frequent** dispatches may not make enough money in the energy markets to cover their costs
 - Base-load generation can be very capital intensive - there may still be a “missing money” problem due to the size of the investment/costs



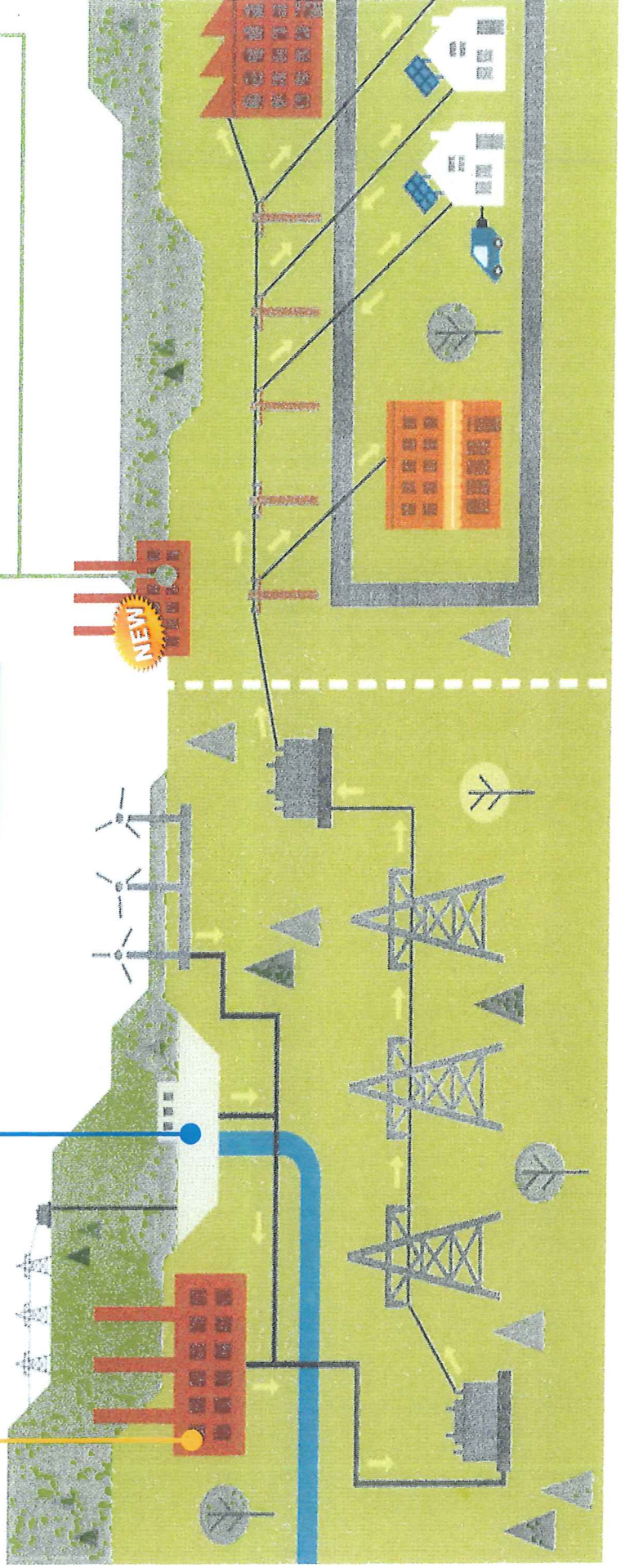
Objectives of a Capacity Market

Provide an opportunity for existing capacity to recover the “missing money”

Procure enough capacity to meet load and reserve requirements

Provide incentives to deliver energy when it is needed

- Provide financial incentives to invest in new capacity
- Attract capacity where it is needed – location matters



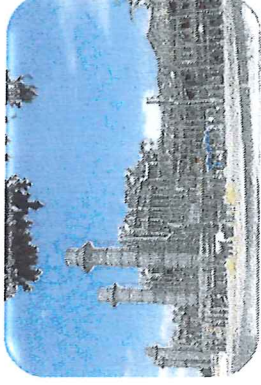
FORWARD CAPACITY MARKET MECHANICS



Who Can Participate as Supply in the FCM?

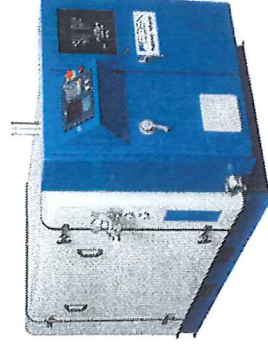
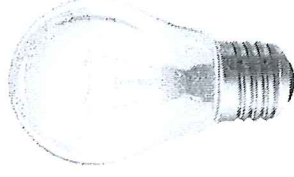
- **Supply-Side Resources**

- Traditional generation, like coal, oil, nuclear, and natural gas
- Intermittent generation, like wind and solar
- Imports



- **Demand-Side Resources**

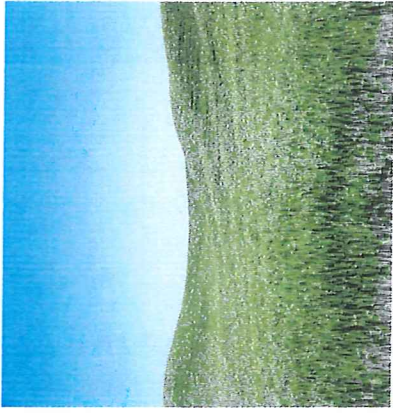
- Energy efficiency
- Load management
- Distributed generation



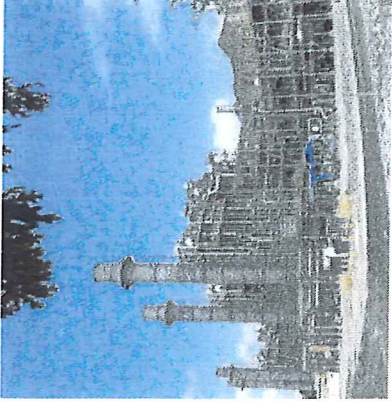
Resources Must Qualify to Compete in the Auction

The FCA is designed to procure only those capacity resources that will be commercial and available at the beginning of each capability year.

New

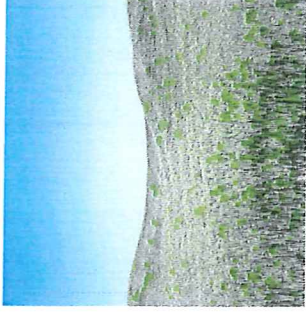


Existing



FCA treats new and existing capacity resources differently

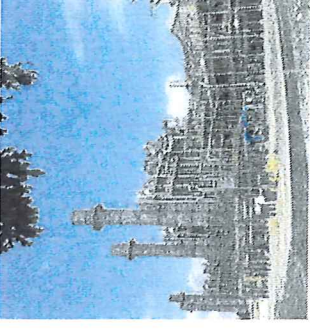
New Capacity Resources



- For *supply-side* resources, project sponsors must:
 - Submit a Show of Interest (SOI) form
 - Submit a completed qualification package
 - Provide detailed documentation (import interface, source of capacity, summer/winter capability)
- For *demand-side* resources, project sponsors must:
 - Undergo a feasibility review
 - Outline how demand reduction will be achieved
- Financial Assurance is required
- New resources offer into market, but cannot submit an offer at a price that is below the resource's minimum offer price

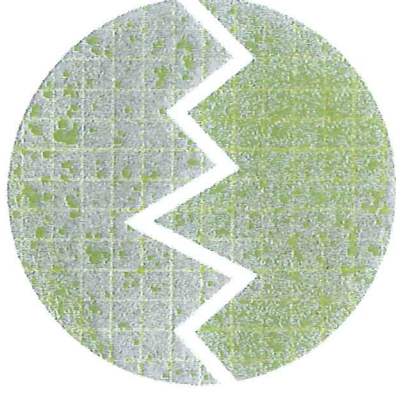
Existing Capacity Resources

- ISO determines summer and winter qualified capacity for each resource
- Existing resources are automatically entered into the capacity auction based on their qualified capacity
- To opt out of the capacity market, existing resources can submit a de-list bid
 - Can be for one year or permanently
 - Internal Market Monitor provides oversight of most de-list bid types
 - System Planning will review reliability impact

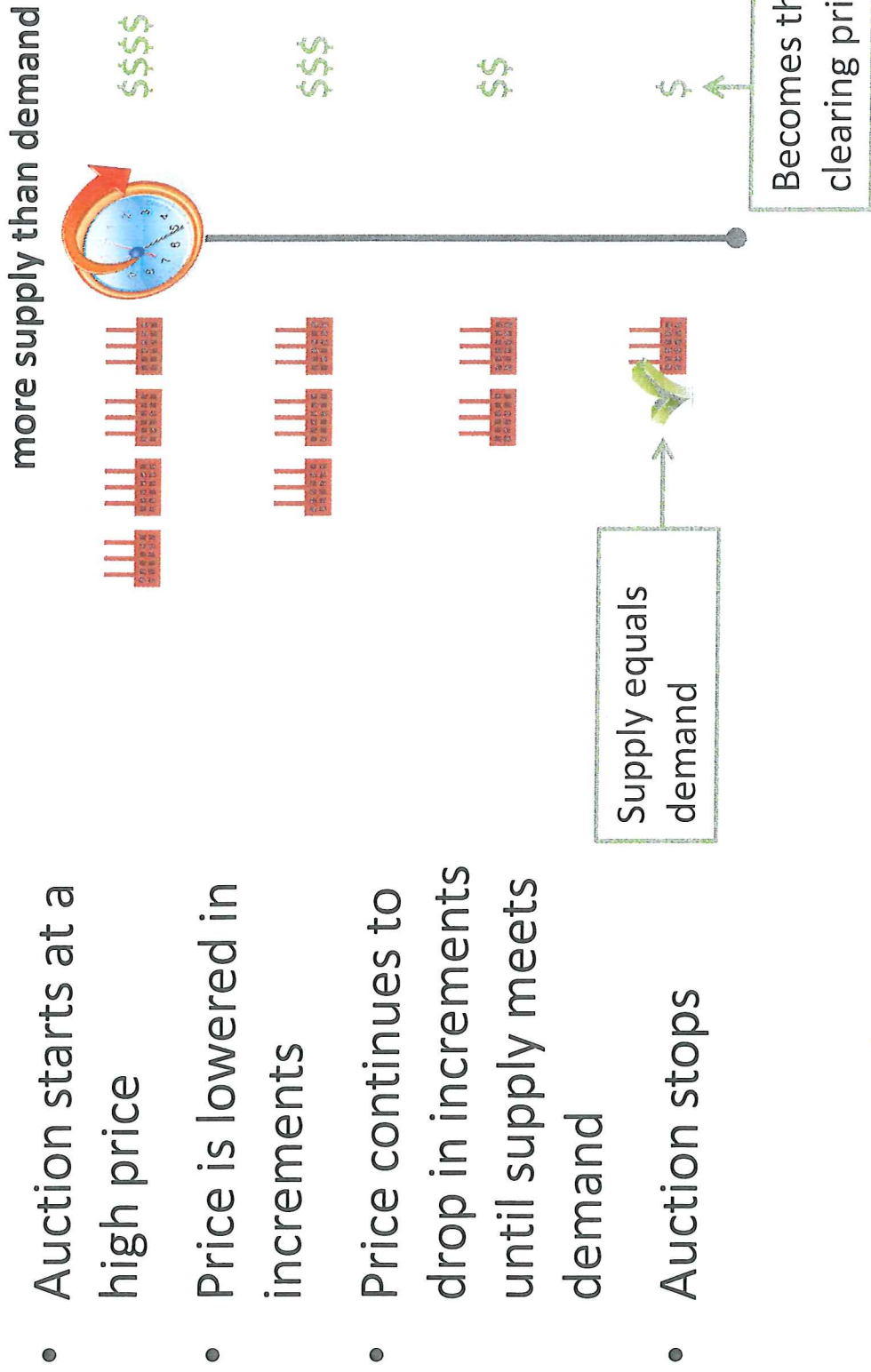


New and Existing Resources Compete to Satisfy the Installed Capacity Requirement

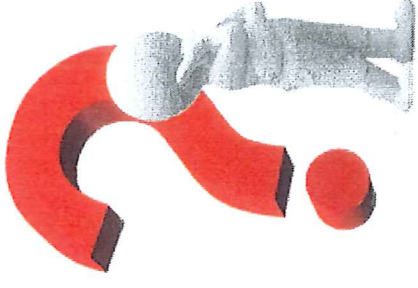
- The Installed Capacity Requirement (ICR) is the amount of capacity needed such that the probability of disconnecting non-interruptible customers due to resource deficiency is no more than once in ten years
- Some of the factors considered in determining the ICR amount are:
 - Weather variations on load forecasts
 - Resource equivalent forced outage rates
 - Reliability benefits from interconnections with adjacent control areas



Auctions Use a Descending Clock Format



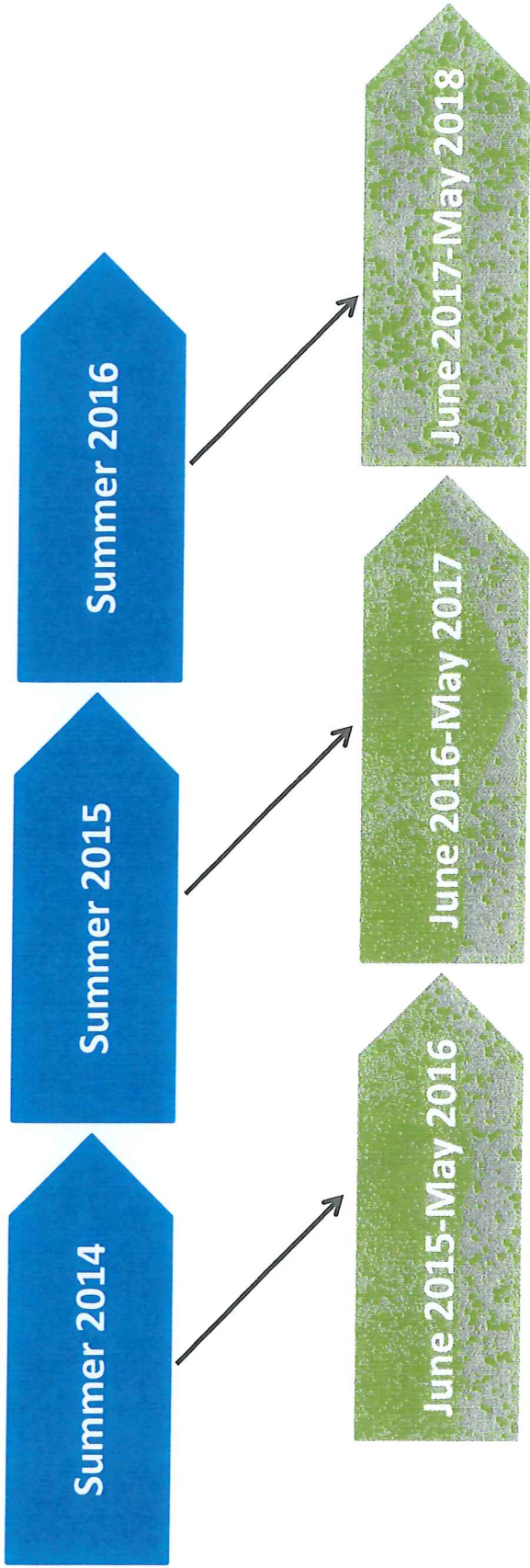
Who Pays for Capacity?



- Wholesale customers ultimately pay for the capacity required to serve their loads
- Customers with an interval meter are assigned an Installed Capacity (ICAP) Tag based on their demand during the ISO-NE annual system peak hour
- This is called the customer's "coincident peak contribution value"
- Each customer will get an ICAP Tag based on their coincident peak contribution value, but there is a lag between setting an ICAP tag and actually paying for it

The Payment Period for a Customer's ICAP Tag Takes Effect One Year Later

Customer ICAP Tag Set Based on Energy Use During System Peak Hour



Customer Payment Period for Associated ICAP Tag

- Some customers may be able to influence this charge by managing their loads on the hottest days of the year

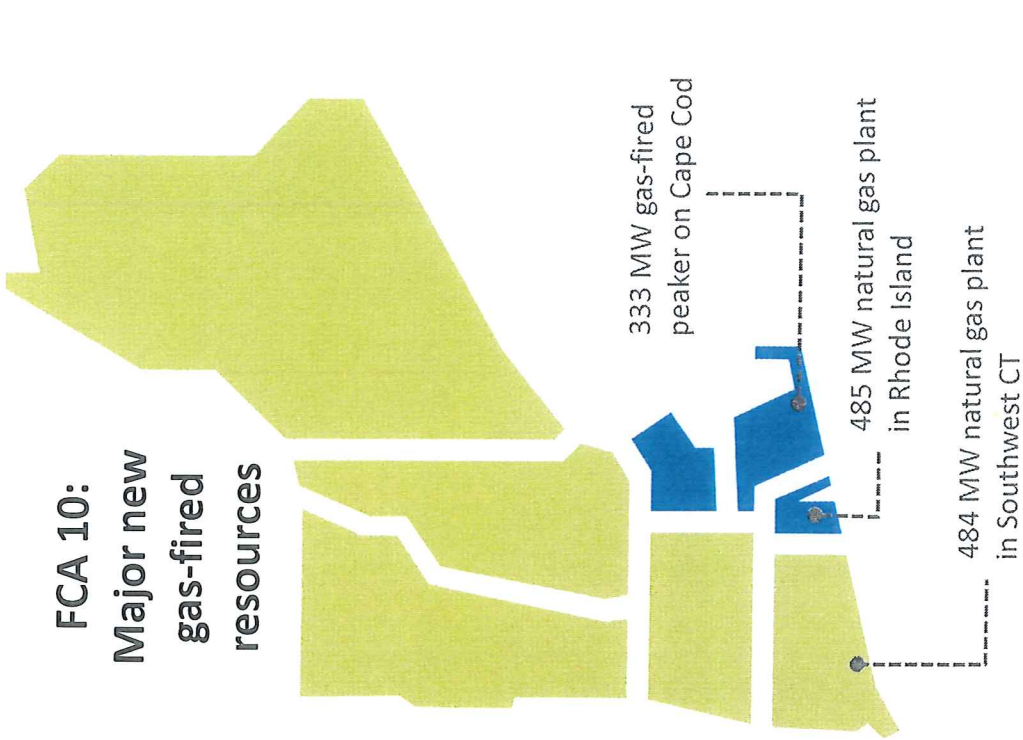


APPENDIX



ISO-NE's Capacity Market Has Attracted New Peaking and Combined-Cycle Gas Generation to Load Centers

- 3,000 MW of gas-fired generation have come forward in recent auctions (FCAs 7–10) with commitments to be available in 2017–2019
- A mix of existing and new resources cleared in FCA 10, including three new, gas-fired, dual-fuel power plants totaling **1,300 MW**
- FCA 10 also attracted new renewable resources, demand resources, and imports:
 - Solar: 40 MW
 - Wind: 27 MW
 - Hydro: 2 MW
 - Demand resources: 371 MW
 - Imports from New York/Canada: 1,361 MW



Recent Forward Capacity Auction Results

Auction Commitment Period	Total Capacity Acquired (MW)	Capacity Required (MW)	Surplus/Deficit (MW)	New Demand Resources ¹ (MW)	New Generation (MW)	Auction Zones ²	Clearing Price (\$/kW-month)
FCA 6 2015/2016	36,309	33,456	2,853	314	79	ROP ME	\$ 3.43 (floor price)
FCA 7 2016/2017	36,220	32,968	3,252	245	800	ROP CT ME NEMA/Boston	\$3.15 (floor price) \$14.99/new & \$6.66/existing
FCA 8 2017/2018	33,712	33,855	-143	355	27	ROP CT ME NEMA/Boston	\$15.00/new & \$7.025/existing \$15.00
FCA 9 ³ 2018/2019	34,695	34,189	506	367	1,060	ROP CT NEMA/Boston SEMA/RI	\$9.55 \$17.73/new & \$11.08/existing
FCA 10 2019/2020	35,567	34,151	1,416	371	1,459	ROP SENE Quebec imports New York imports New Brunswick imports	\$7.03 \$6.26 \$4.00

¹ Demand resources include energy efficiency, demand-response resources, and real-time emergency generation (RTEG).

² Capacity pricing zones: In **FCAs 1 through 6**, Rest-of-Pool (ROP) included western and central Massachusetts (WCMA), Northeast Massachusetts/Boston (NEMA/Boston), Southeast Massachusetts/Rhode Island (SEMA/RI), Connecticut (CT), New Hampshire (NH) and Vermont (VT); Maine (ME) was a separate zone. In **FCA 7 and 8**, ROP included WCMA, SEMA/RI, NH, and VT. In **FCA 9**, ROP included WCMA, VT, NH, and ME. In **FCA 10**, ROP included WCMA, CT, ME, NH, and VT; the new Southeast New England (SENE) zone combined NEMA/Boston and SEMA/RI.

³ From **FCA 9 on**, a sloped demand curve has been used, allowing more or less than the capacity requirement to be procured, depending on price and reliability needs.

SEPTEMBER 15, 2016 | PROVIDENCE, RI

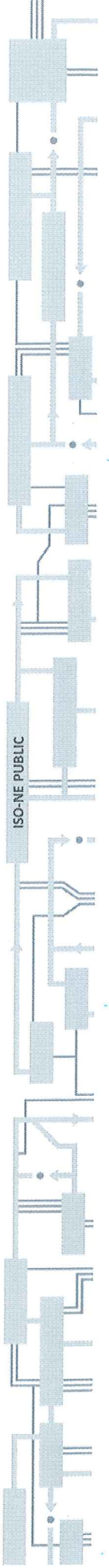


ISO New England Update

Consumer Liaison Group Meeting

Mary Louise “Weezie” Nuara

EXTERNAL AFFAIRS REPRESENTATIVE



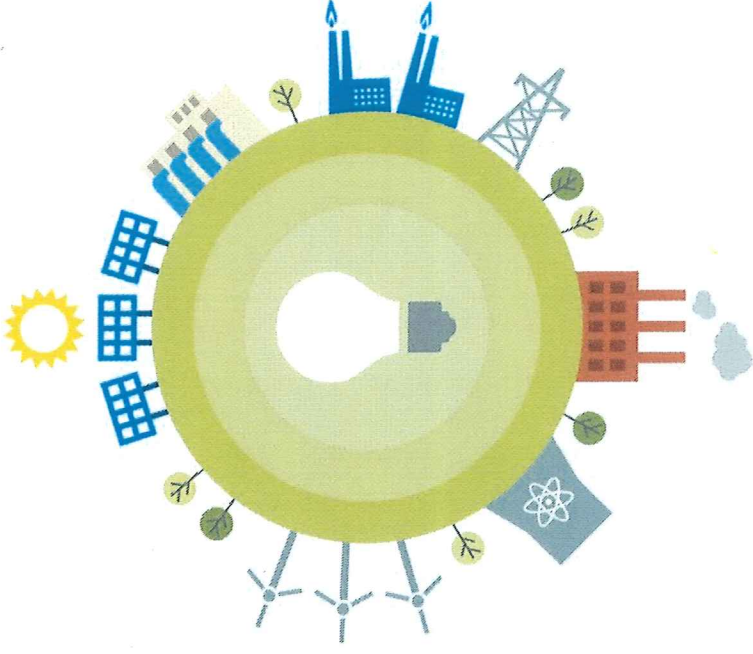
INTEGRATING MARKETS AND PUBLIC POLICY

New England Power Pool (NEPOOL) IMAPP Initiative

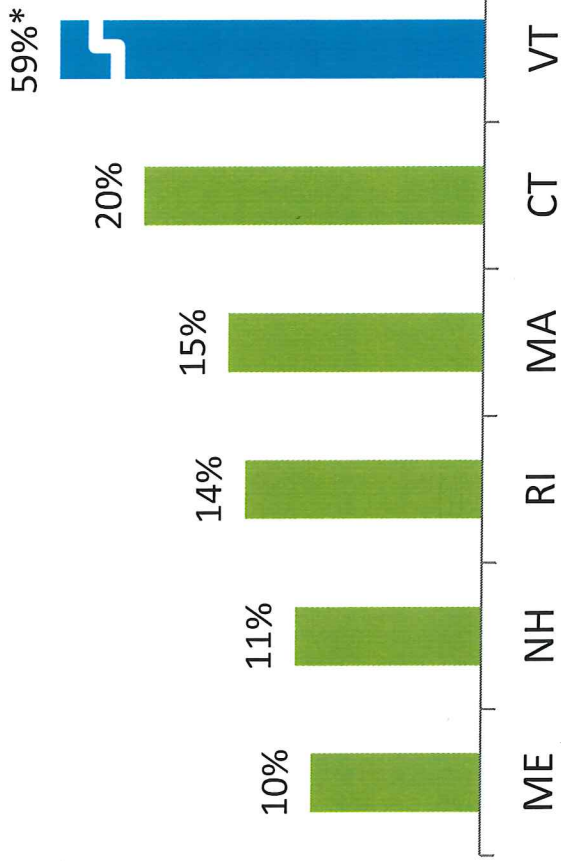


NEPOOL Has Launched a New Initiative Called Integrating Markets and Public Policy (IMAPP)

- In August, NEPOOL launched a stakeholder process with the goal of identifying **potential adjustment(s)** to the wholesale electricity market(s) to accommodate and achieve the New England states' **public policy objectives**
- The region's competitive wholesale electricity markets are designed to maintain **reliability** through the selection of the most economically-efficient set of resources
- The states have **environmental** and **renewable energy** goals that are beyond the objectives of the wholesale electricity markets

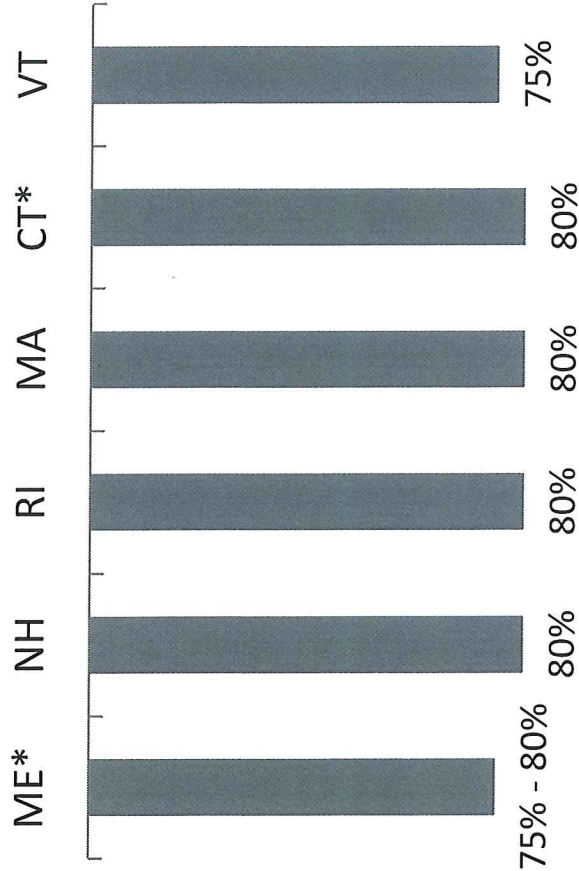


States Have Set Goals to Increase Renewable Energy and Reduce Greenhouse Gas Emissions



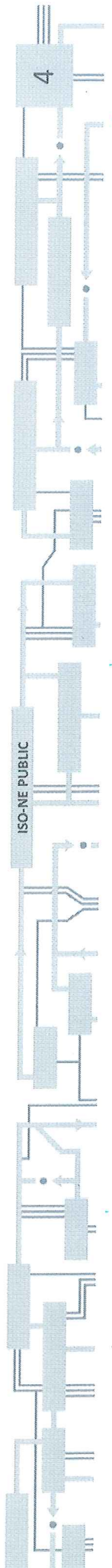
State Renewable Portfolio Standard (RPS) for Class I or New Renewable Energy by 2020

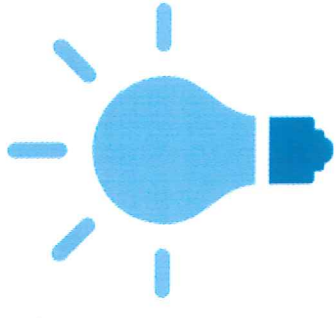
Percent Reduction in Greenhouse Gas (GHG) Emissions Below 1990 Levels* by 2050 (economy wide)



* Vermont's standard recognizes all forms of new and existing renewable energy, and is unique in classifying large-scale hydro as renewable.

* Connecticut's goal is tied to 2001 levels. Maine's goal is tied to 2003 levels.

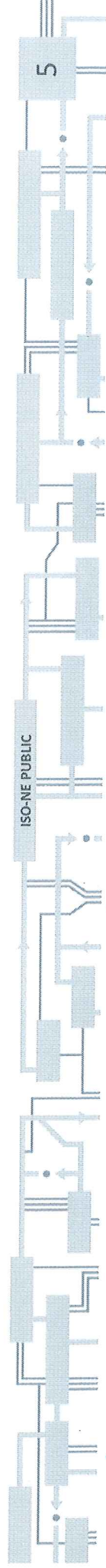




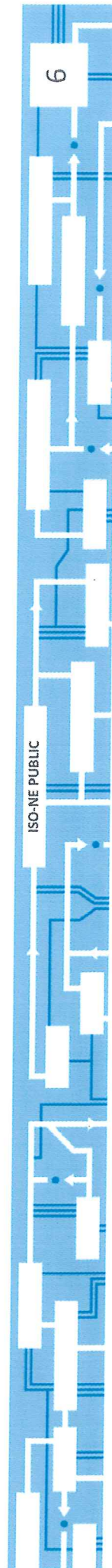
Overview of the IMAPP Schedule

- The first meeting was held on August 11 – “Idea Day”
 - The purpose of idea day was for interested market participants to offer high-level proposals
- Follow-up meetings were held on August 30 and September 14, with additional meetings scheduled for October 6 and November 10
- NEPOOL’s goal is to develop a “**framework document**” by December 2 to provide guidance to the ISO regarding potential changes to the wholesale power markets
- At this stage, the ISO’s role is to **monitor** the discussion

Note: For information on the individual proposals, visit the [NEPOOL website](#) or the ISO’s Wholesale Markets and State Public Policy Initiative [webpage](#).



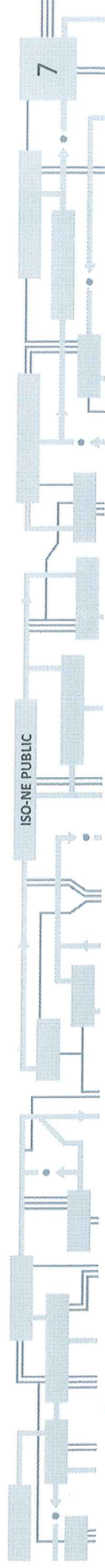
FORWARD CAPACITY AUCTION #11



Forward Capacity Market Overview

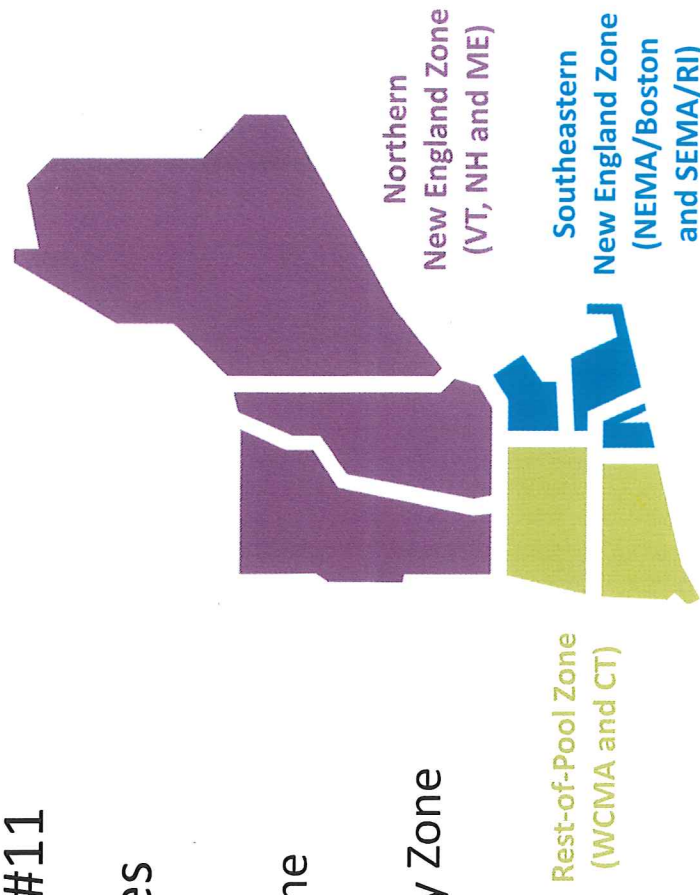


- Procures capacity to meet New England's forecasted **Installed Capacity Requirement (ICR)** three years in the future
- Allows **new** capacity projects to compete in the market and set the price for capacity in the region
- Selects a portfolio of **supply** and **demand** resources through a competitive Forward Capacity Auction (FCA) process
 - Resources must be pre-qualified to participate in the auction
 - Resources must participate and clear in the auction to be paid for capacity during the capacity commitment period
- Provides a long-term (up to 7-year) commitment to new supply and demand resources to encourage **investment**

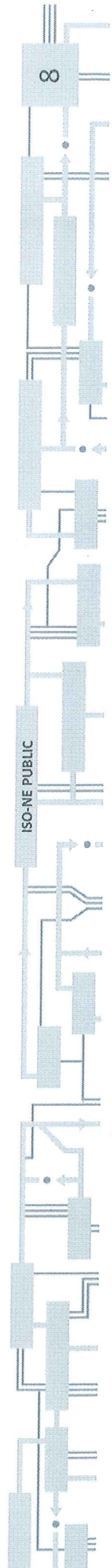


Update on Forward Capacity Auction #11

- The Federal Energy Regulatory Commission (FERC) requires that the ISO have a **process** for determining the appropriate **number and boundaries** of capacity zones over time as conditions change
- The ISO conducted **objective criteria testing** to determine which zones would be modeled in FCA #11
- There will be **three** capacity zones modeled for FCA #11*
 - Northern New England Capacity Zone
 - Export-Constrained
 - Southeastern New England Capacity Zone
 - Import-Constrained
 - Rest-of-Pool Capacity Zone

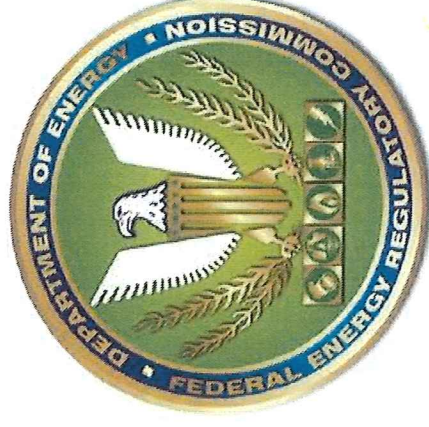


* Subject to stakeholder vote and FERC filing in November



Update on Forward Capacity Auction #11, continued

- In **September**, the NEPOOL Reliability Committee will vote on the zonal determinations and the Installed Capacity Requirement (ICR) value calculations, followed by a vote by the NEPOOL Participants Committee in **October**
- In **November**, the ISO will file the zonal determinations and ICR value calculations with FERC for approval through a pre-FCA informational filing
- FCA #11 is scheduled to take place in **February 2017** for resources needed during the June 1, 2020 to May 31, 2021 capacity commitment period



WHOLESALE ELECTRICITY COSTS



New England Wholesale Electricity Costs(a)

	2008		2009		2010		2011		2012		2013		2014		2015	
	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh	\$ Mil.	¢/kWh
Wholesale market costs																
Energy (LMPs)(b)	\$12,085	9.1	\$5,884	4.6	\$7,284	5.6	\$6,695	4.9	\$5,193	3.9	\$8,009	6.0	\$9,079	6.9	\$5,910	4.5
Ancillaries(c)	\$366	0.3	\$190	0.1	\$164	0.1	\$39	0.0	\$56	0.0	\$155	0.1	\$331	0.3	\$210	0.2
Capacity(d)	\$1,505	1.1	\$1,768	1.4	\$1,647	1.3	\$1,345	1.0	\$1,195	0.9	\$1,057	0.8	\$1,056	0.8	\$1,110	0.8
Subtotal	\$13,956	10.5	\$7,842	6.1	\$9,095	7.0	\$8,079	5.9	\$6,444	4.8	\$9,220	6.9	\$10,466	8.0	\$7,229	5.5
Transmission charges(e)	\$869	0.7	\$1,155	0.9	\$1,417	1.1	\$1,378	1.0	\$1,532	1.1	\$1,806	1.3	\$1,815	1.4	\$1,954	1.5
RTO costs(f)	\$124	0.1	\$116	0.1	\$145	0.1	\$130	0.1	\$139	0.1	\$167	0.1	\$165	0.1	\$165	0.1
Total	\$14,949	11.3	\$9,113	7.1	\$10,657	8.2	\$9,588	7.0	\$8,115	6.0	\$11,193	8.3	\$12,446	9.5	\$9,348	7.1

(a) Average annual costs are based on the 12 months beginning January 1 and ending December 31. Costs in millions = the dollar value of the costs to New England wholesale market load servers for ISO-administered services. Cents/kWh = the value derived by dividing the dollar value (indicated above) by the real-time load obligation. These values are presented for illustrative purposes only.

(b) Energy values are derived from wholesale market pricing.

(c) Ancillaries include first- and second-contingency Net Commitment-Period Compensation (NCPC), forward reserves, real-time reserves, regulation service, and a reduction for the Marginal Loss Revenue Fund.

(d) Capacity charges are those associated with the Forward Capacity Market.

(e) Transmission charges reflect the collection for transmission owners' revenue requirements and tariff-based reliability services, including black-start capability and voltage support. In 2015, the cost of payments made to these generators for reliability services under the ISO's tariff was \$41.9 million.

(f) RTO costs are the costs to run and operate ISO New England Inc. and are based on actual collections as determined under Section IV of the ISO New England Inc. Transmission, Markets, and Services Tariff.



2015 Wholesale Electricity Costs By State

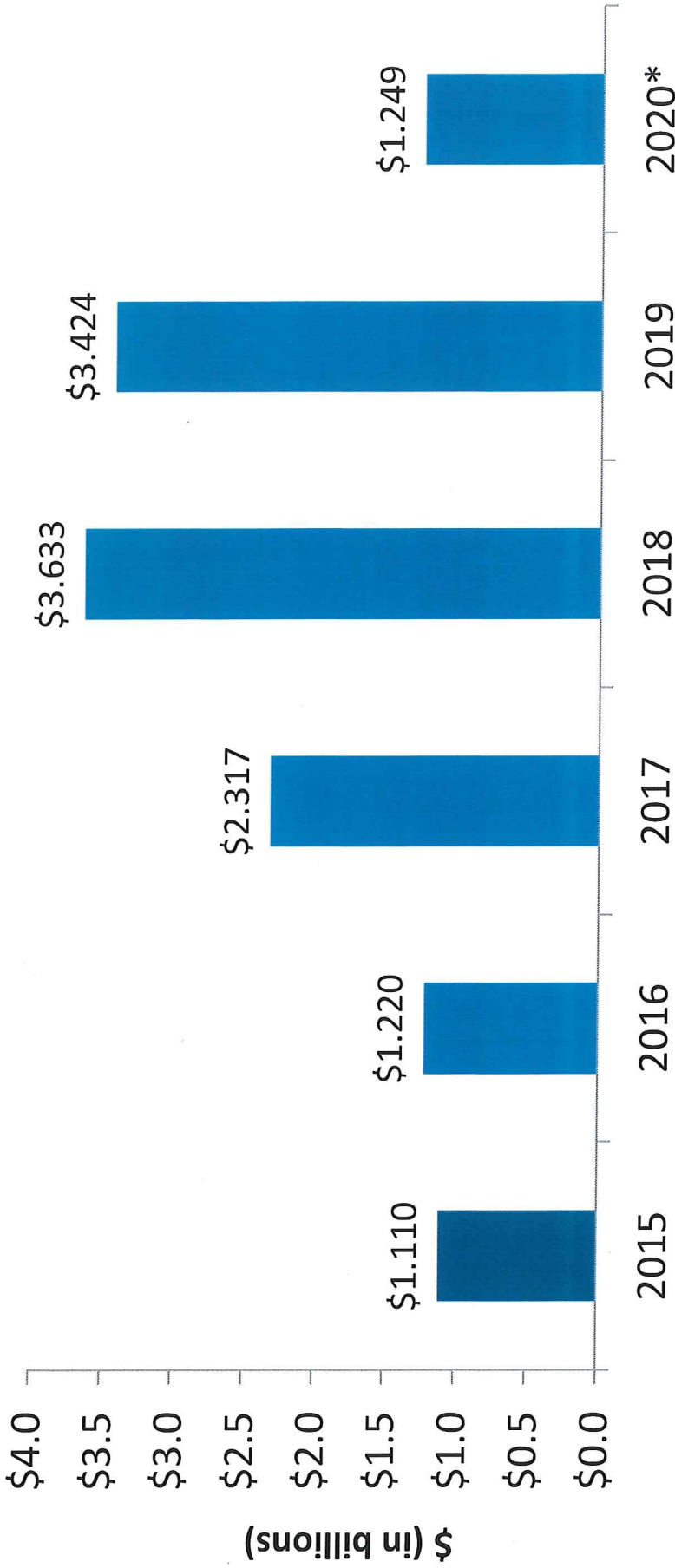
	2015 \$ Millions						TOTAL
	CT	ME	MA	NH	RI	VT	
Wholesale Market Costs							
Energy (LMPs)	\$1,427	\$545	\$2,755	\$543	\$378	\$261	\$5,910
Ancillaries	\$51	\$19	\$98	\$19	\$13	\$9	\$210
Capacity	\$268	\$102	\$517	\$102	\$71	\$49	\$1,110
Subtotal	\$1,746	\$667	\$3,370	\$664	\$462	\$319	\$7,229
Transmission Charges	\$490	\$165	\$906	\$186	\$128	\$78	\$1,954
RTO Costs	\$40	\$15	\$77	\$15	\$11	\$7	\$165
Total	\$2,276	\$847	\$4,353	\$865	\$601	\$405	\$9,348
% of Total	24.3%	9.1%	46.6%	9.3%	6.4%	4.3%	100%

NOTE: The Energy, Ancillaries, Capacity, and RTO costs were determined based on the state's portion of the total Real-Time Load Obligation (RTLO) associated with the six New England states. The Transmission Charges were determined based on the state's portion of the Regional Network Load (RNL) costs.



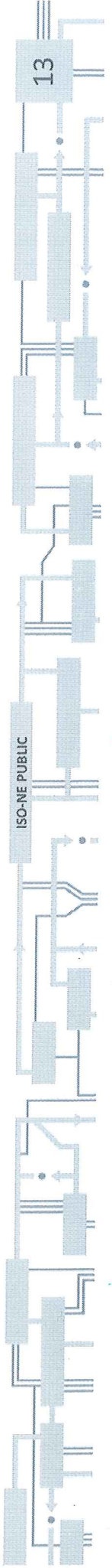
Future Estimated Forward Capacity Market Costs

Annual Forward Capacity Market Costs Based on Capacity Resources Clearing in Recent Forward Capacity Auctions (in billions)



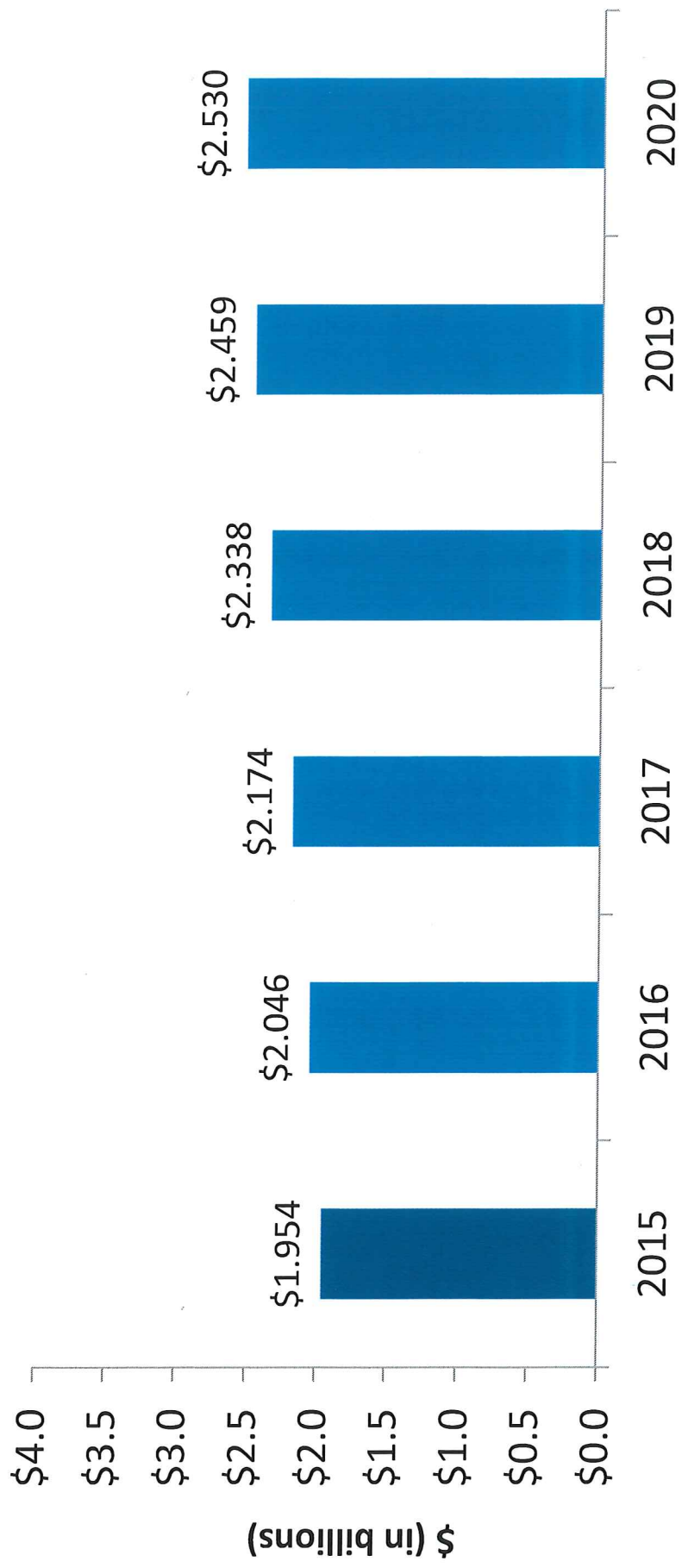
* The Forward Capacity Market cost for 2020 only accounts for the capacity resources that cleared in FCA #10; it does *not* account for the costs associated with the capacity resources that will clear in FCA #11 (needed for the 2020-2021 capacity commitment period).

NOTE: Annualized Forward Capacity Market costs include the costs associated with two capacity commitment periods. These values may fluctuate before and during the relevant capacity commitment period if resources seek to buy or sell their Capacity Supply Obligations through annual and monthly reconfiguration auctions.

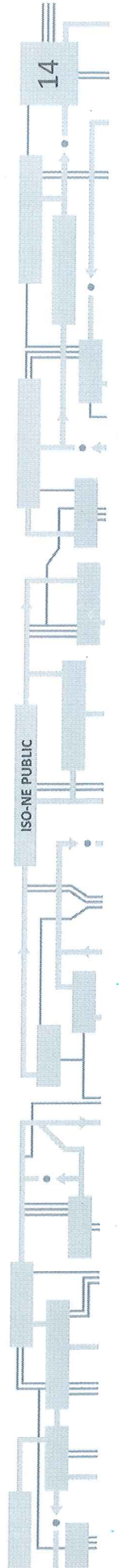


Future Estimated Transmission Costs

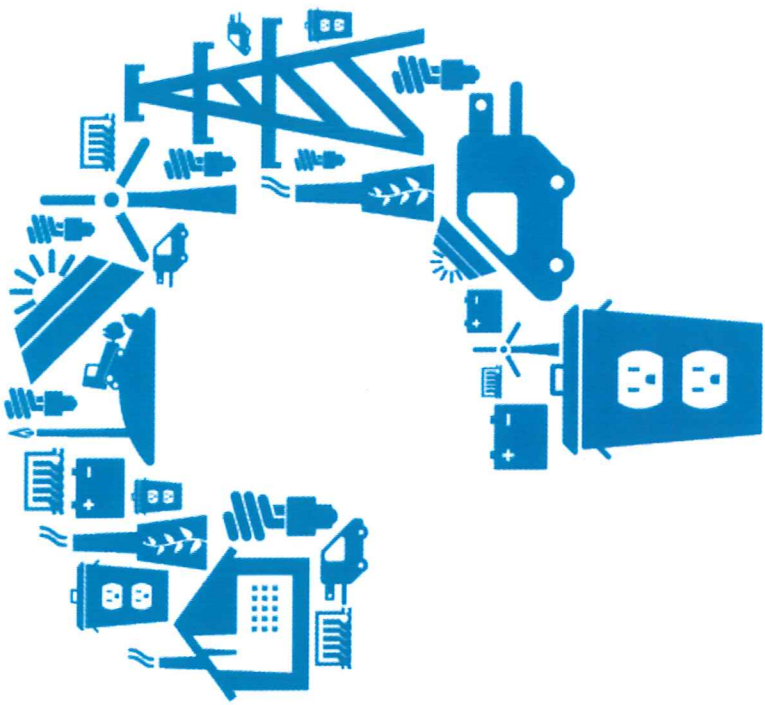
Annual Transmission Costs Based on Forecasted Regional Network Service (RNS) Rates by the Region's Transmission Owners (in billions)



NOTE: The values above are based on the Participating Transmission Owners' [RNS Rates: 2016 – 2020 PTF Forecast](#) presented to the NEPOOL Reliability Committee and NEPOOL Transmission Committee in August 2016. They represent forecasted RNS rates multiplied by average annual Regional Network Load, plus costs associated with tariff-based reliability services, including black-start capability and voltage support. The Participating Transmission Owners' forecasted RNS rates are preliminary and intended for illustrative purposes only. Please be mindful of the disclaimer included in the forecast report.



Questions



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