Market-Based Policy Concepts for Encouraging Fuel Diversity and Retaining Baseload Zero-Carbon Resources

December 4, 2014

1. U.S. Generation Mix

Generation

- Illinois' nuclear plants provide 48% of the state's electricity
- Nuclear provides 91% of Illinois' emission-free generation

Reliability

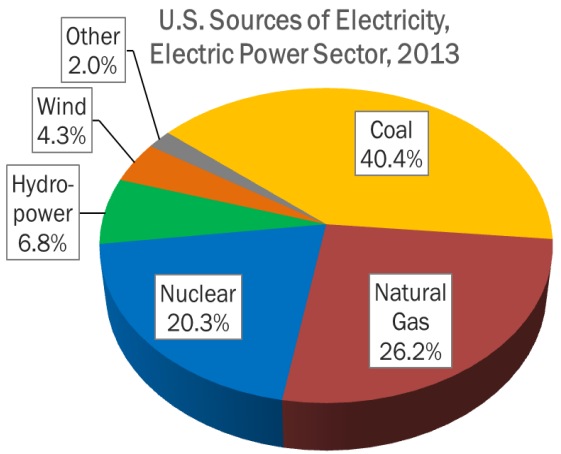
- Highest capacity factor of any electricity source
- Generates electricity 24/7
- Voltage support

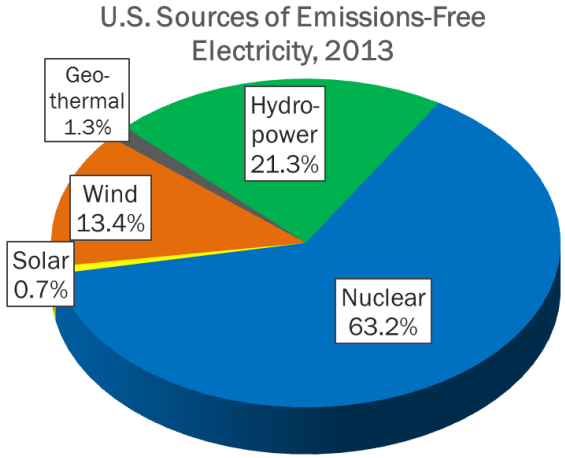
Protection from Price Volatility

- Fuel is the smallest part of production costs of any major generation source

Clean Electricity

- Nuclear is carbon-free electricity
- Nuclear does not contribute to acid rain, particulate pollution or smog





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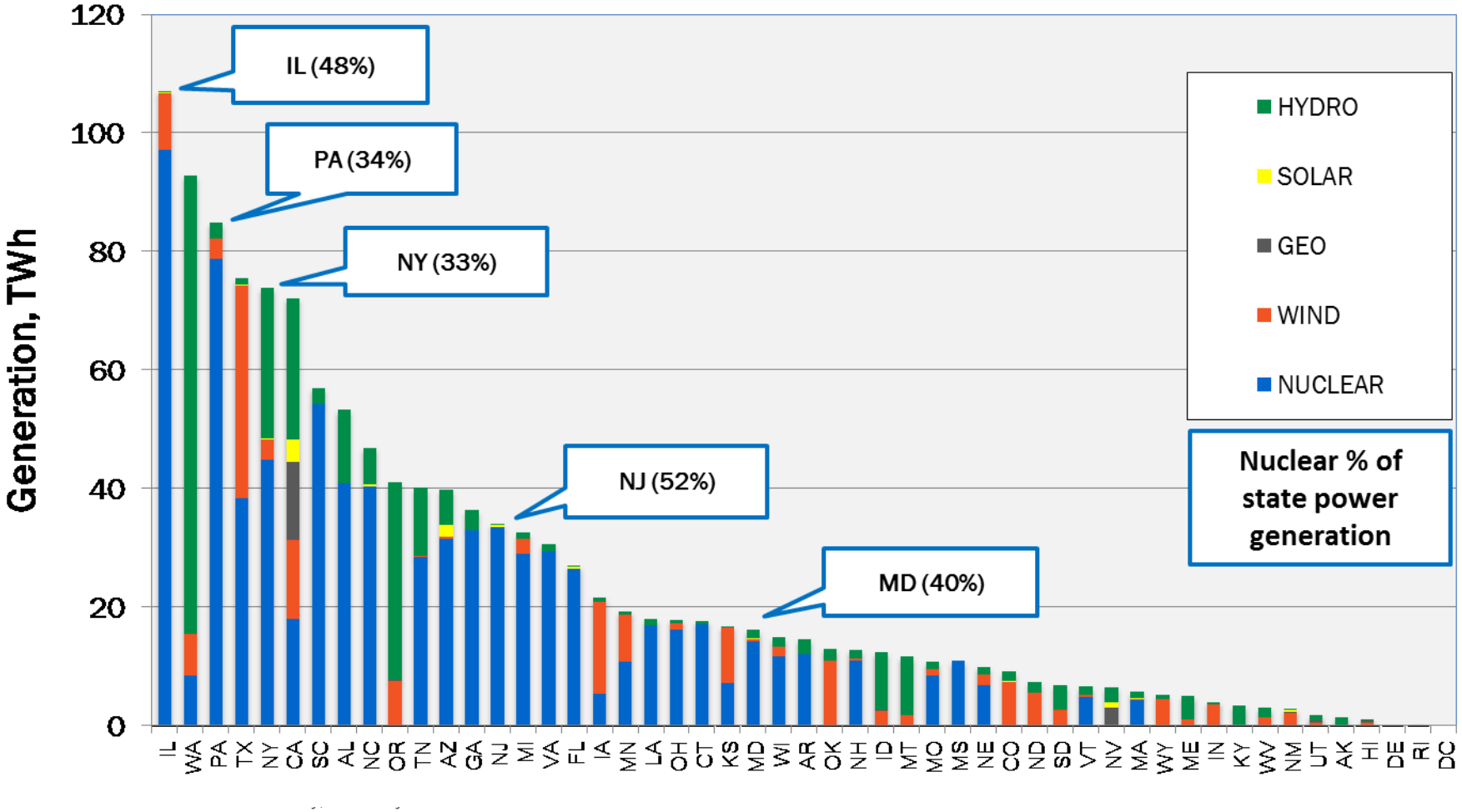
1. U.S. Generation Mix (Cont.)



In 2013, Illinois nuclear plants accounted for 48% of total generation.

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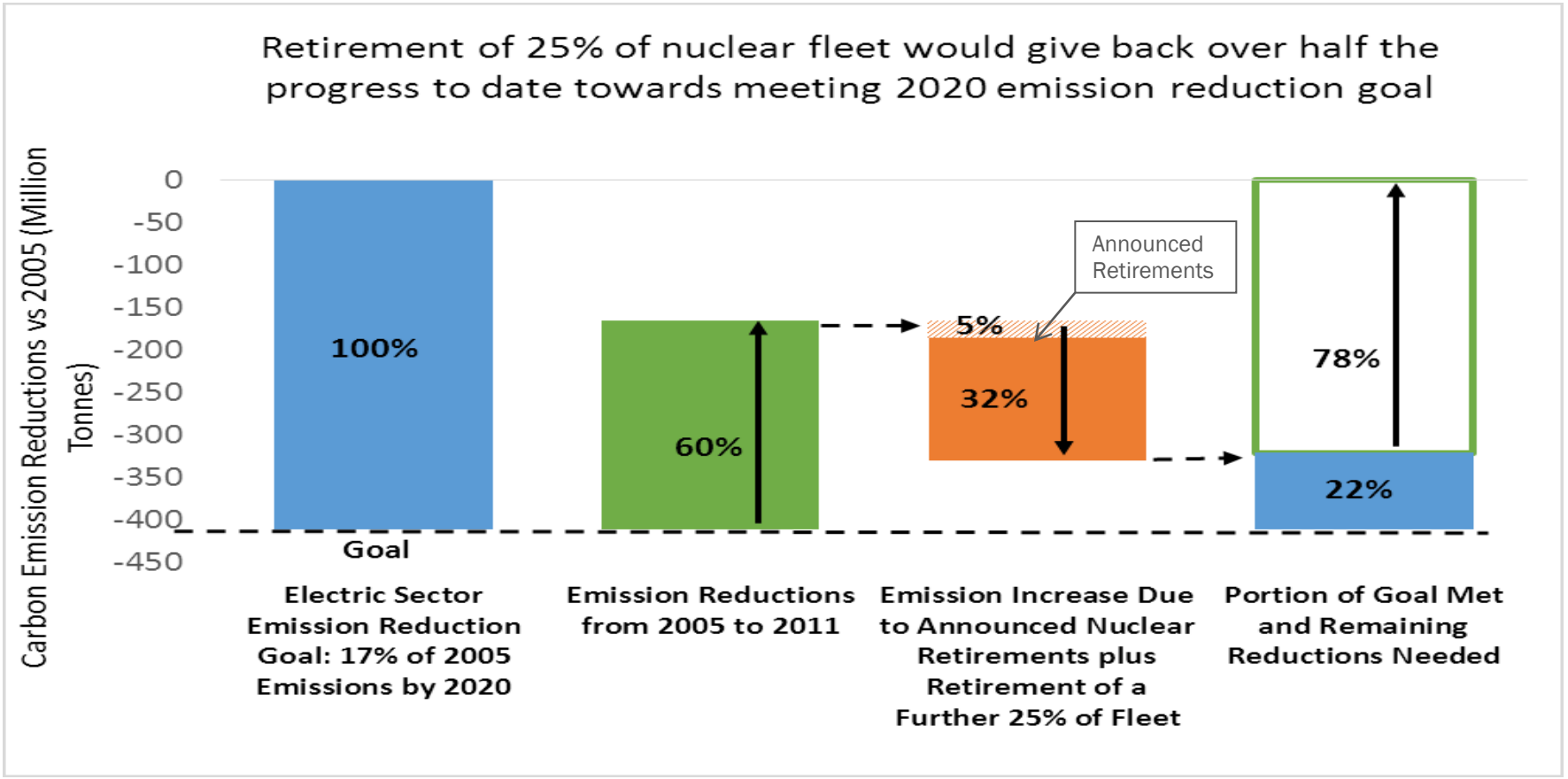
1. U.S. Generation Mix (Cont.)



Nuclear retirement increase assumes retirement of SONGS, Crystal River, Kewaunee, Vermont Yankee, and Oyster Creek plus 24.6 GW of additional "generic" capacity (29.4 GW total, including the announced retirements). Nuclear output is assumed to displace carbon at a rate of 0.67 tonnes per MWh of lost output. Exelon's nuclear fleet contribution is measured at the overall plant level, rather than at ownership.

"Nuclear power has an important role to play in the climate action plan as a low-carbon source of energy." - Energy Secretary Ernest Moniz at the American Nuclear Society 2013 Winter Meeting

Source: EIA; Exelon Estimates

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1. U.S. Generation Mix (Cont.)

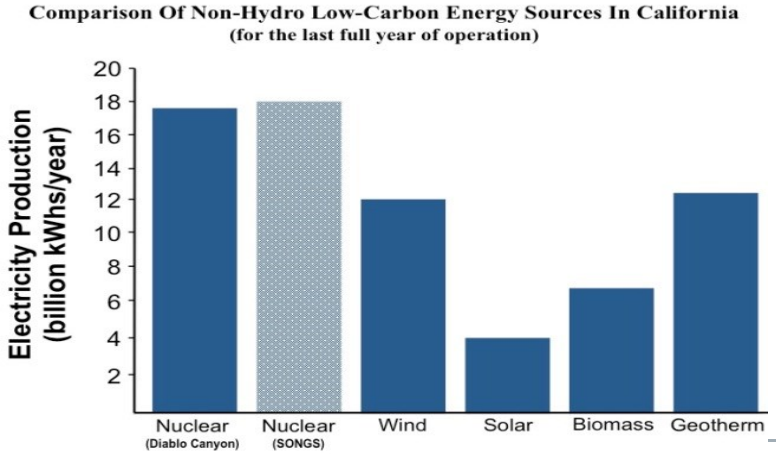
- "California, Germany, and Japan have one thing in common, increased carbon emissions. Within the past three years, each closed nuclear power plants and replaced the virtually emission free power source largely with coal and fossil fuels." Richard Thomas, New York Affordable Reliable Electricity Alliance, 4/22/14

- "When the Kewaunee plant was shuttered in May 2013, Wisconsin lost roughly 5% of its power supply . . . In 2013, GHG emissions from Wisconsin power plants rose to more than 50 million tons, their highest level in eight years. The shutdown of the nuclear plant in Kewaunee prompted utilities to turn to fossil fuels." Milwaukee J. Sentinel, 6/14/14

- Three electricity distribution companies in Massachusetts and New Hampshire announced electricity rate increases for this winter. This collateral damage results from Vermont's choice last year to close the Vermont Yankee nuclear power plant. National Grid says that its customers in western Massachusetts can expect a 37% rate hike on November first, due in large part to the early retirement of the Vermont Yankee nuclear plant. Next door in New Hampshire, a 50% increase in their customer's bills can be expected in November. Customers of the New Hampshire Electric Coop, the state's second largest utility, will face a 12% rise in their winter electricity bills. James Conca, Forbes, 9/29/14

- In one fell swoop, the unnecessary closing of the San Onofre Nuclear Generating Station (SONGS) in San Diego negated nearly all the low-carbon electricity generation from all the wind and solar installed in California. The plant's retirement is equivalent to rolling back the clock on twenty years of solar and wind deployment in the Golden State.

  Also lost were 1,500 local jobs and over $400 million in lost revenue and increased costs to Southern California. But that may be closer to a $billion if you add the three huge new transmission projects recommended to deal with the SONGS closure as well as the new pipelines to supply the new gas plants replacing SONGS (CAISO). James Conca, Forbes, 10/2/14



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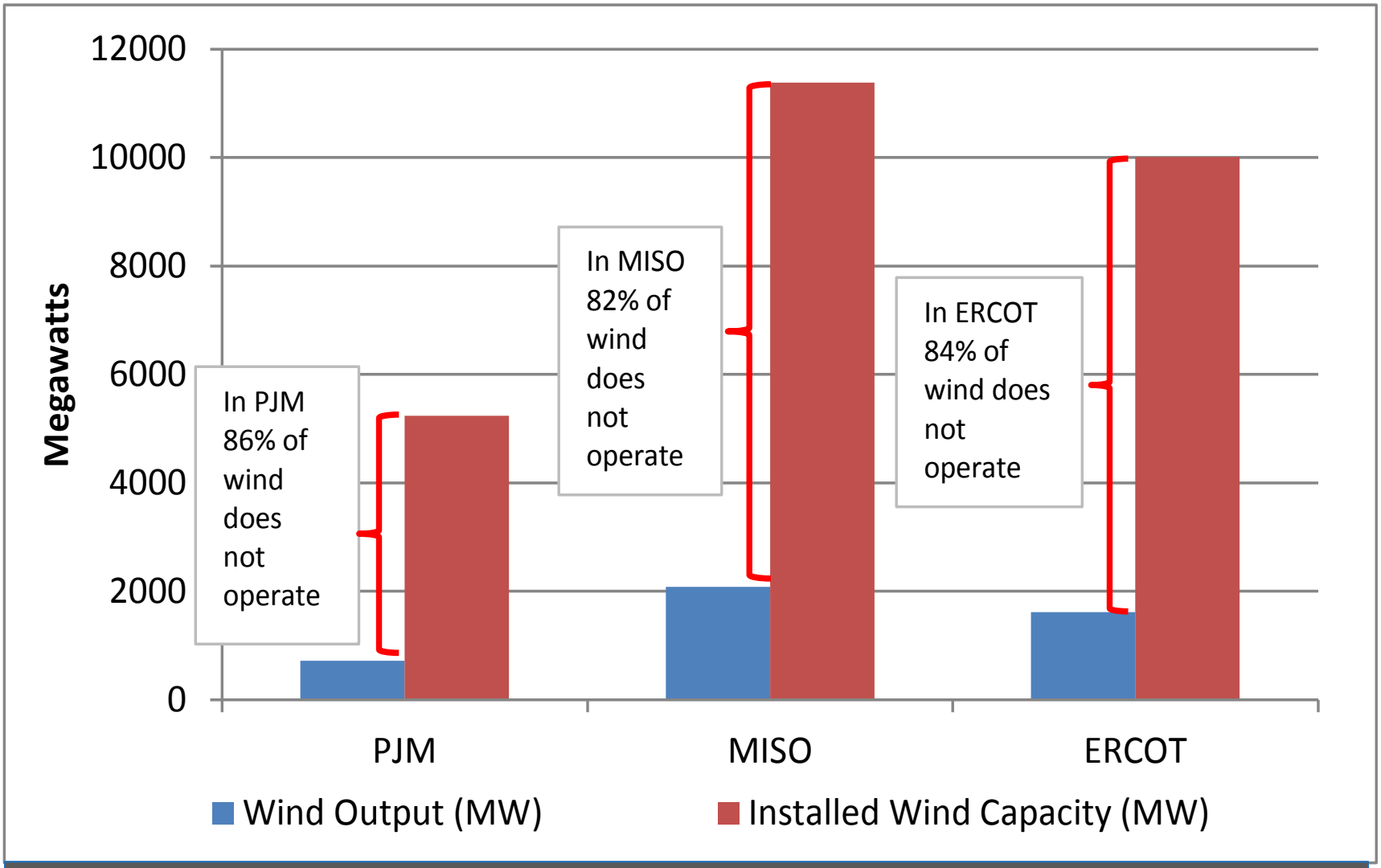
2. Nuclear Energy's Unparalleled Reliability



Median Wind Output Relative to Capacity during On-Peak Hours of the Top 10 Demand Days of 2009 - 2012.

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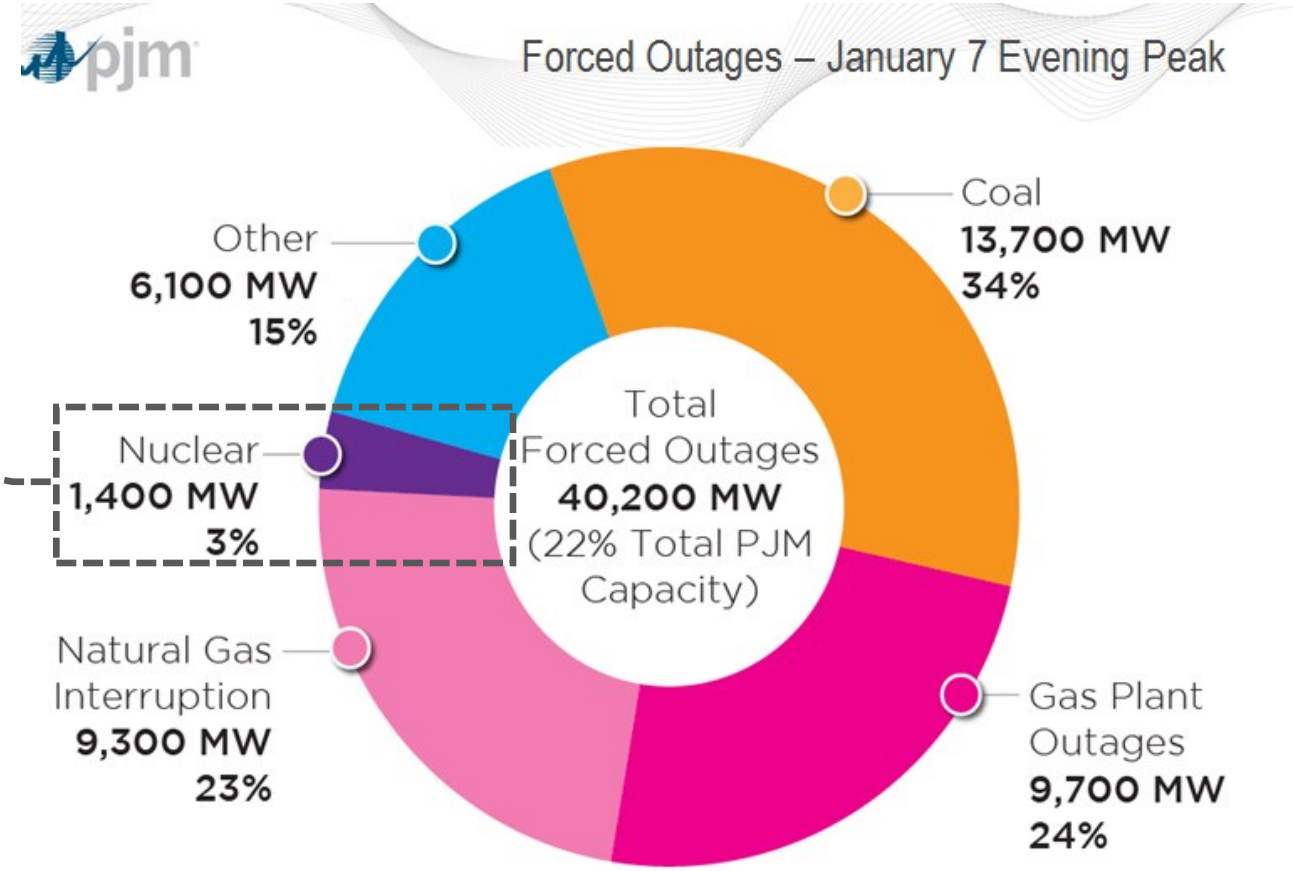
2. Nuclear Energy's Unparalleled Reliability (Cont.)

On January 7 - the height of the Polar Vortex - 40,200 MW of forced outages.

During the Polar Vortex, the nuclear fleet operated at 95% capacity (NEI). *Forbes*, *Polar Vortex - Nuclear Saves The Day*, 1/12/2014



During the Polar Vortex, coal, natural gas and oil generator outages were high due to lack of fuel and other issues. Nuclear units have consistent availability and secure fuel supply.

Sources: Terry Boston, President and CEO PJM, MACRUC 6/22/2014, Mike Kormos, FERC Technical Conference (4/1/2014), Monitoring Analytics, SOM 2014q1.

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3. The Challenge

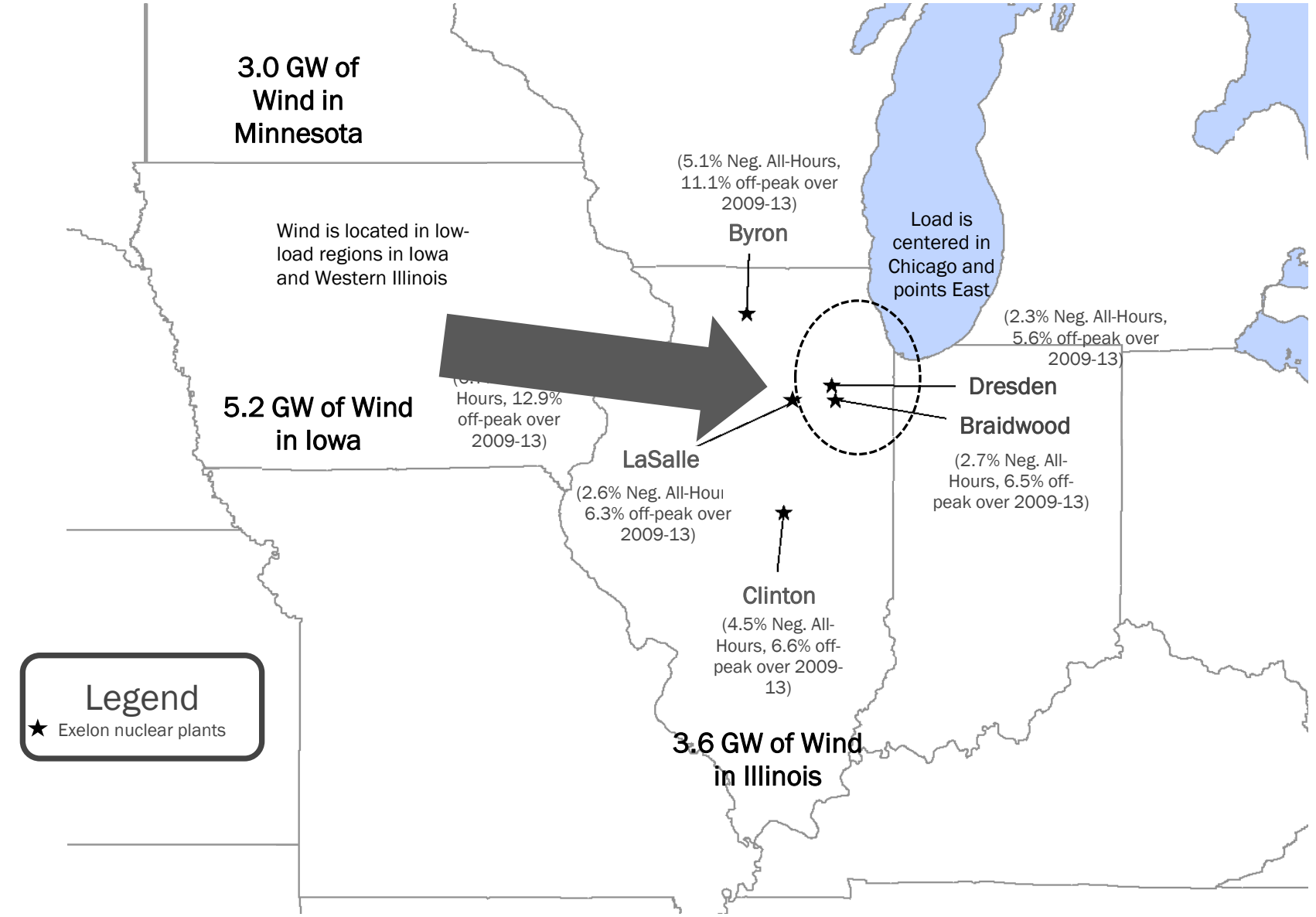
Nuclear units around the country are at risk of early retirement, jeopardizing our nation's ability to reduce carbon emissions, and increasing the likelihood of greater price volatility and costly power outages. *The challenges include*:

- **Natural gas production has increased significantly** and prices have declined dramatically. Natural gas sets the marginal price of electricity for all generating sources, suppressing electricity prices across the market.
- **Federal policies and mandates subsidizing** other clean electricity, primarily wind and solar, severely distort energy markets causing other clean generators to operate at a loss.
- **Correctable flaws in wholesale energy and capacity market rules financially penalize** nuclear energy for its carbon-free output and its unrivaled 24/7 reliability.
- **Transmission constraints and the failure to develop transmission projects** allowing certain plants to transport their electricity to the eastern markets.
- **Cost of nuclear production have increased 33%** from 2008-2012 – at the same time wholesale power prices have plunged[1]. Financial analysts project that 2015 nuclear plant production costs are higher than expected market price for electricity[2].
- **Load growth is down or flat - markets are shrinking.** Between 2008 and 2013, the base load market in Northern Illinois has declined by approximately 15%.

[1]Electric Utility Cost Group

[2] Source: UBS report, "US Electric Utilities and IPPs," Jan. 2013; All-Hours Energy Forwards for 2015 delivery as of 6/28/13; Credit Suisse, "Nuclear … The Middle Age Dilemma," Feb. 2013

3. The Challenge (Cont.)



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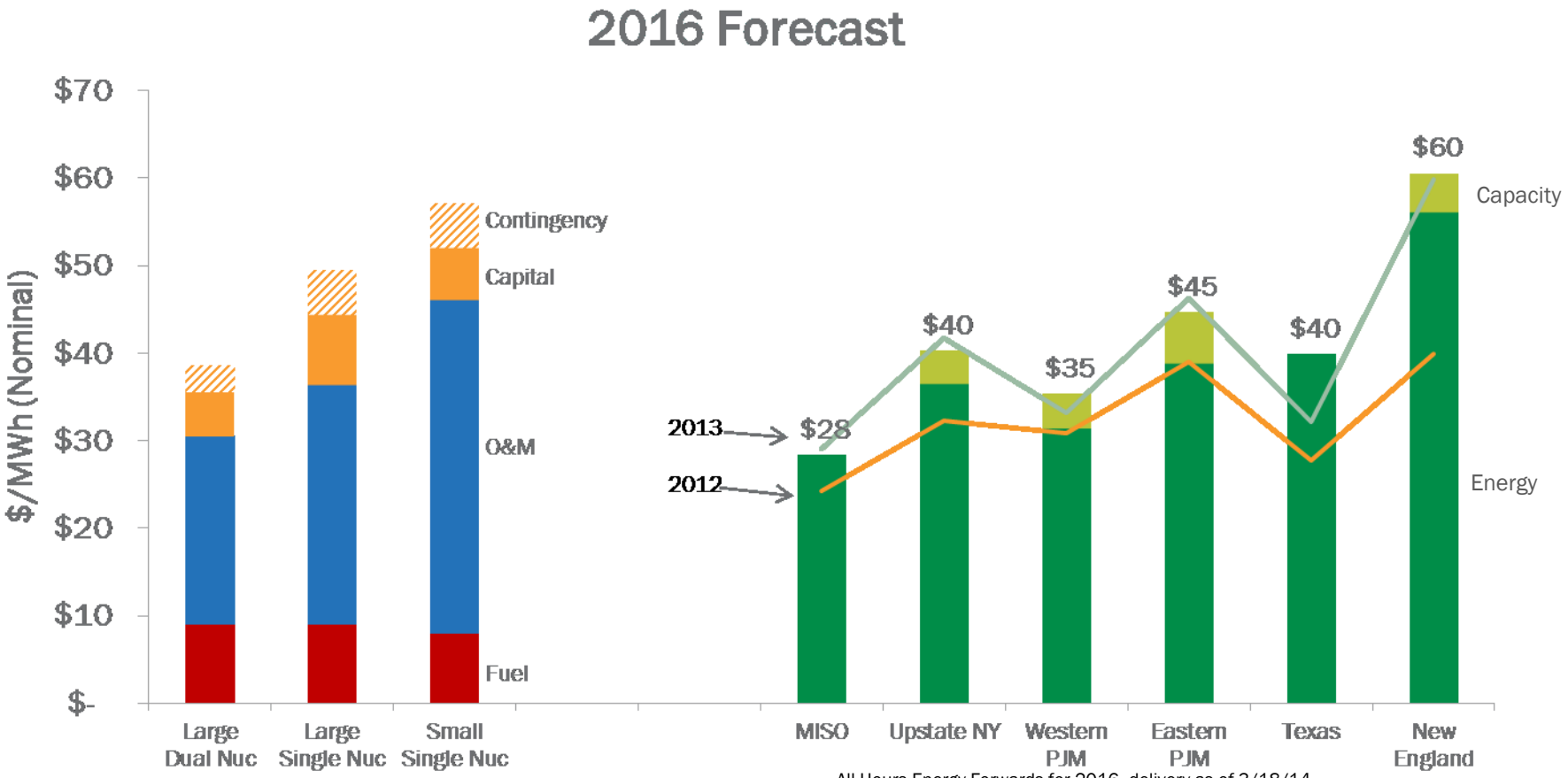
3. The Challenge (Cont.)

- A simple screen identifies nuclear plants at risk of retirement:
  - A generic cost for three categories of nuclear plant have been identified from recent Analyst reports
  - For each unregulated nuclear unit, a generic cost is compared to its relevant 2016 forward price for energy plus capacity



Source: UBS, "US Electric Utilities and IPPs" , Jan 2013
Source: Credit Suisse, "Nuclear…The Middle Age Dilemma" , Feb 2013

All-Hours Energy Forwards for 2016 delivery as of 3/18/14,
MISO basis is assumed (90% of NiHub). NY capacity forecast equals 2013 rest-of-state.

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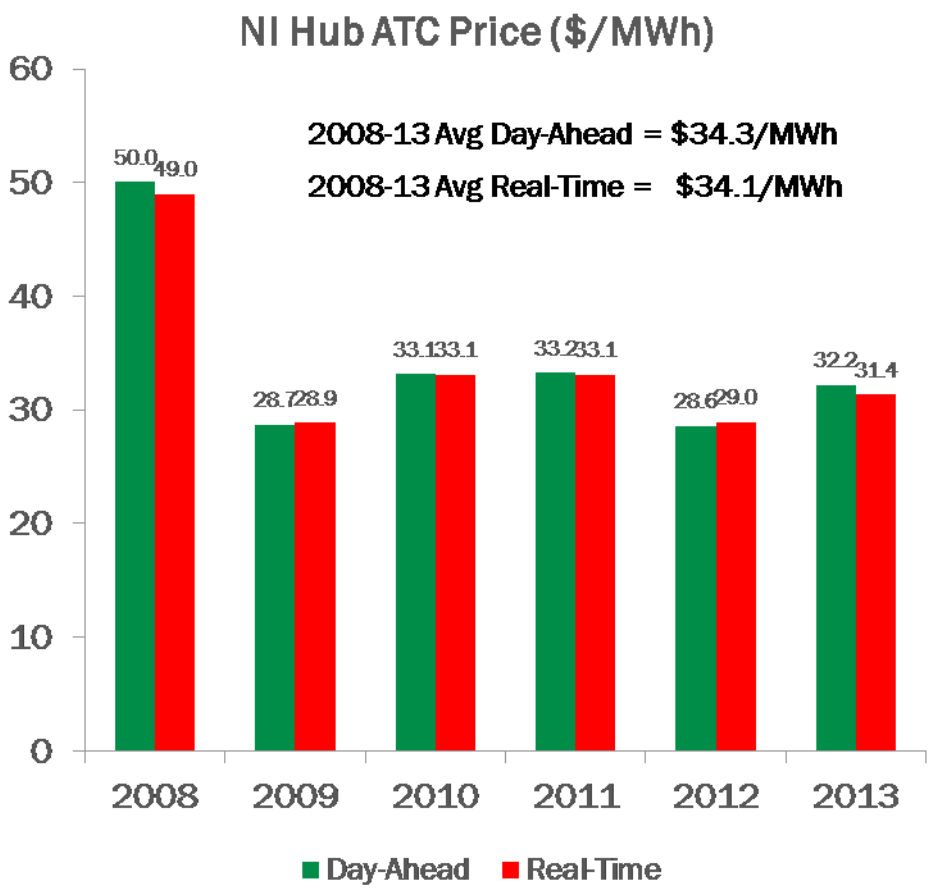
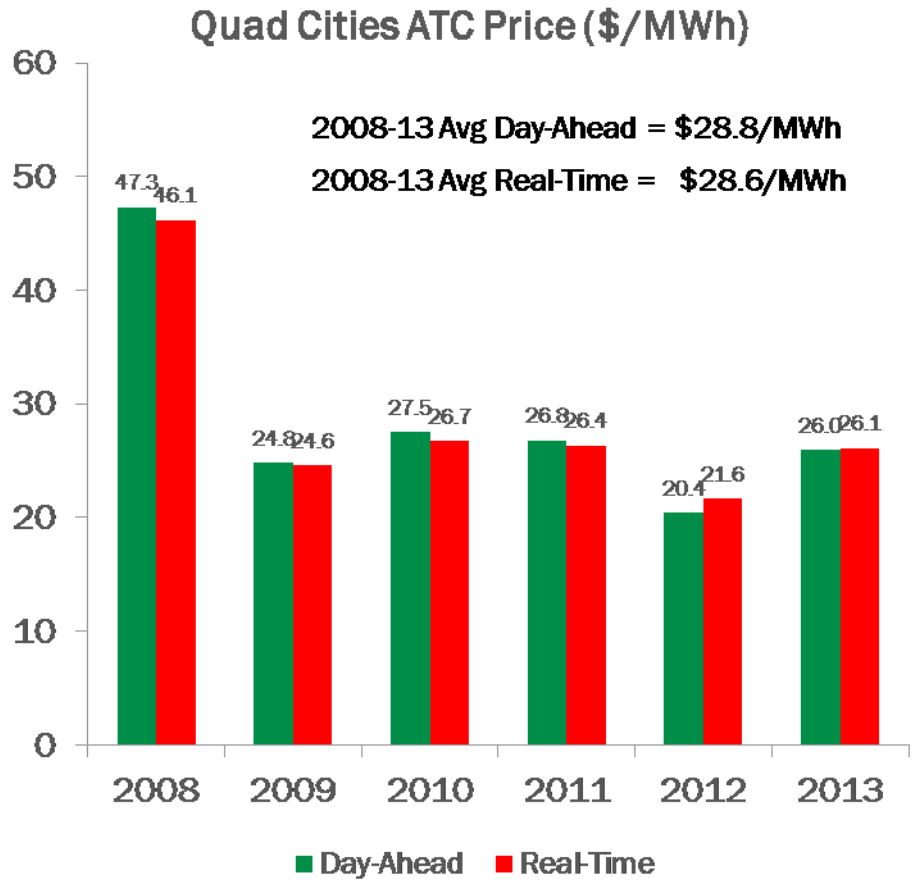
3. The Challenge (Cont.)

Over the past six years, day-ahead prices at NI Hub and Quad Cities have averaged about the same as real-time prices:





The day-ahead market tracks the real-time market because there are financial linkages between the two (referred to as "virtual bidding") that ensure the on-average, over-time prices in both markets will converge to a similar average .

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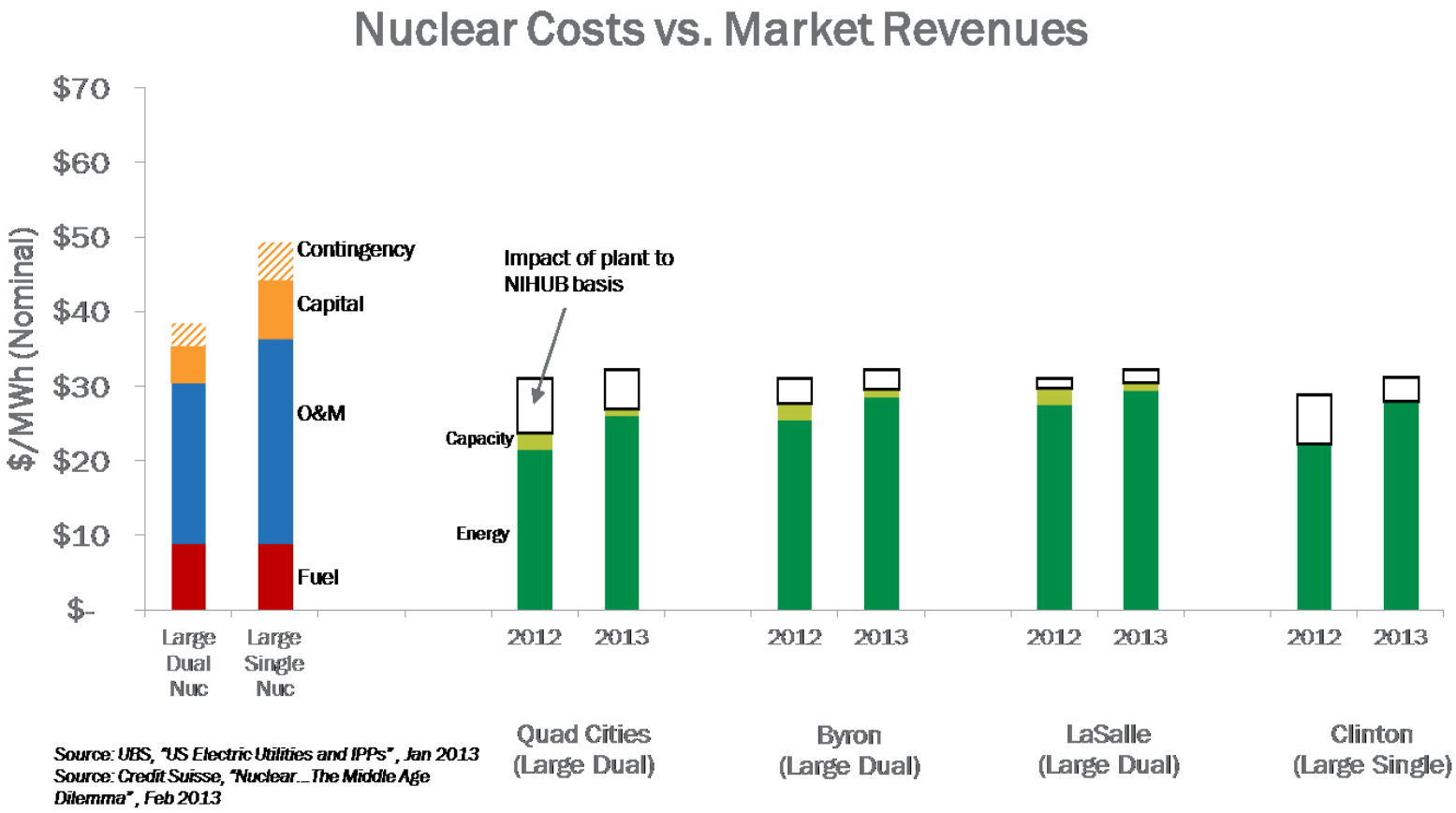
3. The Challenge (Cont.)

- Even highly efficient large dual unit nuclear plants have operating costs in the mid $30s per MWh
- All-In market prices for Exelon's Illinois nuclear fleet have ranged between $25 and $30 per MWh in recent years, below operating costs for most units. Wind-driven price suppression plays a significant role in these challenged economics



"Price suppression leads to premature and uneconomic retirements and the failure to make economic investments. The MMU estimates that the actual net revenue results for 2013 mean that 14,597 MW of capacity in PJM are at risk of retirement in addition to the 24,933 MW that are currently planning to retire." - *2013 State of the Market Report for PJM at p1*

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4. Illinois Nuclear Fleet Benefits

- Exelon's Illinois nuclear plants are economic engines that …
  - Employ **5,900** full-time workers from **43 Illinois counties** with an annual payroll of **$550 million**
  - Employ another **1,300** workers during planned maintenance with a total annual payroll greater than **$200 million**
  - Spend **$441.7 million** annually on direct purchases from **3,217** local and state businesses
  - Create more than **20,000** ancillary jobs in other Illinois business sectors through payroll spending, purchases and contracting activity
  - Paid more than **$129 million** in local property taxes in 2013 to fund school districts and other community spending priorities
  - Paid more than **$26 million** in Illinois payroll taxes and **$22 million** in direct payments to the Illinois Emergency Management Agency in 2013
  - Are estimated to create **$9 billion** in total economic output annually
  - Generate **48%** of Illinois' electricity and over **90%** of the zero-carbon electricity

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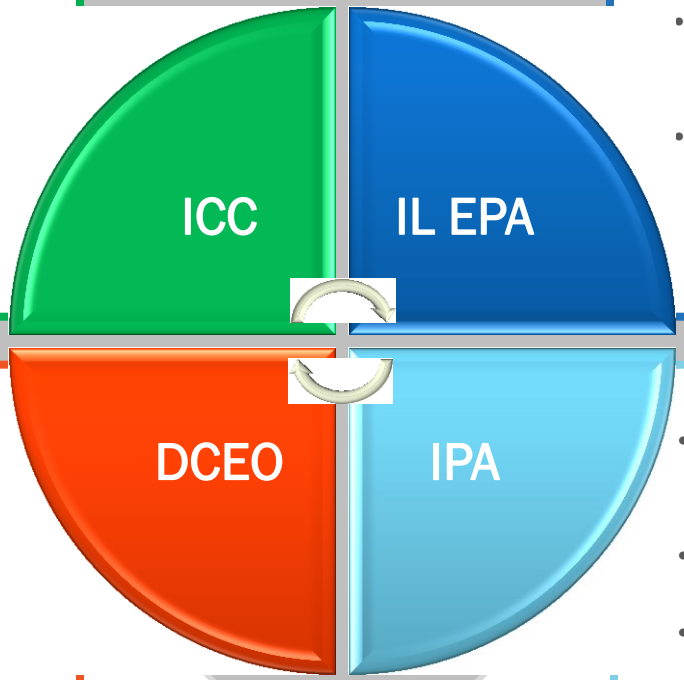
4. Illinois Nuclear Fleet Benefits (Cont.)

Findings of the reports will be presented to the General Assembly and the Governor Between November 15th and early January

ENERGY VALUE
- Impact of nuclear retirements on consumers
- Ability to expand transmission to export clean power

ENVIRONMENTAL BENEFIT
- Impact of nuclear retirements on carbon emissions and IL compliance with 111(d)
- Cost to society of increased carbon based on Administration's societal cost of carbon rate



ECONOMIC IMPACT
- Impact of nuclear retirements on jobs and economic value to local municipalities and the State

RELIABILITY
- Impact of nuclear retirements on reliability in IL, PJM and Eastern Interconnection
- Highlight concerns of IHS Study, PJM, MISO, NERC and FERC
- Qualitative review to highlight the significant actions needed to replace the value of firm fuel/high availability capacity & fuel diversity

HR 1145 – Illinois Agency Reports Should Show That Closing a Nuclear Plant Will Hurt Customers

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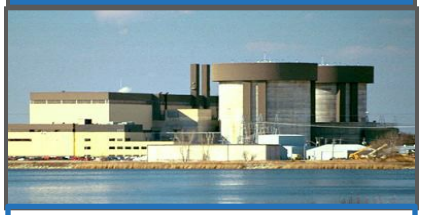
4. Illinois Nuclear Unit Benefits (Cont.)

Braidwood Generating Station



- Braceville, Illinois
- Number of Units: 2 operating units
- Began Providing Power: 1988
- Remaining Useful Life: 32-33 years (2046/2047)
- Net MW: 2,346 MW
- Customers Served: More than 2.0 million homes
- Total Employees: 838
- Non-Management Employees: 452
- Annual Payroll: Approximately $130M
- Property Taxes: Approximately $24.7M
- Annual Contractor and Outage Contractor Spend: $92M

Byron Generating Station

- Byron, Illinois
- Number of Units: 2 operating units
- Began Providing Power: 1985
- Remaining Useful Life: 30-32 years (2044/2046)
- Net MW: 2,346 MW
- Customers Served: More than 2.0 million homes
- Total Employees: 894
- Non-Management Employees: 431
- Annual Payroll: Approximately $130M
- Property Taxes: Approximately $33M
- Annual Contractor and Outage Contractor Spend: $97M

Clinton Power Station

- Clinton, Illinois
- Number of Units: 1 operating unit
- Began Providing Power: 1987
- Remaining Useful Life: 32 years (2046)
- Net MW: 1,078 MW
- Customers Served: More than 1.0 million homes
- Total Employees: 717
- Non-Management Employees: 369
- Annual Payroll: Approximately $100M
- Property Taxes: Approximately $14M
- Annual Contractor and Outage Contractor Spend: $42M

Dresden Generating Station

- Morris, Illinois
- Number of Units: 2 operating units
- Began Providing Power: 1960
- Remaining Useful Life: 15-17 years (2029/2031)
- Net MW: 1,750 MW
- Customers Served: More than 1.5 million homes
- Total Employees:906
- Non-Management Employees: 465
- Annual Payroll: Approximately $130M
- Property Taxes: Approximately $27M
- Annual Contractor and Outage Contractor Spend: $48M

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4. Illinois Nuclear Unit Benefits (Cont.)

LaSalle Generating Station

- Marseilles, Illinois
- Number of Units: 2 operating units
- Began Providing Power: 1984
- Remaining Useful Life: 28-29 years (2042/2043)
- Net MW: 2,313 MW
- Customers Served: More than 2.3M homes
- Total Employees: 897
- Non-Management Employees: 469
- Annual Payroll: Approximately $120M
- Property Taxes Approximately: $24M
- Annual Contractor and Outage Contractor Spend: $55M

Quad Cities Generating Station

- Cordova, Illinois
- Number of Units: 2 operating units
- Began Providing Power: 1973
- Remaining Useful Life: 18 years (2032)
- Net MW: 1,819 MW
- Customers Served: More than 1.2M homes
- Total Employees: 918
- Non-Management Employees: 480
- Annual Payroll: Approximately $130M
- Property Taxes: Approximately $7M
- Annual Contractor and Outage Contractor Spend: $53M

** Exelon Generation Company, LLC paid an additional $32.7M in Payroll and Sales & Use Tax

** Exelon Corporation & Subsidiaries paid a total of **over $1B in** Income, Franchise, Payroll, Property, Sales & Use, and Utility Taxes in the State of Illinois

Back office operations – Warrenville, Illinois.

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