

Exelon Generation

Nuclear Power in the 21st Century

Panel on Future of Nuclear

**Great Lakes Symposium on Smart Grid
and the New Energy Economy**

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Exelon Nuclear Partners**

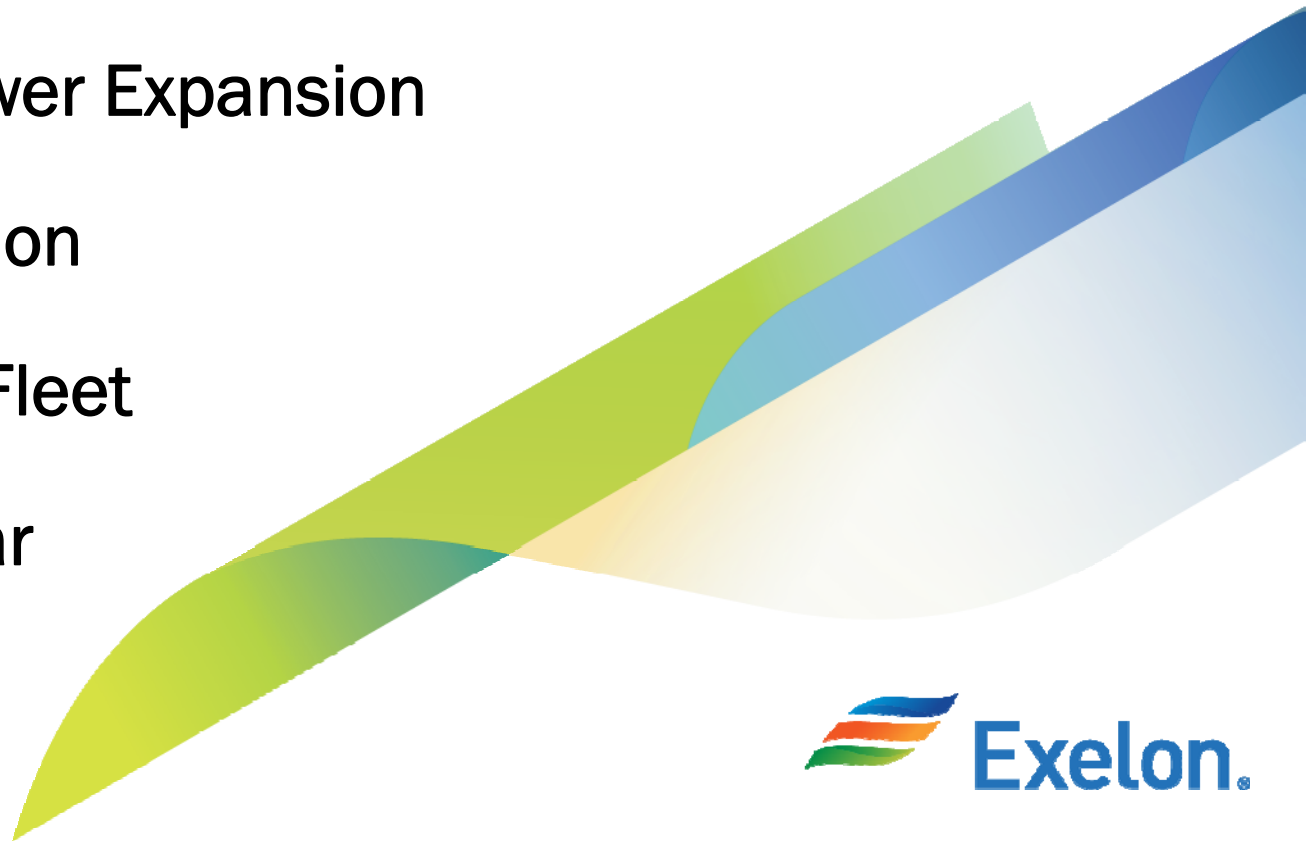
September 26, 2012



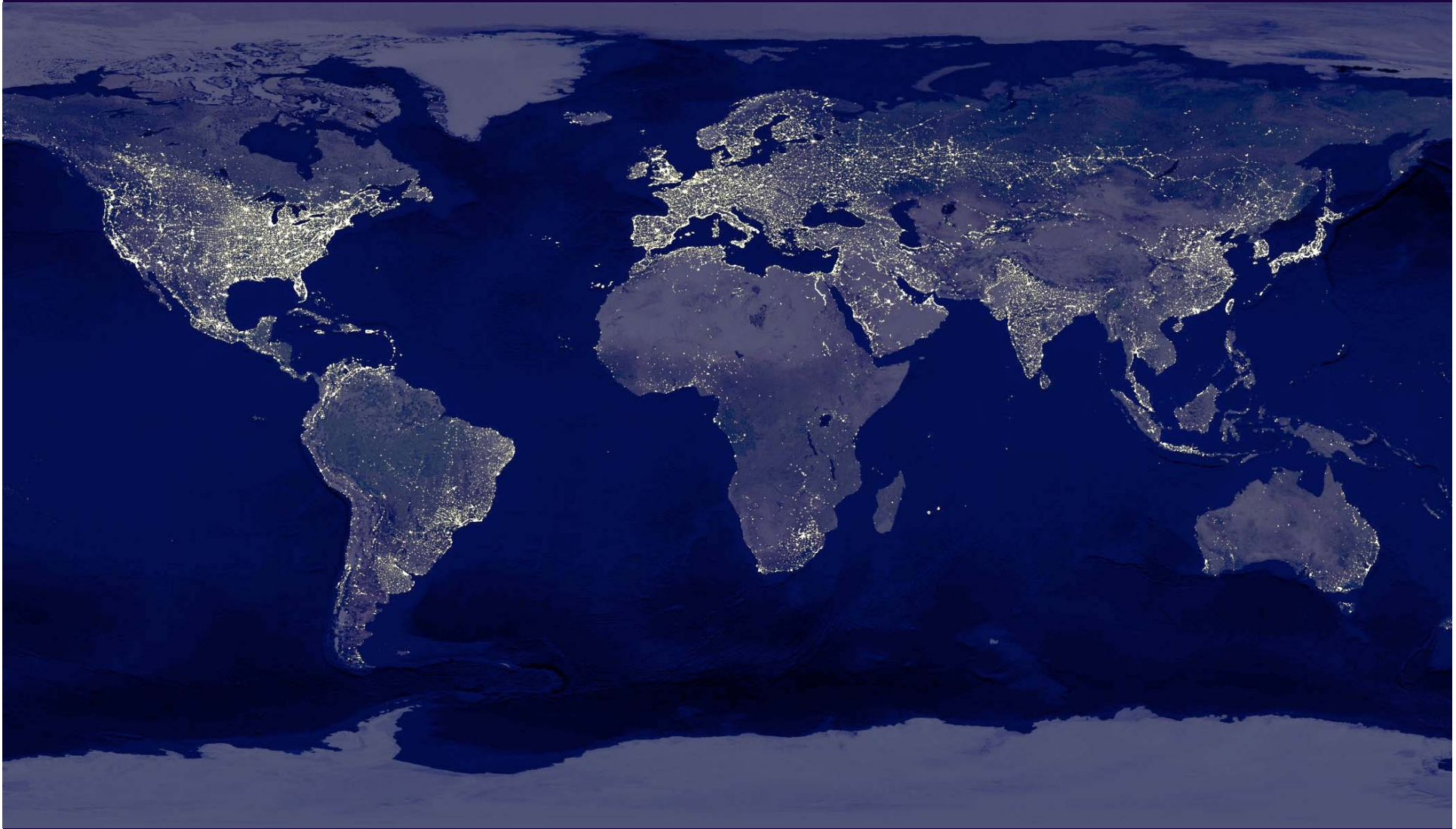
Nuclear Power in the 21st Century

Overview

- Global Nuclear Power Expansion
- U.S. Nuclear Power Expansion
- Exelon Corporation
- Exelon Nuclear Fleet
- Future of Nuclear



How Will our Future Energy Demands be Met?



Today: 15 terawatts (TW) → Future: 30 TW (2030) to 50 TW (2100)

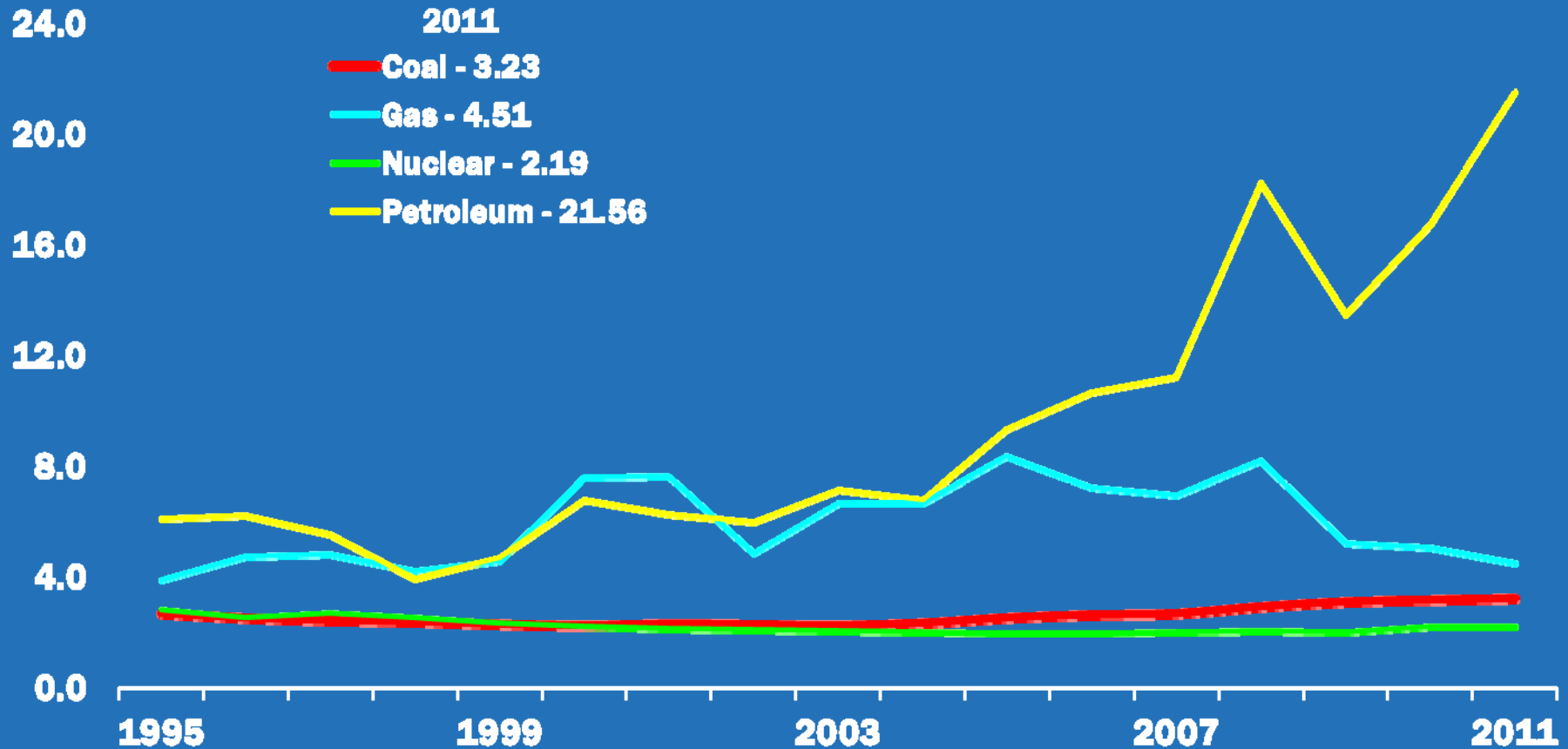
Global Nuclear Energy Development

- 63 new reactors under construction
- 156 new nuclear plants on order or planned

- Countries with operating commercial reactors
- Emerging nuclear countries with planned reactors
- Emerging nuclear countries with proposed reactors

U.S. Electricity Production Costs

1995-2011, In 2011 cents per kilowatt-hour



Production Costs = Operations and Maintenance Costs + Fuel Costs. Production costs do not include indirect costs and are based on FERC Form 1 filings submitted by regulated utilities. Production costs are modeled for utilities that are not regulated.

Source: Ventyx Velocity Suite

Updated: 5/12

New U.S. Nuclear Construction

- Five reactors are under construction in the United States today
 - Approximately 5 GW capacity
 - Two reactors in Georgia
 - Two reactors in South Carolina
 - One reactor in Tennessee
- Applications for sixteen additional reactors currently under review by the U.S. Nuclear Regulatory Commission
- Exelon not currently involved in new nuclear construction

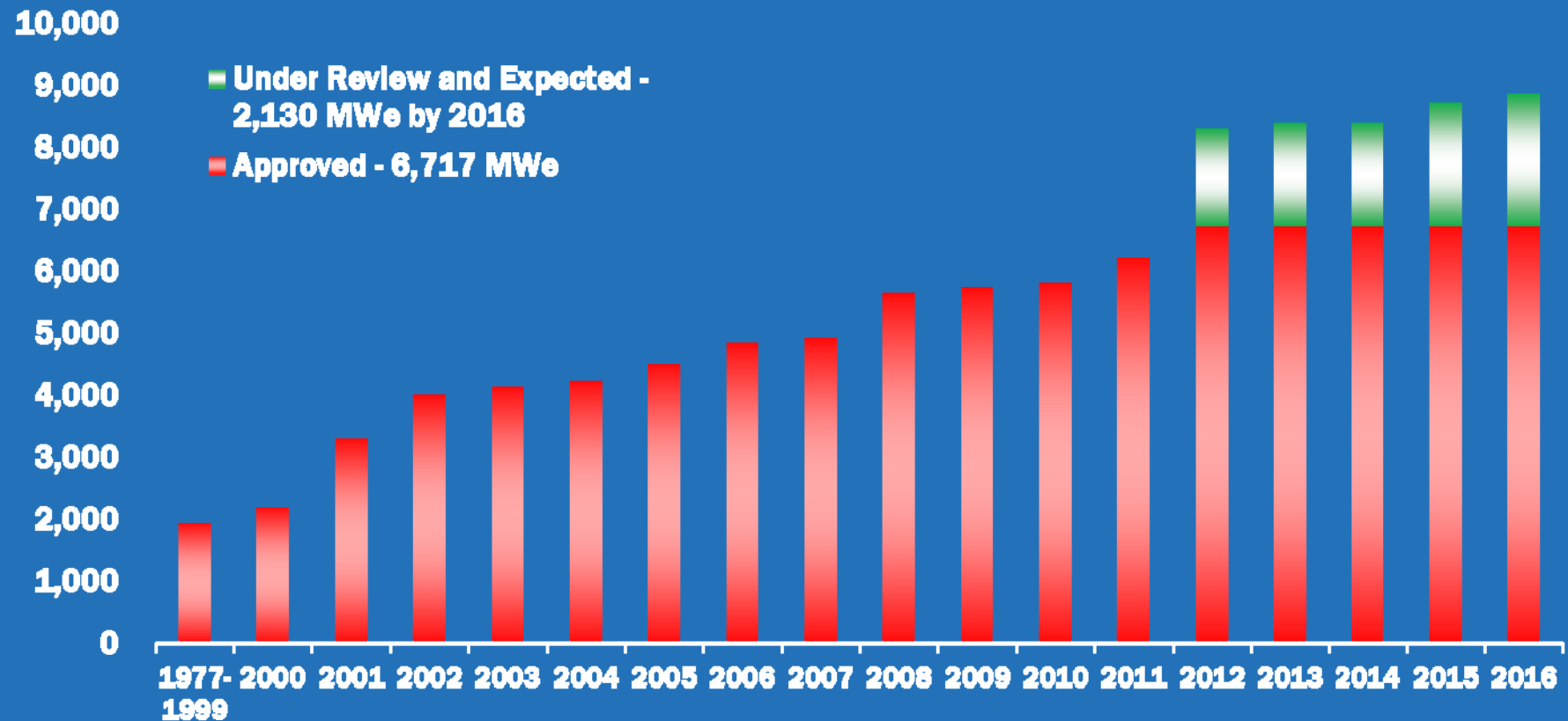
Upgraded Capacity of Existing U.S. Reactors

Capacity of U.S. nuclear fleet being expanded

- Upgrading and replacing equipment
- Improving instrument and control systems
- Taking advantage of design margins

Approximately 9 GW additional capacity by 2016

Cumulative Capacity Additions at U.S. Nuclear Facilities 1977-2016



Source: Nuclear Regulatory Commission

Updated: 8/12



Life of Existing Reactors being Extended

- Original licensed reactor life was set at 40 years
- Active components (pumps, valves, breakers, etc.) maintained, refurbished or replaced in real time
- Passive components (structures, vessels, pipes, cables, etc.) confirmed viable for another 20 years
- 75 percent of current fleet (104 reactors with over 101 GW capacity) already extended 20 years – remainder under review or being submitted

Exelon: Who We Are Today



Generation

Nation's no. 1 competitive power generator
Approx. 35,000 MW of owned capacity
Largest U.S. nuclear fleet

Competitive Energy Sales

Retail and wholesale sales
More than 100,000 business and public sector customers
More than 1 million residential customers

Transmission and Delivery

Three utilities delivering electricity and natural gas to more than 6.6 million customers

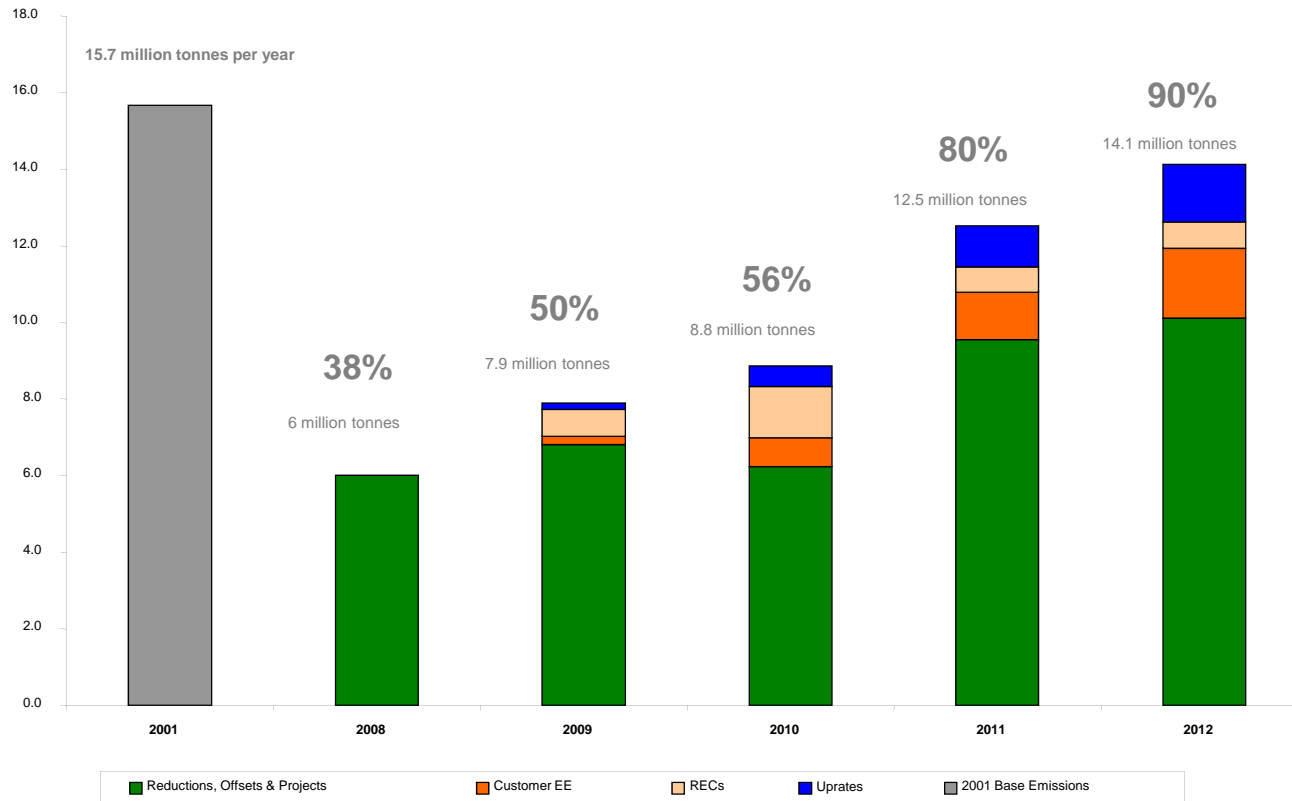
Exelon: Leading to a Clean Energy Future

Industry's Cleanest Power Generation Portfolio

- Over 90% clean energy sources
 - >50 % nuclear
 - >25% natural gas and
 - Approximately 10% other clean generation (solar, wind, hydro, etc.)

Exelon 2020: Eliminating Our Carbon Footprint

- Industry-leading strategy launched in 2008
- Goal: To eliminate our carbon footprint – 15.7 million metric tons of greenhouse gas emissions – annually by 2020
- Achieved 80% of goal in 2011



Exelon's Nuclear Performance History

1997 – Commonwealth Edison

- Most troubled nuclear program in U.S.
- Several units shut down with regulatory, equipment concerns
- 1997 Capacity factor was 49%

1998-2000 – Significant Performance Improvement

- Achieved U.S. top quartile performance in capacity factor, refueling outage duration, production cost

2000 – Merger with PECO to form Exelon

- Creation of nation's largest nuclear fleet
- Development of Exelon Nuclear Management Model

2000 through 2011

- Sustained performance Improvement
- Continuous refinement of Exelon Nuclear Management Model
- 2011 Capacity factor was 93.4%

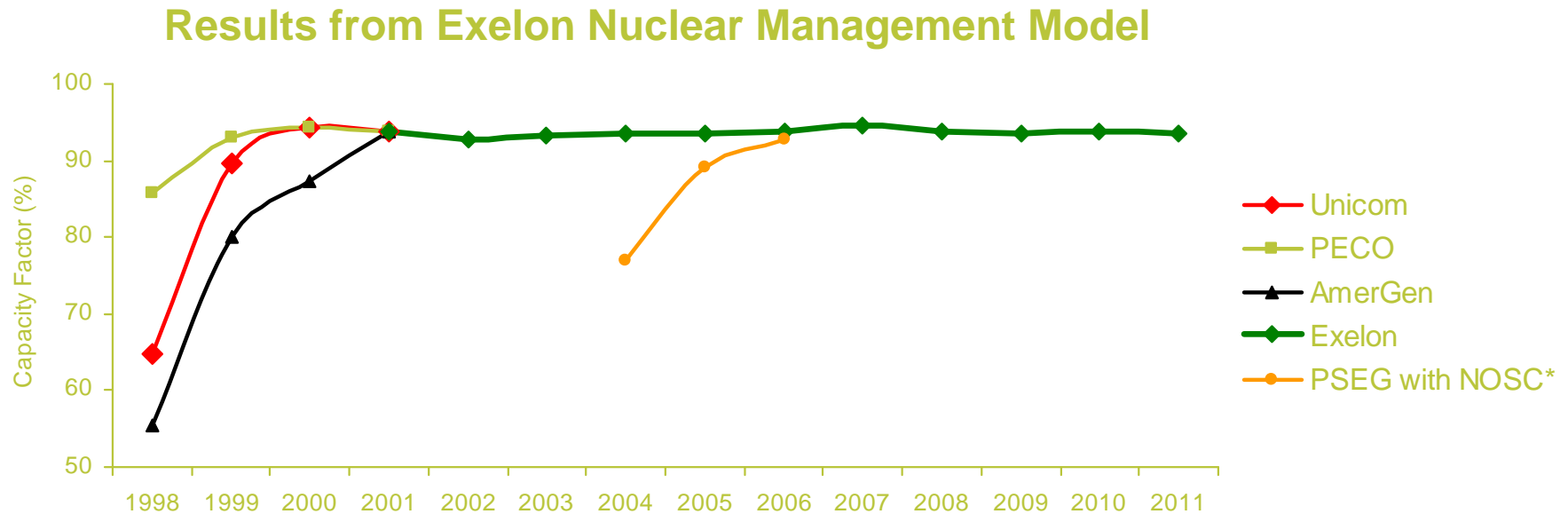
2012

- Merger with Constellation – Five additional nuclear units
- Operating Services Agreement to operate Fort Calhoun Station

Exelon nuclear fleet

- Full or partial ownership of 24 nuclear units and operate 18 reactors at 11 sites, including recent agreement to operate Fort Calhoun Station

Track Record of Nuclear Excellence



Exelon has implemented its Nuclear Management Model with sustained excellent results

- Capacity factor is consistently high and cost is consistently low
- Increased generation due to improved performance

The Exelon Nuclear Management Model works

* Nuclear Operating Services Contract

Exelon's Nuclear Fleet Strategy

Exelon Nuclear Management Model

- Common Vision and Shared Values
- Definition and standardization of Policies, Programs and Processes
- Manage Fleet as single cohesive entity
- Economies of scale in resource sharing, contracting, supplier consolidation, materials management
- Passion for Performance & Stretch Goals

Model Defines How Exelon:

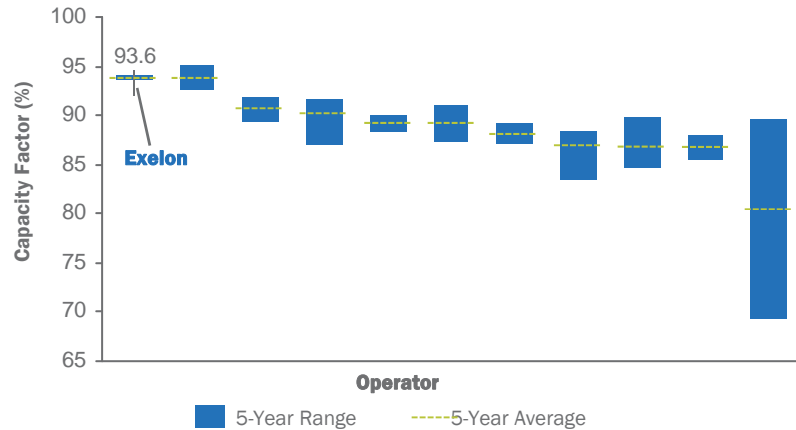
- Conducts business
- Set Priorities
- Develops and Executes Plans
- Defines and Implements Programs and Procedures
- Monitors and Assesses Performance

The Model is Exelon's Nuclear "Play Book"

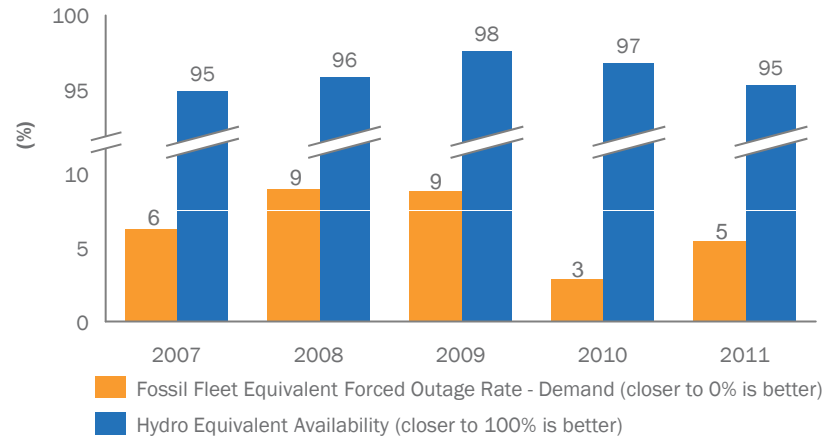
- It is copyrighted - The Model is Exelon's competitive advantage

Operational Excellence

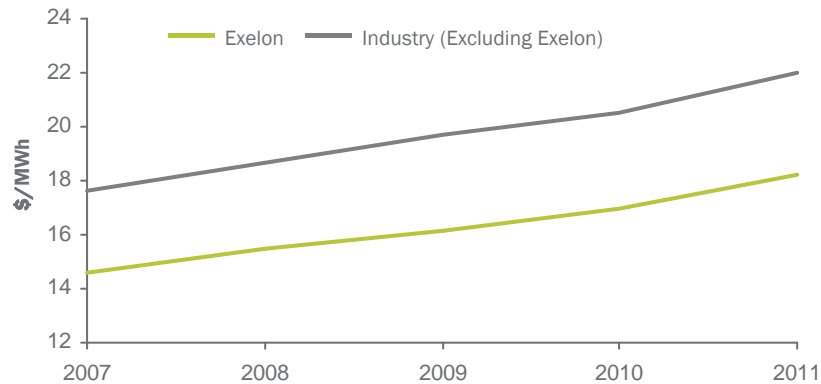
Range of Nuclear Fleet 2-Yr Avg Capacity Factor (2007-2011)⁽¹⁾



Fossil and Hydro Fleet Availability⁽²⁾



Nuclear 2-Yr Production Cost (\$/MWh)⁽³⁾



Industry Leading Refueling Outage Duration⁽⁴⁾



(1) Source: Platts Nuclear News, Nuclear Energy Institute and Energy Information Administration (Department of Energy). Exelon metrics exclude CENG & Salem.
 (2) Excludes legacy Constellation asset performance.
 (3) Source: 2011 Electric Utility Cost Group (EUCG) survey. Includes Fuel Cost plus Direct O&M divided by net generation. Exelon metrics exclude CENG & Salem.
 (4) Exelon data excludes Salem & CENG. Exelon's 2009 average includes 23 days of TMI outage that extended into 2010 for a steam generator replacement.

Exelon Nuclear Uprate and Life Extension

Life of all Exelon reactors being extended

- Original licensed life expired between 2009 and 2029
- Extended licensed life to 2029 to 2049
- Adds 20 years of over 24 GW of nuclear capacity

Exelon has aggressively pursued power uprates

- 297 MW increased power from uprates to date
- Additional 145 MW planned through 2013

Factors Driving the Future of Nuclear

- Safety
- Energy Security
- Environmental Factors
- Cost Considerations
- Spent Fuel Management

Key Enablers for Nuclear Expansion

- Continued Safe Operation
- Predictable Positive Cost Structure
- Stable Regulatory Environment
- Manufacturing and Educational Support
- Spent Fuel Management Solutions
- Public Acceptance
- Availability of Capital

What is the Future of Nuclear?

Near Term

- Continue power uprates and plant life extensions
- Complete ongoing construction
- Complete issuance of new combined operating licenses for new reactors

Longer Term

- Resolve spent fuel long term storage
- Develop and license small modular reactors
- Develop and license next generation reactors