Challenges for Transitioning the U.S. Electric Utility Industry to a Low-Carbon Generation Path

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PSEG’s Direction

“Our vision is to be increasingly recognized as a leader for people providing safe, reliable, economic and green energy”

PSEG CEO Ralph Izzo
Age of U.S. Coal Plants

![Bar chart showing the percent of total capacity for different age cohorts of coal plants.]

- **0-10 Years**: 20%
- **11-20 Years**: 15%
- **21-30 Years**: 25%
- **31-40 Years**: 40%
- **41-50 Years**: 18%
- **51-60 Years**: 10%
- **Over 60 Years**: 0%
Fuel Used for Transportation

93% is petroleum based

Source: DOE
Challenges

- Magnitude
- Complexity
- Human
U.S. Carbon Emissions

Sources of Greenhouse Gas Emissions – All Sources

- Electricity Generation: 33%
- Transportation: 26%
- Industry: 20%
- Agriculture: 8%
- Commercial: 6%
- Residential: 5%
- Other: 2%

Source: DOE

Sources of Greenhouse Gas Emissions – Transportation Sector

- Cars and Light Trucks: 63%
- Medium/Heavy Trucks: 20%
- Aircraft: 7%
- Rail: 3%
- Ships: 2%
- Other: 4%
- Buses: 1%

Source: US EPA
Complexity of the Challenge

- Supply and demand side solutions
- Technological breakthroughs
- Intermittent supply
- Distributed supply
- Carbon capture
- Transmission and distribution efficiency
- Other environmental issues
- Smart grid
The Human Element

Two sides of the human coin

- General public support
- Political courage
Public Priorities

Public Top Priorities for 2010

- Economy: 83
- Jobs: 81
- Terrorism: 80
- Social Security: 66
- Education: 65
- Medicare: 63
- Deficit Reduction: 60
- Health Care: 57
- Helping the poor: 53
- Military: 49
- Energy: 49
- Health Ins.: 49
- Crime: 49
- Moral Decline: 45
- Finance: 45
- Environment: 44
- Tax cuts: 42
- Immigration: 40
- Lobbyists: 36
- Trade Policy: 32
- Global Warming: 28

Source: Pew Research, January 2010
Path to Success

Build the bridge

- Implement environmental regulations
- Scale up EE/clean energy investments
- Build public support
Long Term

- Investment opportunities
- More than good engineering and financial incentives
Cross the bridge together