We have multiple challenges facing our region

- Shift to natural gas for heating and power generation without additions to gas infrastructure
- Imminent retirement of generation capacity
- Aggressive carbon reduction goals coupled with increasing intermittent generation
Significant Increase in Natural Gas Generation

Annual Energy Output

Generating Capability

- Oil: 5273 MW
- Coal: 2300 MW
- Nat Gas: 17,850 MW
- Nuclear: 4656 MW
- Hydro: 3335 MW
- Renewable: 1079 MW
Future Outlook Shows Increasing Reliance on Natural Gas

Upcoming Retirements

Announced (4,100 MW)
- Salem Harbor Station (749 MW)
  - 4 units (coal & oil)
- Norwalk Harbor Station (342 MW)
  - 3 units (oil)
- Brayton Point Station (1,535 MW)
  - 4 units (coal & oil)
- Vermont Yankee Station (604 MW)
  - 1 unit (nuclear)

Potential
- Up to 8,000 MW at risk of retirement

New Generation Projection

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass/Wood Waste</td>
<td>138</td>
</tr>
<tr>
<td>Hydro</td>
<td>62</td>
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<tr>
<td>Landfill Gas</td>
<td>0</td>
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<tr>
<td><strong>Natural Gas</strong></td>
<td><strong>1,847</strong></td>
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<tr>
<td><strong>Natural Gas/Oil</strong></td>
<td><strong>2,497</strong></td>
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<tr>
<td>Oil</td>
<td>245</td>
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<tr>
<td>Solar</td>
<td>16</td>
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<tr>
<td><strong>Wind</strong></td>
<td><strong>2,110</strong></td>
</tr>
<tr>
<td>Total</td>
<td>6,915</td>
</tr>
</tbody>
</table>
Energy Prices Are Escalating

- All of these challenges are pressuring customers’ energy bills

- Gas pipeline constraints have added over $3 billion to our electric bills this winter

Winter Season Wholesale Electricity Costs
December – March
($Billions, ISO-NE Region)
Infrastructure Deficiency Driving Retail Rates Higher

- Price increases despite abundant nearby natural gas and hydro
- Liquidity reduced due to suppliers leaving New England market
- Failed auctions for retail supply, moving to Day Ahead markets in MA for C&I
- Energy rates set to double over next few years

Residential Rates 2008 - 2018 (¢/kwhr)

* - 2018 prices are an estimate using actual price for generation capacity and current market rates for energy
• We are working with NESCOE to promote the development of:
  • Electric transmission to achieve greenhouse emission goals
  • Natural gas infrastructure to address power market disruptions
  • We support the use of an ISO tariff to expedite construction of electric and gas infrastructure
    • Precedent exists to lean on our regulated utilities to address energy policy objectives
    • Electric Distribution Companies proposal to NESCOE for EDC’s to contract for gas transportation capacity
Electric Distribution Company (EDC) Model

**Gas Pipeline**
Builds, owns and operates pipelines

**Power Generators and Secondary Market**

**Electric Dist. Cos (EDC)**
Enter into Capacity Contracts and Manage Capacity Manager

**Capacity Manager**
Administers capacity releases to generators or the market

**Capacity Release**

**Capacity Contract**
Invoice net of Release Payments

**Invoices**

**ISO-NE**

**FERC Tariff**

**NE Retail Electric Customers**

**Asset Manager Agreement**

**Tariff Payments**

**Cost Allocation**

**Electric Distribution Company (EDC) Model**

**Builds, owns and operates pipelines**

**Enter into Capacity Contracts and Manage Capacity Manager**

**Administers capacity releases to generators or the market**

**Invoices**

**ISO-NE**

**FERC Tariff**

**NE Retail Electric Customers**

**Builds, owns and operates pipelines**

**Enter into Capacity Contracts and Manage Capacity Manager**

**Administers capacity releases to generators or the market**

**Invoices**