Planning for the impact of an Aging Workforce

Presentation to: NE Gas Association
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Agenda

- Workforce Trends in Engineering
- National Grid’s Outlook
- Strategic Workforce Planning
  - What WFP tells us
  - What are the remedies
- Q&A
Gas Distribution

- Gas networks in upstate New York, New York City, Long Island, Massachusetts, New Hampshire and Rhode Island
- Deliver gas to 3.5 million consumers
- Nearly 36,000 miles of main and distribution pipe
- 498 miles of transmission main
- 2,575,743 service lines
- 1,800 meter and regulator stations
Workforce Trends in Engineering

- Job Growth Outlooks from 2010-2020 (www.bls.gov)
  - All disciplines – 11%
  - Electrical Engineers - 7%
  - Civil Engineers - 19%
  - Mechanical Engineers - 9%
  - Industrial – 6%
# Capital Investment Plan

## National Grid Direct Capex

**FY2013 Forecast & Budget; FY2014 - FY2018 Plan**

<table>
<thead>
<tr>
<th></th>
<th>FY10 Actual</th>
<th>FY13 Budget</th>
<th>FY14 Budget</th>
<th>% Change FY13-14</th>
<th>FY15 Plan</th>
<th>FY16 Plan</th>
<th>FY17 Plan</th>
<th>FY18 Plan</th>
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</thead>
<tbody>
<tr>
<td><strong>New York</strong></td>
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<tr>
<td>Gas - NYC</td>
<td>177</td>
<td>262</td>
<td>316</td>
<td>20.9%</td>
<td>208</td>
<td>353</td>
<td>354</td>
<td>360</td>
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<tr>
<td>Gas - LI</td>
<td>135</td>
<td>158</td>
<td>213</td>
<td>35.1%</td>
<td>191</td>
<td>235</td>
<td>238</td>
<td>223</td>
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<tr>
<td>Gas - NiMo</td>
<td>78</td>
<td>72</td>
<td>89</td>
<td>23.0%</td>
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<td>102</td>
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<td>103</td>
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<tr>
<td><strong>Total New York</strong></td>
<td>390</td>
<td>492</td>
<td>618</td>
<td>25.7%</td>
<td>573</td>
<td>690</td>
<td>697</td>
<td>686</td>
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<td><strong>Massachusetts</strong></td>
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<tr>
<td>Gas - Boston/Essex</td>
<td>215</td>
<td>244</td>
<td>275</td>
<td>12.8%</td>
<td>303</td>
<td>325</td>
<td>289</td>
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<tr>
<td>Gas - Colonial</td>
<td>-</td>
<td>57</td>
<td>68</td>
<td>18.9%</td>
<td>61</td>
<td>71</td>
<td>64</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total Massachusetts</strong></td>
<td>215</td>
<td>301</td>
<td>343</td>
<td>13.9%</td>
<td>364</td>
<td>396</td>
<td>352</td>
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<tr>
<td><strong>Rhode Island</strong></td>
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<td>87</td>
<td>90</td>
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<tr>
<td><strong>Total Rhode Island</strong></td>
<td>54</td>
<td>71</td>
<td>83</td>
<td>16.9%</td>
<td>86</td>
<td>91</td>
<td>87</td>
<td>90</td>
</tr>
<tr>
<td><strong>Total - All Jurisdictions</strong></td>
<td>659</td>
<td>864</td>
<td>1,044</td>
<td>20.9%</td>
<td>1,023</td>
<td>1,177</td>
<td>1,136</td>
<td>1,128</td>
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Capital Investment Plan

- Significant pressure from regulators to increase the rate of “leak prone pipe” replacement in all jurisdictions

- Low gas prices driving increase in oil to gas conversions
  - Drives significant increases in spend associated with reliability/reinforcement projects
  - Regulators seeing the need to make low price gas available in more areas

- Impacts of Superstorm Sandy driving projects to reduce the amount of low pressure infrastructure in flood prone areas

- All this puts pressure on our ability to not only attract internal and external construction resources but also on the engineering planning and design resources
Industry Landscape and Business Impact

- Engineering talent is in short supply - competition for qualified students and experienced professionals is at a high level.

- Supply is at a lower level than experienced in the past

- Need to have an effective supply chain for these critical resources

- Need to keep talent engaged and interested in spending their career at National Grid.

  - As workforce demographics change, supervisors need to be trained in different supervisory techniques and retention strategies for newer and mobile workers.
National Grid’s Outlook

- Current headcount: ~700 engineers in our management ranks.
  - 34% are under age 40
  - 66% are over age 40
    - ~50% of the over age 40 group are 52 or older
- Projected retirements by function for the next 5 years:
  - 5% of Electrical Engineering
  - 50% of Gas Engineering
  - 25% of Electrical Asset Management
- 41% of our Engineers are in a cash balance pension plan – highly portable
- Anticipated needs for next 10 years:
  - ~20-40 engineers/year to keep up with retirements and/or resignations
  - ~40 – 60 engineers/year if capital improvements increase by 5%
Strategic Workforce Planning

- Enables National Grid to identify gaps in roles (both capability and capacity) which would hinder the successful implementation of the strategic priorities and put in place Workforce Strategy Actions to address these e.g. Development Pipeline. 10 year timeframe.
- Introduced process in the US in 2012. Conducted a pilot within NWS while laying the foundation for future cycles.

Business Plan Inputs
- Business Plan
- Capital Plans
- Regulatory Plan
- Base assumptions

Demand Forecasting
- 10 year forecast of:
  - Job roles
  - Skills
  - Numbers

Determine Workforce Gap
- For each role and grade
- Workshops to share requirements & determine future strategies

Supply Forecasting
- Retirements
- Resignations

Workforce Analysis
- Critical roles
- Base assumptions
- Resourcing success vs planned

Business Approval
- Yr 1-2 resourcing numbers
- Yr1-10 demand
- WFP Resource Strategies
- Risk analysis

Workforce Strategies Y3-5
- Implement HR strategies to recognise and mitigate risks e.g. retention, training, retirees

Resourcing Plan Y1-2
- Resourcing approvals
- Execute attraction plans
- Quarterly reviews against demand
What does WFP tell us?

Network Strategy

- 51% of engineers in critical roles are forecast to leave by 2022
- Coupled with increasing demand, this results in a forecast gap of 328 electrical and mechanical engineers by 2022
What are the remedies?

**Attract**
- Re-established US GDP as a pipeline for entry level talent; 10 week intensive introduction to National Grid culminating in placement in specific role in the business
- Recognized more immediate workforce needs (3-5) in key operational areas resulting in approval of 28 supervisory roles in Maintenance and Construction, 10 Project Management Complex Construction, and 30 Engineers for Network Strategy
- Completed the third year of our engineering pipeline programme, which aims to inspire promising students to become engineers and provide them an opportunity for fast tracked employment with National Grid
- Pilot sponsor of the Troops to Energy Jobs national initiative, which seeks to provide resources and opportunities for returning veterans

**Develop**
- Technical Skills Pipeline Development and Retention Strategy (Engaging Engineers) kicked off with a Supervisor Engagement Workshop to create a plan to better enable supervisors and managers to execute on core responsibilities
- Identified Four Phases of Engineering Career
- Executed a refreshed leadership development approach with the introduction of two new programs for middle level leaders – Business Insights and Leadership Insights
- Annual Expert Training was delivered to over 6,800 employees
- Training is on target to exceed 500,000 student hours

**Retain**
- Elevate 2015 People & Culture Workstream. It’s charge is to re-engage employees hearts and minds, promote our desired culture of operational excellence, innovation and customer and community focus
Engineering Career Phases

- **Pre-Graduate**
  - Supported by STEM programs, High School partnerships, Scholarships, Internships/Co-op, and Capstone projects
    - Engineering Our Future, Energy Explorers, STEMConnector
  - Strong college/university partnerships (i.e., Worcester Polytechnic, Syracuse University, SUNY Maritime, Rensselaer Polytechnic, Northeastern)
  - Engineering Utility Technology (EUT) programs with community colleges (i.e., Middlesex Community College, Northshore Community College, Quinsigamond Community College)
  - Center for Energy Workforce Development
    - Designing the framework for energy careers

- **Fundamental (0-5 years of experience)**
  - Hired directly out of college for Graduate Development Program
  - Partnership with Troops to Energy Jobs
  - Provide an Engineering Development Program in order to progress professionally, acquire additional education and skills, learn about the company

- **Professional (5-15 years of experience)**
  - Technically skilled and productive in area of expertise
  - Developing expertise in industry
  - May consider future options (i.e., Operations, Technical Management or Technical Expert)
  - Gaining PE certification

- **Expert (15+ years of experience)**
  - Secure in chosen career path (technical or supervisory)
  - Responsible for larger and more complex activities; may serve as a mentor
  - Represents National Grid at national technical organizations (AGA, IEEE)
Questions?