Vital Energy Resource

- Coal: 28%
- Gas: 35%
- Nuclear: 19%
- Hydro: 7%
- Renewables: 10%
- Other: 1%
2018 Outlook Forecast (1.1% CAGR)

- Residential: 0.5%, 1.3%, 1.7%, 1.3%
- Commercial: 0.5%, 1.3%, 1.7%, 1.3%
- Industrial: 0.5%, 1.3%, 1.7%, 1.3%
- Generation: 0.5%, 1.3%, 1.7%, 1.3%

Million Dth
Interconnected Energy System

- Steel
- Agriculture (mint, hops, greenhouses, dairy, food processing, etc., fertilizer, etc.)
- Synthetic materials
- Lumber
- Paper
- Gasoline/Diesel
- Hospitals
Efficient Energy Resource

Natural Gas

Source Energy: 100 MMBtu
Extraction, Processing & Transportation: 93 MMBtu (7% Energy Loss)
Generation: 92 MMBtu (1% Energy Loss)
Distribution: 40 MMBtu
Delivered to Customer: 40 MMBtu

*based on EIA 2017 average US natural gas generation operational heat rate

Electricity

Source Energy: 100 MMBtu
Extraction, Processing & Transportation: 95 MMBtu (5% Energy Loss)
Generation: 42 MMBtu (56% Energy Loss)
Distribution: 40 MMBtu (6% Energy Loss)
Delivered to Customer: 40 MMBtu

*based on EIA 2017 average US natural gas generation operational heat rate
Space and Water Heat

• January 5, 2017, 7am-8am:
  – ~30 GWh delivered via electric system
  – ~1,500,000 therms delivered via gas system
• 1.5 million therms = 44 GWh

6.5 x
Installed, Reliable Energy Delivery System

Legend
- Blue = Interstate Pipelines
- Red = Intrastate Pipelines

Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System
Price As An Indicator

Source: EIA Annual Wellhead Price adjusted to $2017 using BLS CPI
Projected Natural Gas Price

Source: EIA 2008/2017 Annual Energy Outlook; NPCC 7th Power Plan -2017 Update
Responding to Climate Policy

- Constructively participate
- Evolve and innovate
- Leave no one behind

**EQUITY**
Provide warmth affordably to the people that depend on us

**ENVIRONMENT**
Drive down emissions with efficiency, renewables, new technology

**ECONOMY**
Utilize installed system to support economic vitality and health
A Pathway Forward

**OUR PRODUCT**

**REDUCE**
- carbon intensity
  - Renewable natural gas
  - Upstream methane reduction
  - Power-to-gas

**OUR CUSTOMERS**

**REDUCE**
- and offset consumption
  - Energy efficiency
  - Carbon Offsets
  - New technology

**TRANSPORTATION**

**REPLACE**
- more carbon intensive fuels
  - Displace diesel in fleets
  - CNG/RNG
  - Hydrogen