

NATURAL GAS IN A LOW-CARBON FUTURE

David H. Anderson, President & CEO
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NW NATURAL

- Nearly 160 years of service
- Largest stand-alone local distribution company in the Pacific Northwest
- Serving two million people in Oregon and SW Washington
- One of the tightest, most modern distribution systems in the country



EVOLVING WITH THE TIMES



Manufactured gas
for lighting and
heat (1860s)



Network expands
with arrival of
Northwest pipeline
(1950s)

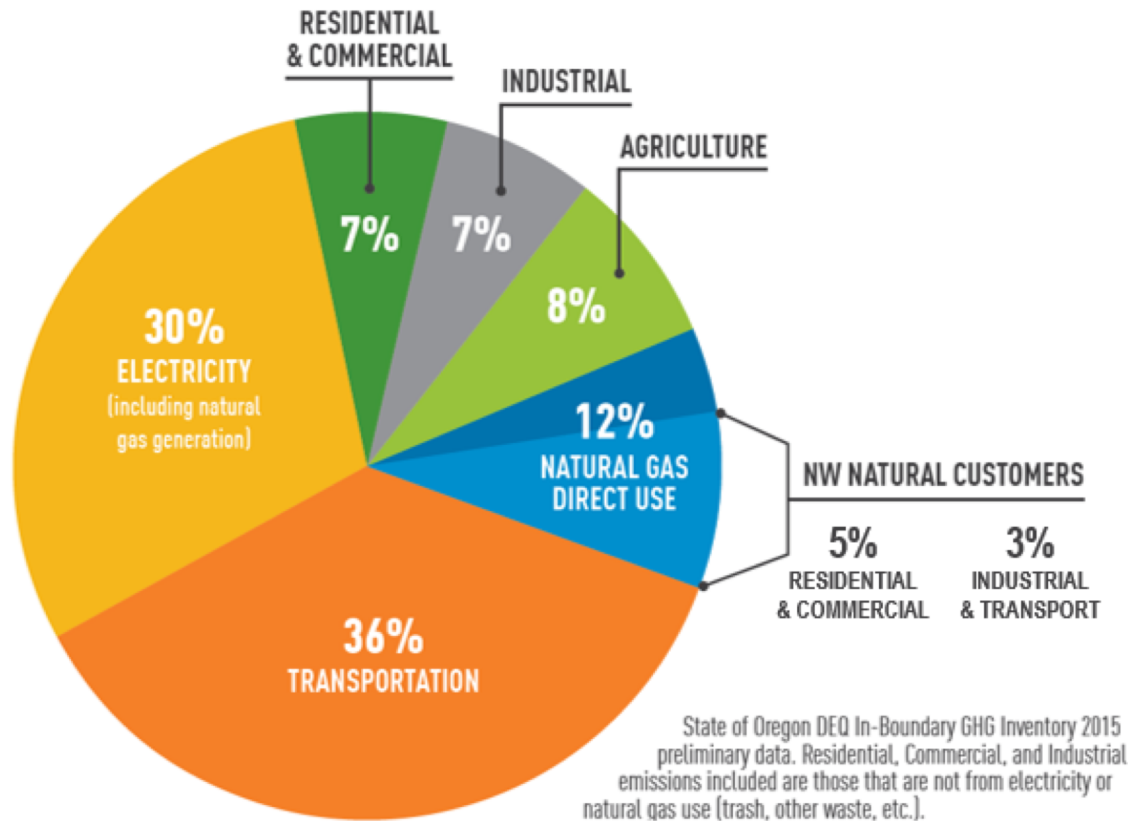


Modernized system,
decoupled rates,
energy efficiency
(2000s)



Growth in carbon
offset program,
interest in RNG
(2010s)

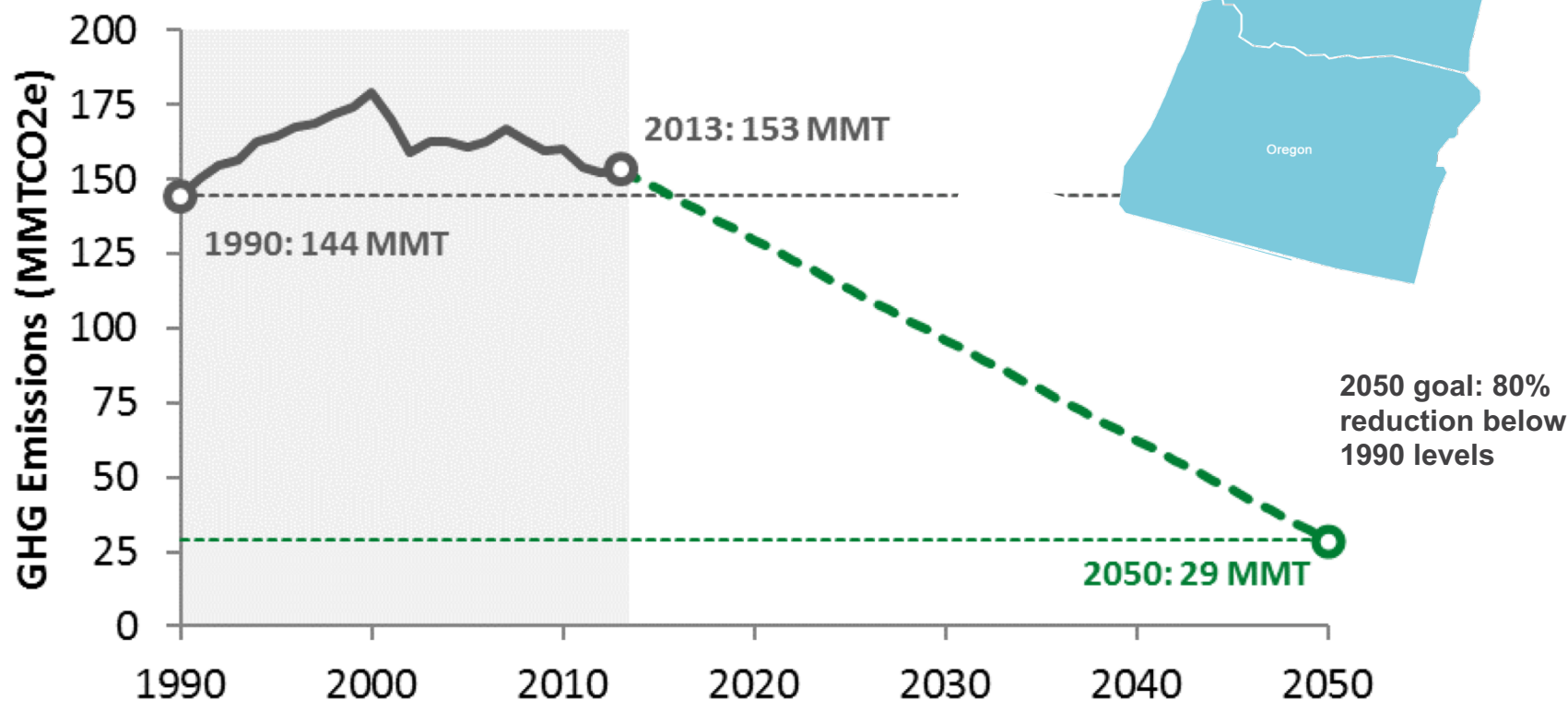
OUR SYSTEM TODAY



- Major energy asset
- Modern, efficient system
- Crucial for peak demand
- Modest emissions profile
- Lower carbon potential

E3 DEEP DECARBONIZATION STUDY

Oregon and Washington Deep Decarbonization Trajectory





Significant Mitigation Efforts Are Required Across All Sectors in All Scenarios



Energy efficiency & conservation

- ✓ Smart-growth driven VMT reductions
- ✓ Whole-home retrofits & new construction codes
- ✓ Electric heat pumps displacing resistance heat



Electrification

- ✓ Electrification of industry OR buildings
- ✓ Electrification of passenger vehicles
- ✓ Electrification of trucks and freight transportation



Low-Carbon Fuels

- ✓ Low-carbon electricity
- ✓ Low-carbon biofuels
- ✓ Potentially renewably produced hydrogen



Reduce non-combustion GHGs

- ✓ Methane reductions
- ✓ Replacement of high global warming potential gases
- ✓ Industry process emissions reductions

FROM WASTE TO RENEWABLES

Portland Wastewater Treatment Plant RNG Project



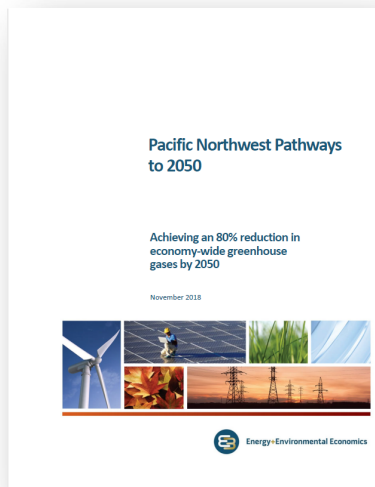
- City's single largest climate action project
- 100% methane recovery
- 21,000 tons CO₂ saved annually
- Displaces diesel fuel in heavy-duty trucks
- Three-year payback

LEARN MORE

Deep Decarbonization Breakfast Briefing

December 10th
8 – 10 a.m.

NW Natural
Headquarters
Portland, OR



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