

Political Trends for Local Natural Gas Distribution Companies in the Pacific Northwest

*Ocean Renewable Energy Conference
September 18, 2018*

NW NATURAL OVERVIEW



- 160 year old Oregon company
- Serve over 2.1 Million Oregonians – more than half the state’s population
- Deliver natural gas to businesses and homes
- On the coldest mornings of the year, natural gas meets 90% of our customers’ household energy needs

WHERE ARE WE & HOW DID WE GET HERE?

2007

- The Shale Gas revolution results in dramatically increased natural gas production and historically low prices.

2015

- The US joins the Paris Climate Accord, an aggressive global pact to reduce GHGs.

2017

- Trump announces he will withdraw the US from the Paris agreement.

Today

- Thousands of US cities, states & businesses vow to meet Paris Climate Commitments.

IMPLICATIONS FOR THE PNW

West Coast States and Cities Take Action on Climate Change



IMPLICATIONS FOR NW NATURAL

NW Natural believes:

- There will be a price on carbon in OR and WA within the planning horizon
- Local communities and some businesses in our region will continue taking action to reduce greenhouse gas emissions
- Election outcomes in November 2018 will determine timing and shape

In response, we are:

- Working hard to find low-carbon resources like RNG
- Studying emerging technologies like Power to Gas
- Determining how to measure and mitigate tomorrow's risk with investments and policy action today

WHAT ARE WE DOING ABOUT IT?

Decarbonizing the Pipeline

Renewable Natural Gas



Wastewater treatment plants, dairies and landfills are sources of RNG and are interchangeable with natural gas

Power to Gas



Using excess renewable electricity to make renewable hydrogen can displace pipeline natural gas

Reach upstream



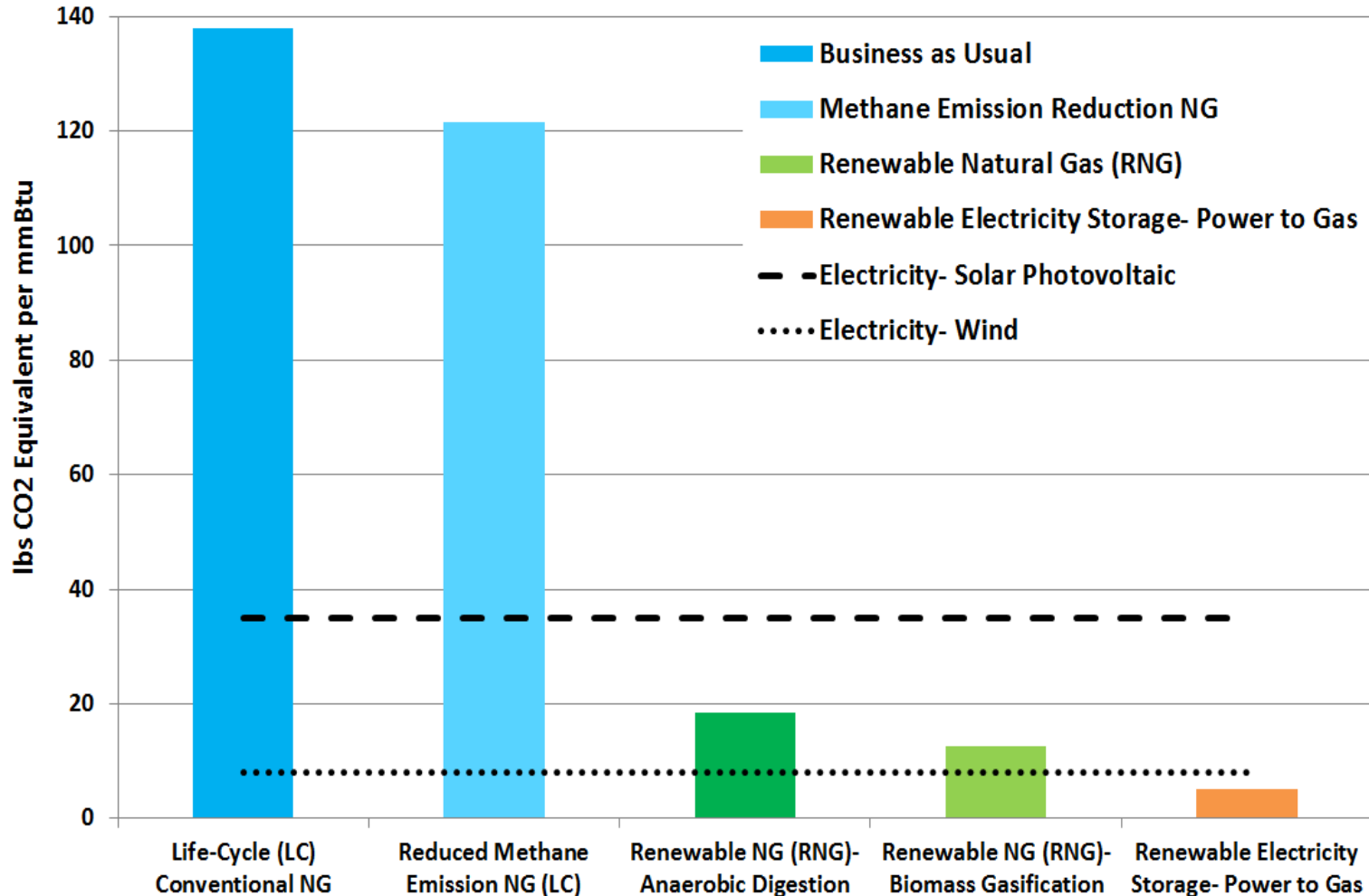
Reducing methane at the well-head by incenting best practices decreases the carbon intensity of natural gas

OUR PRODUCT

LOWER EMITTING GAS and REDUCING UPSTREAM EMISSIONS



Relative Life-Cycle (LC) Natural Gas Carbon Intensities

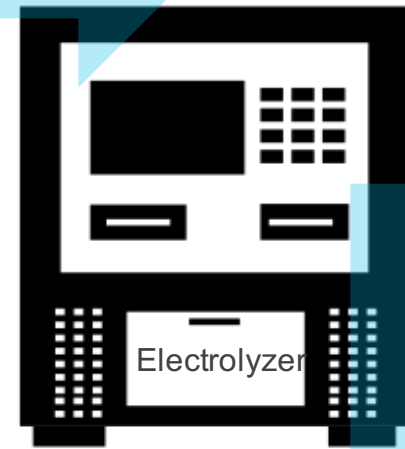
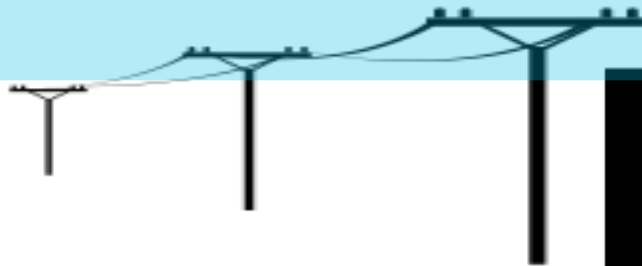
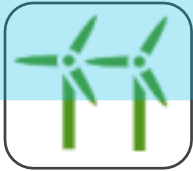


THANK YOU

Shanna Brownstein, Public Affairs
Shanna.Brownstein@NWNatural.com



Power to Gas and the Natural Gas Distribution System



Natural Gas Distribution System



Hydrogen Fuel Cell



Hydrogen Storage for Transportation fuel

