Carbon Solutions Program
(under SB 844)

Conservation Advisory Council

February 4, 2015

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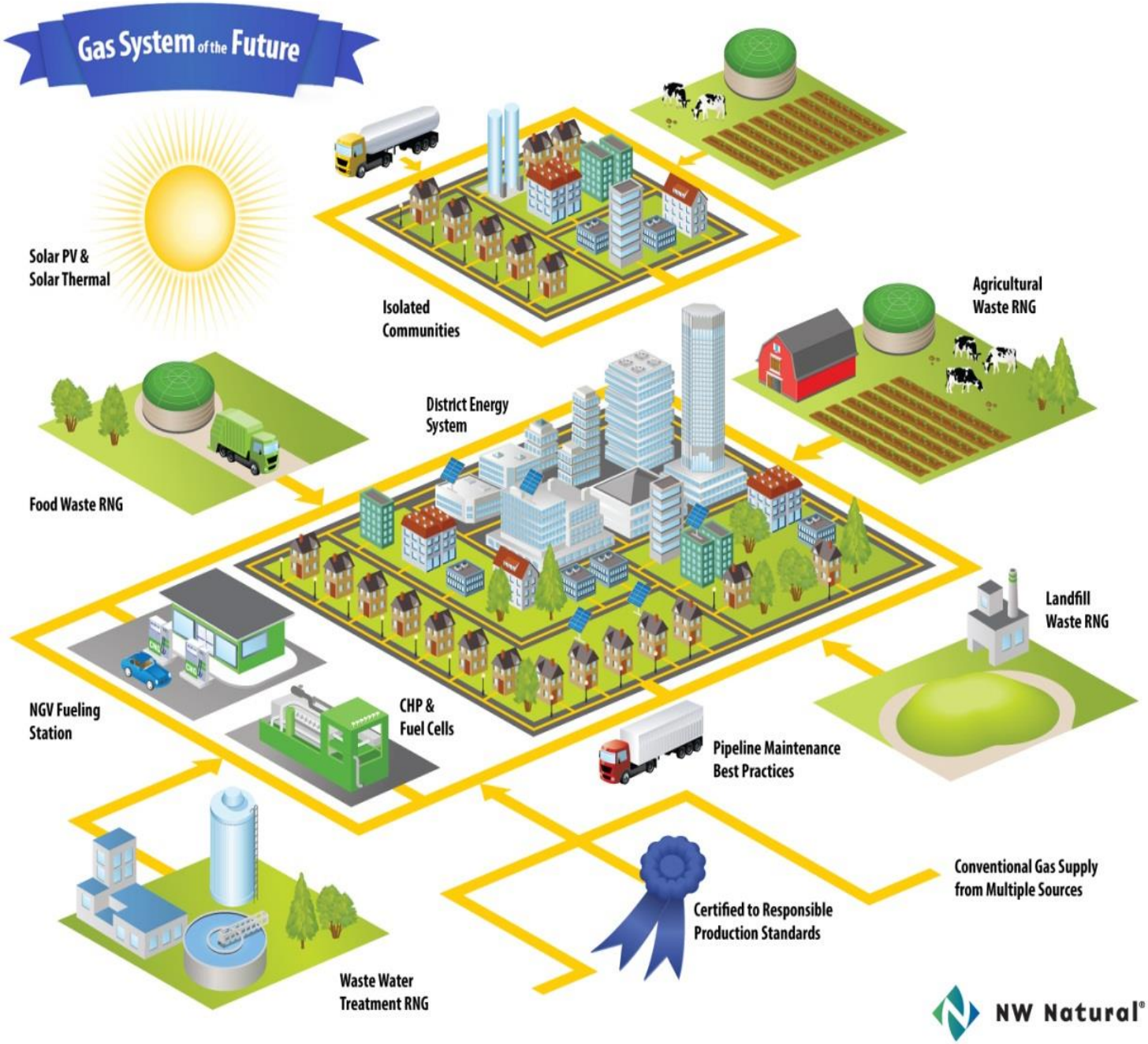
Gas System of the Future
Solar PV &
Solar Thermal
Isolated
Communities
Agricultural
Waste RNG
District Energy
System
Food Waste RNG
Landfill
Waste RNG
NGV Fueling
Station
CHP &
Fuel Cells
Pipeline Maintenance
Best Practices
Conventional Gas Supply
from Multiple Sources
Certified to Responsible
Production Standards
Waste Water
Treatment RNG
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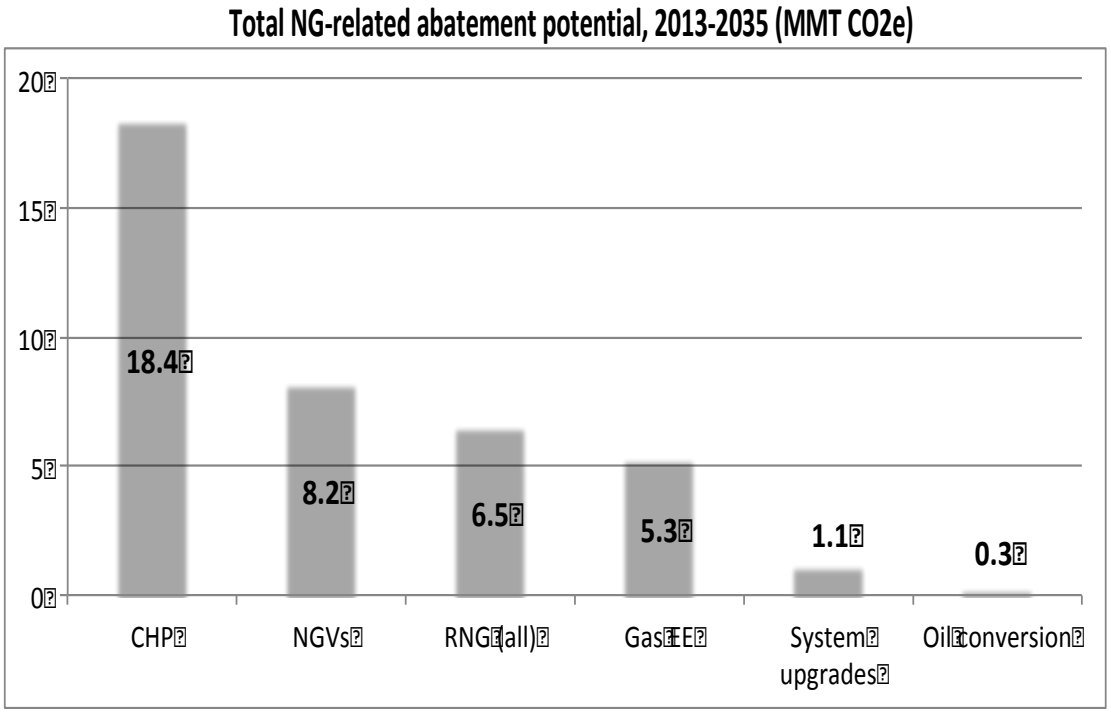
The Basics

- SB 844 (passed in the 2013 session) allows natural gas utilities to voluntarily develop greenhouse gas reduction projects
- Projects must:
  - Reduce net GHG emissions
  - Go beyond business as usual
  - Result in customer benefits
- OPUC approved rules for implementation (Dec 3)
- The annual cap for NWN SB 844 projects is 4%, which equates to a revenue requirement of about $28 million

Where Is The Potential in Oregon?

- Natural gas can and should have a central role in the state's GHG reduction strategies
- Varied opportunities, but categorized in "buckets"



Sources: Oregon Department of Energy and Center for Climate Strategies; Energy Trust of Oregon and The Climate Trust; NW Natural.

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Project Concepts

Utility Operations

Capture and re-inject vented natural gas during maintenance

Reduce carbon intensity of liquefaction at at Newport and Portland LNG facilities

Displace conventional natural gas with Renewable Natural Gas or “certified” natural gas

Utility Programs

Reduce consumption of diesel oil by incenting replacement of residential oil furnaces

Develop in-market source of renewable natural gas from WWTPs to displace conventional natural gas and displace diesel for vehicle use

Reduce consumption of diesel oil for thermal and vehicle use by extending natural gas service to isolated customers and communities

Commercial Solar Thermal / Renewable energy to replace fossil fuels

Market Solicitation

Conduct market solicitation for specific project types such as CHP. Market solicitation would:

- Require projects to meet specific criteria
- Carbon rates based on technology
- Rigorous verification of savings

Conduct a market solicitation to provide an incentive for the conversion of vehicles to CNG

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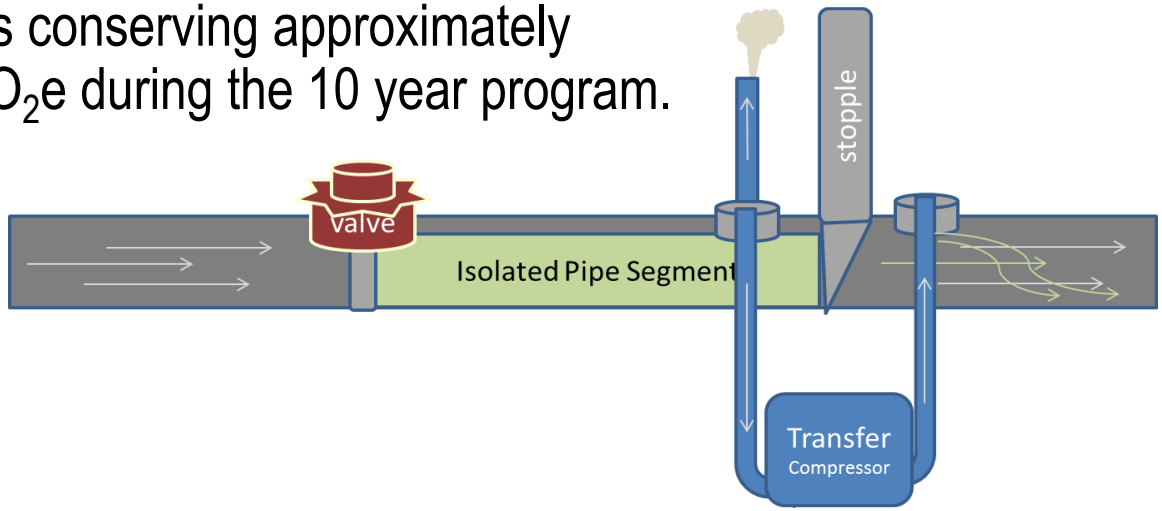
Methane Abatement Program

- During routine procedure isolating pipeline for work methane is released to the atmosphere during blow down events
- Through the use of a transfer compressor to capture, compress and reinject evacuated gas GHG emissions are directly reduced and gas is conserved for customer use.
- This program anticipates conserving approximately 10,000 metric tons of CO_2e during the 10 year program.



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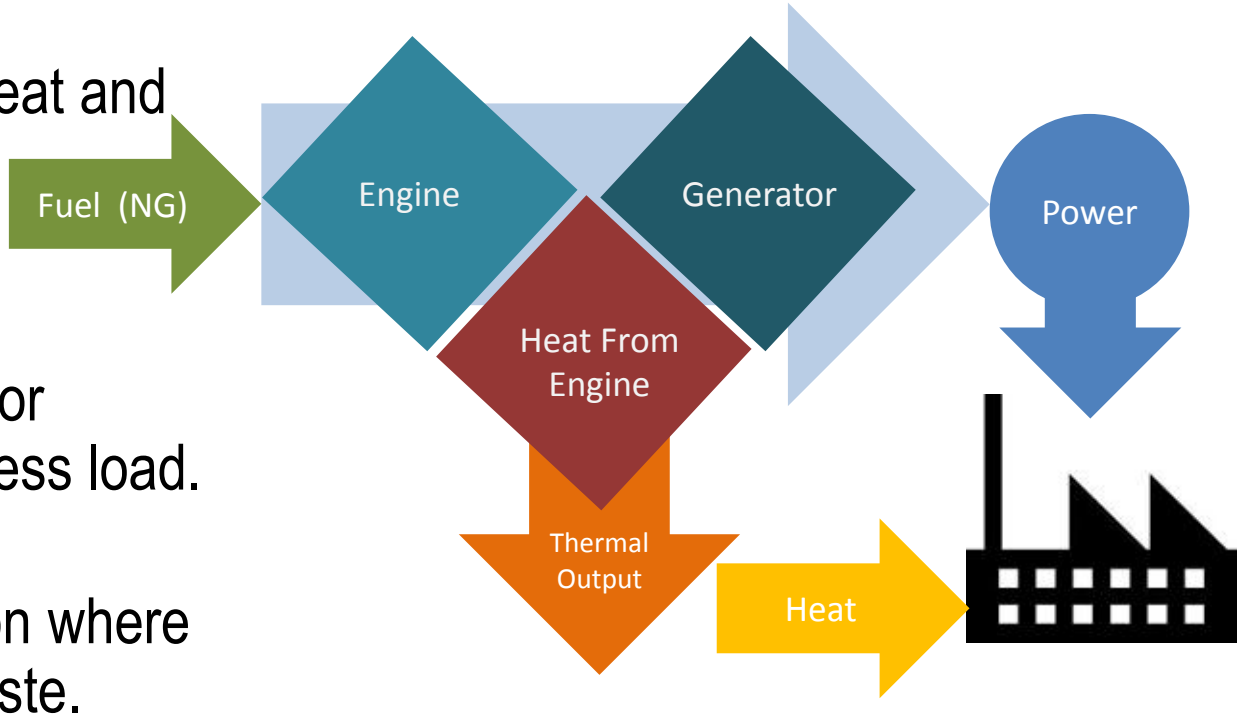
Combined Heat & Power

- Combined heat and power (CHP) integrates the production of usable heat and power (electricity), in one process.
- Waste heat from CHP displaces natural gas for space, water and process load.
- This contrasts with conventional generation where heat is released as waste.



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Combined Heat & Power

Policy Context

- Obama Administration (Exec Order, August 30, 2012) – Goal of deploying 40 gigawatts of new CHP in US by 2020
- Existing incentives not moving market
- Currently two known CHP installations, with total of 24 MWs

CHP Target Setting

- ODOE engaged ICF International to assess technical and economic potential:

Technical CHP in Oregon:
1,457 MWs

Economic CHP in Oregon:
319 MWs

Combined Heat and Power

- Consistent with ICF methodology, NWN identified:
  - 357 MWs (Tier 1 projects)
  - 27 MWs (Tier II projects)
- Only possible if carbon incentive (under 844) combined in a seamless manner with incentives from ODOE and ETO

Stacked Incentives

- NWN Carbon Emission Reduction Incentive
- ETO Cost Effective Efficiency
- Oregon Department of Energy

Combined Heat and Power

Program Design

- ODOE, ETO and NWN programs designed to work together with common:
  - Eligibility criteria
  - Evaluation processes
  - Measurement and verification
- NWN to set annual solicitation at level that fully utilizes ODOE BETC funds.
- Modeling of economics, carbon benefits based on detailed modeling effort (performed by US DOE Technical Partnership with Washington State University) with input from ETO/Energy 350, NWN and ODOE.
- Monitoring and Verification Plan coordinated with the ETO.
- All carbon incentive payments paid based on measured and verified carbon savings.

Next Steps

- Project development continues, then draft to be shared with SB 844 stakeholders (Feb-March)
- After submittal to OPUC, Commission has up to 6 months to review
- ODOE and NWN to coordinate announcement of solicitation as early as July 2015 when next biennium of BETC funding becomes available.

Questions?

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