

Oregon Department of Energy

The Biogas / RNG
Resource Potential in
Oregon
SB 334 (2017)

Dan Avery
October 17, 2017

REFOR17
RENEWABLE ENERGY FROM ORGANICS RECYCLE
October 16-19, 2017 • Portland,
BioCycleREFOR.com



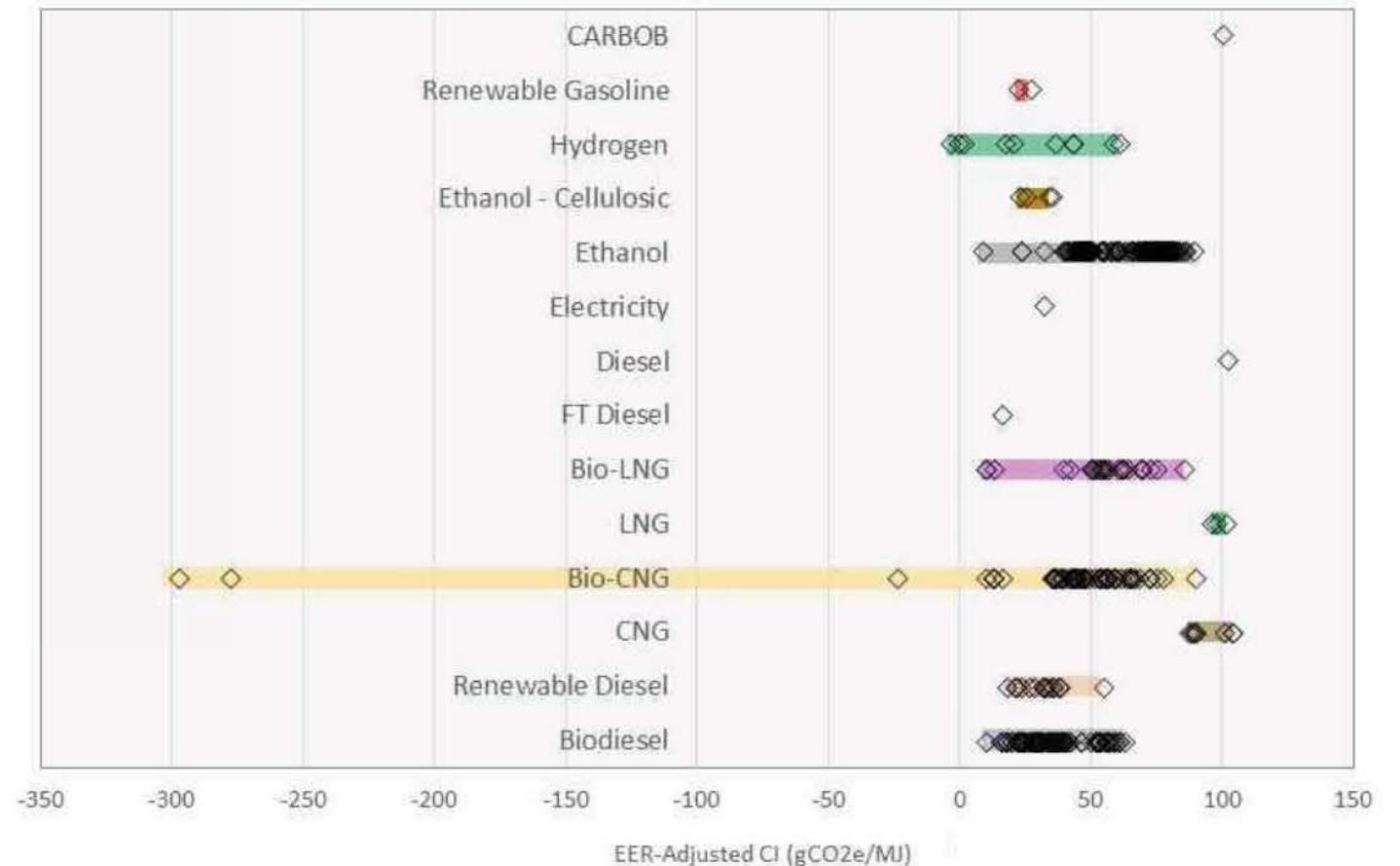
Why RNG: Clean Fuel & Air Pollution Reduction

NG vs Diesel in heavy duty truck engines:

- NG reduced the emissions measures at the exhaust:
 - 🚛 CO reduced 87 - 93%
 - 🚛 NOx reduced 24 - 45%
 - 🚛 TPM reduced 90%

NREL/SR-540-32863 - 2003

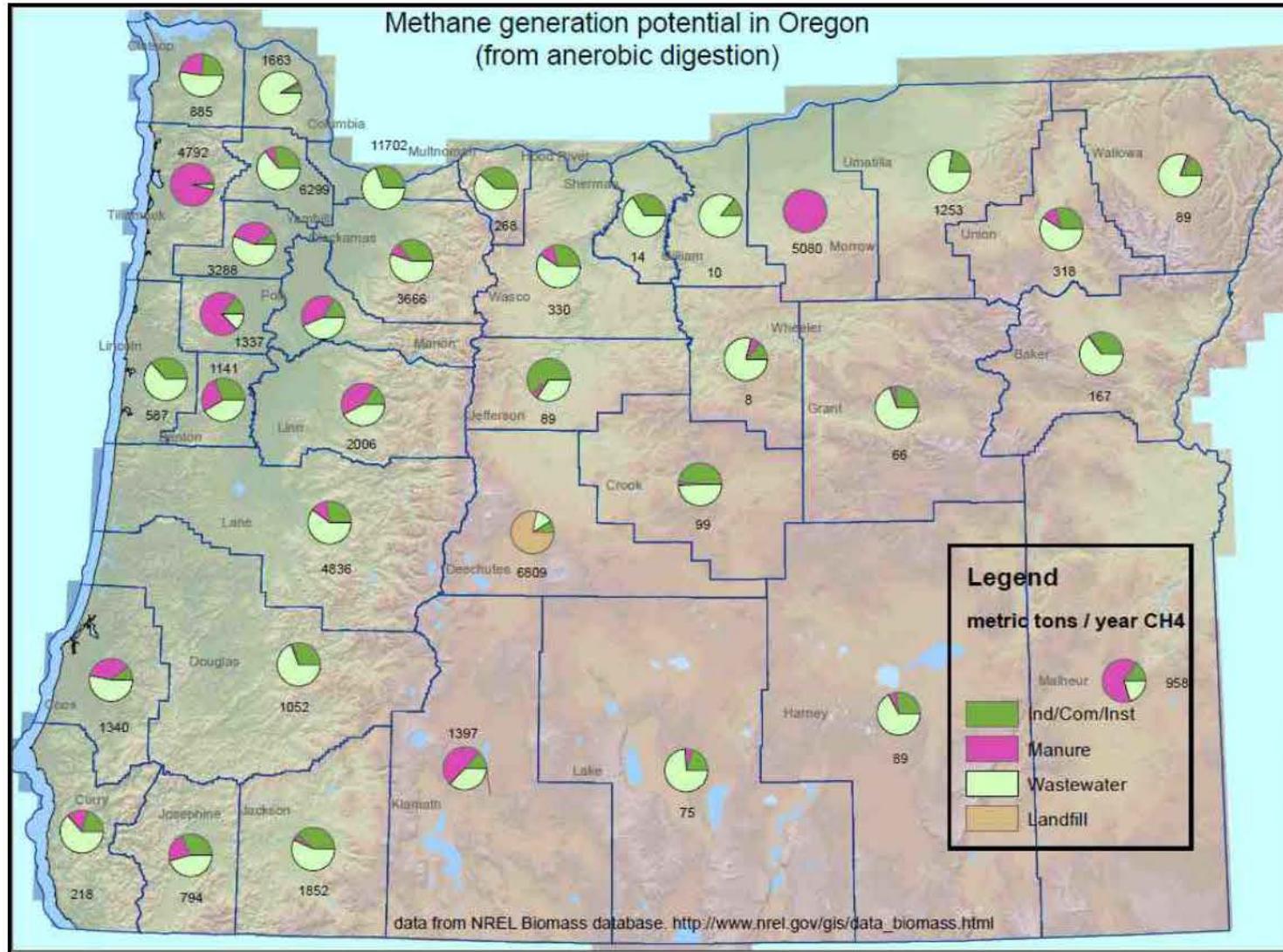
Carbon Intensity Values of Current Certified Pathways (2017)



Why RNG: Economic Opportunity in Oregon

- Uses: stationary and transportation fuel
- 2015, Oregon consumed 236.7 billion cubic feet of natural gas, 99% of which was imported.
- Incentives: RINs, LCFS, and CFP credits

NREL – Biogas Potential



Estimated methane production is 71,359.62 tonnes/year
NERL - 2013

Economic Opportunity

NREL's 2013 Biogas report estimated **71,359 metric tons of methane potential** (via anaerobic digestion) for Oregon.

71,350 tonnes is about 37,537,576 therms

or

\$43,543,588 in annual revenue (if using the 2015 OPUC values)

SB 334 (2017) – Legislative Direction

SB 334 directs ODOE to conduct a detailed feedstock inventory related to biogas and renewable natural gas (RNG) resources within the state of Oregon.

ODOE will form an Advisory Committee to assist it in various aspects of the inventory.

The Advisory Committee is specifically tasked to provide input on barriers to developing and utilizing biogas and renewable natural gas, and to provide recommendations to the department on policy to promote RNG.

The initial report is due to the Legislature no later than September 2018.

SB 334 (2017) – Legislative Mandate

General Tasks:

1. An inventory of physical feedstock resources available in the state. Estimate gross potential volumes and practical volumes based on limits created by raw material access, transportation and preprocessing, delivery of finished product, technology, and economics.
2. A literature review of technology for producing biogas, and for cleaning biogas to pipeline standards and converting it to RNG.
3. An inventory of existing biogas and RNG producers.
4. A detailed review of the supply chain elements starting with raw materials in their original locations, and following it through to its conversion to RNG. Then following the RNG from the production site to the end user.



SB 334 (2017) – Legislative Mandate

5. An economic assessment for each step in the supply chain.
6. A Life Cycle Assessment (LCA) focusing on each step in the supply chain. This will be a slightly generalized assessment with the origin of raw materials represented by a region rather than specific sites. This LCA will not be enough detail to be used in Clean Fuels Program pathways development requirements.
7. ODOE will take the Advisory Committee's suggestions on policy and development/utilization barriers, and begin development of a variety of policy alternatives to address the issues raised by the Committee.

Inventory Tasks

- Form Advisory Committee: October 2017 (7 to 8 meetings total)
- Begin physical feedstock inventory: January 2018
- Literature review of gas production and gas cleanup: November 2017
- Estimated gas production: March 2018
- Found sites mapping: December 2017
- Supply Chain: April 2018
- Market Analysis / economics of the supply chain – currently unfunded: June 2018
- LCA of supply chain steps – currently unfunded: July 2018
- Policy review / development: August 2018
- First report due to the Legislature: September 2018

The report is intended to be a periodic report to the Legislature, so we expect to continue to work past the September report deadline.



Questions

Dan Avery

Oregon Department of Energy

503-373-2295

Daniel.Avery@Oregon.Gov

www.Oregon.gov/energy

