Oregon Department of Energy

Leading Oregon to a safe, clean, and sustainable energy future

The Biogas / RNG Inventory – Advisory Committee Meeting

Dan Avery
October 2, 2017

SB 334 – RNG Advisory Committee

Agenda

Introductions

Overview of SB 33

Charter /Scope/Coordination

Work product's and Tech subcommittee formation

Timeline

Policy/Barriers

Next meeting / Align Calendars

Adjourn

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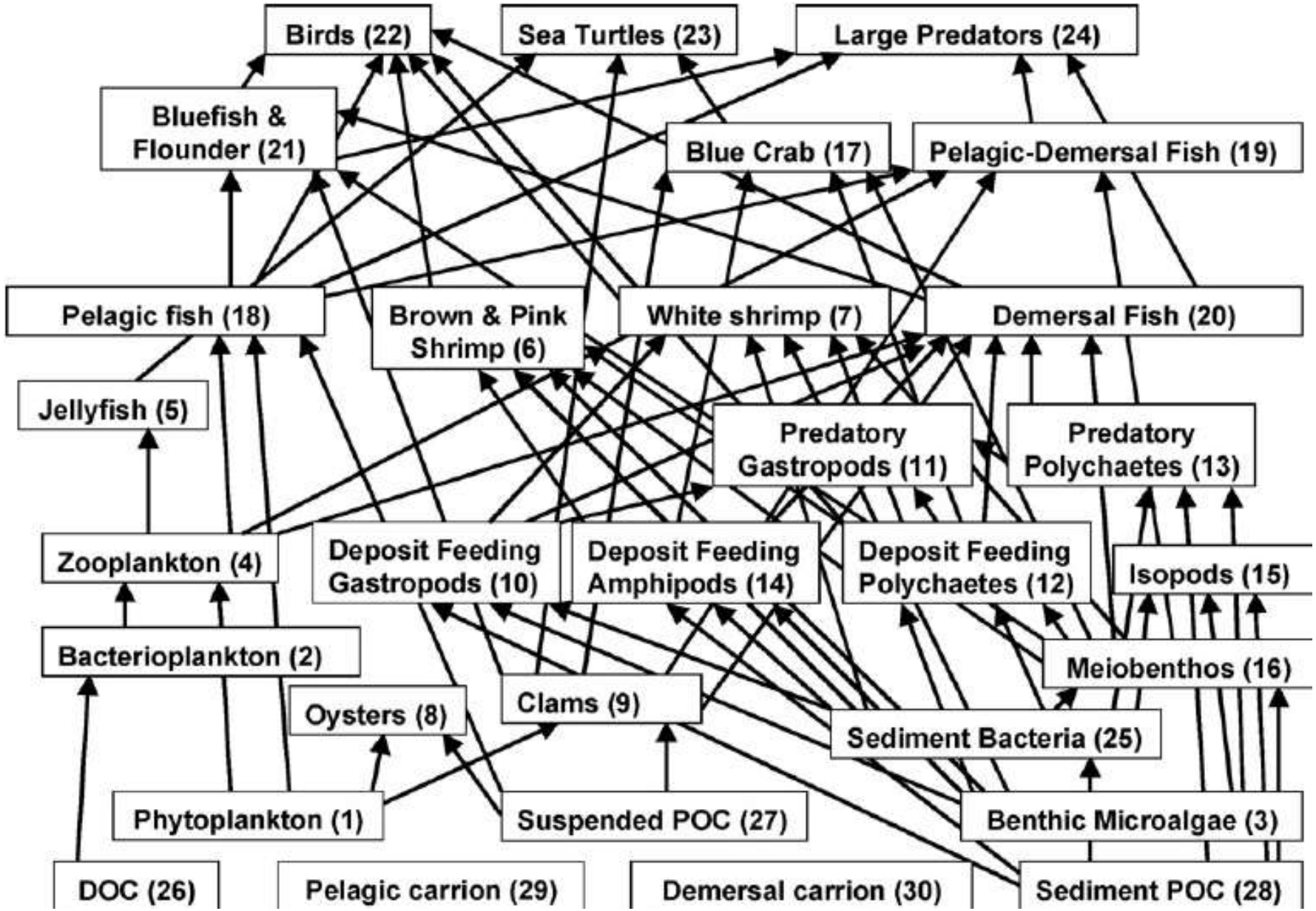

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SB 334 – RNG Advisory Committee

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SB 334 (2017) – Overview

Conduct a detailed feedstock inventory related to biogas and renewable natural gas (RNG) resources within the state of Oregon. Look at both gross potential and practical potential for gas production.

Examine existing biogas /RNG sites and their supply chains.

Estimate GHG emission and air pollution improvements based on using RNG as stationary fuel and transportation fuel.

Form Advisory Committee to specifically 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. And to assist the Department in other matters as requested.

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

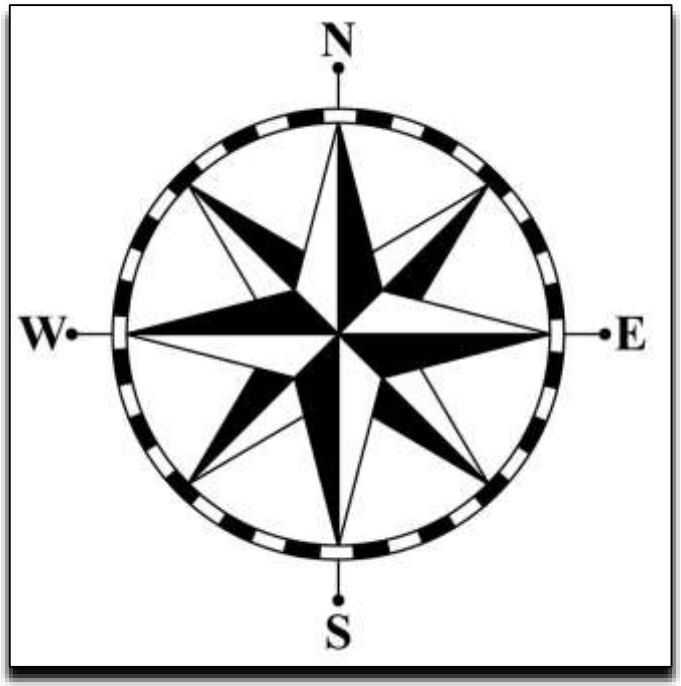
Advisory Committee Meetings

Meetings

Every Month until April 2018, then as needed

Different location within the state for each meeting

Meeting / field trip strategy proposal



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SB 334 – Work Products

Proposed Outcomes / Products – part 1 of 2

Inventory of feedstocks (with a spatial data component)

Description of supply chains

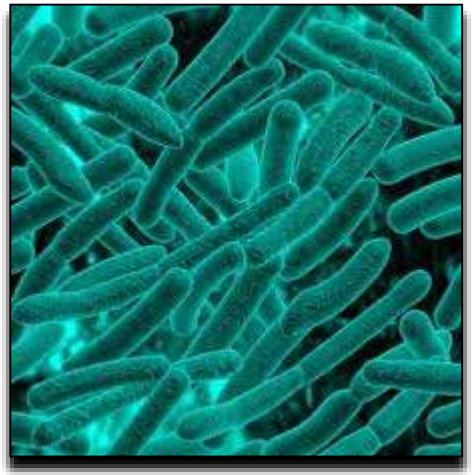
Production Technology Literature Review

GHG and air pollution impacts analysis

Gross and practical production potentials and related economic estimates

Supply chain analysis by feedstock and region

Economic and LCA analysis of the complete supply chains



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SB 334 – Work Products

Proposed Outcomes / Products part 2 of 2

Suggestions for policy and institutional modifications to expand the use of biogas/RNG as a renewable fuel

Supply chain Economic Assessment (outside of scope)

Supply Chain Life Cycle Assessment (outside of scope)

Engineering process model for decision making (outside of scope)

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Charter

SB 334 (2017) - *The department shall appoint an advisory committee to assist in developing, maintaining and periodically updating the inventory required by this section. The committee must include but not be limited to persons familiar with the renewable natural gas industry. The committee shall make recommendations to the department:*

(a) Regarding the identification and removal of barriers to producing and utilizing biogas and renewable natural gas in this state as a means toward providing the greatest feasible reductions in greenhouse gas emissions and improvements in air quality;

(b) On establishing policies to promote renewable natural gas; and

(c) On any other matters related to this section, as requested by the department.

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From SB 334 (2017), Section 1, subsection 4

Potential subcommittees

- Group 1 – Technology process review (AD, thermal gasification and gas clean up).
- Group 2 – Supply chain description by feedstock including WWTF, LF, Food waste, Ag Manure, Cellulosic biomass, (others?) and by region.
- Group 3 – Economic overview (to follow supply chain analysis).
- Group 4 – Comprehensive list of all potential biogas and RNG resources and gas production estimates.
- Group 5 – GHG and Air Pollution reductions.
- Group 6 – Detailed supply chain economic assessment and LCA.

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Calendar / Schedule

Task	start	End	Duration
Advisory Committee formation	In progress	Oct. 17	2 months
Inventory of gross available raw feedstocks	In progress	Dec. 17	6 months
Technology Review (AD and gasification)	Oct. 17	Jan. 18	3 months
Spreadsheet of existing biogas producers (w/spatial data)	In progress	Oct. 17	1 month
Estimates of gross biogas production	In progress	Jan. 18	5 months
Estimates of gross RNG production	Sep. 17	Jan. 18	5 months
Biogas cleaning technology review	Oct. 17	Nov. 17	2 months
Supply chain Analysis (by fuel type and region)	Oct. 17	Apr. 18	6 months
SC economic analysis (pending)			
Policy Review and Development (on going)			
Life Cycle Analysis (pending)			
Basic Economic / Market review			
Report Drafting	Jan. 1 - 18	Sep. - 18	

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2018 Report Preparation

Draft report start – January 2018

Draft report due - ODOE internal - Jul. 20, 2018

Draft report due ODOE – Executive - Aug. 1, 2018

Draft Report due – partners - Aug. 17, 2018

Draft Report due - ODOE Executive - Aug. 25, 2018

Draft Report due Gov. Office - Sep. 1, 2018

Preliminary report due Legislature - Sep. 14, 2018

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Policy, Barriers, and Opportunities

- How to support Biogas / RNG development
- Access to the gas transportation system
- Pipeline gas standards
- Tracking RNG as a transportation fuel for existing state and federal incentives
- Accessing raw feedstocks
- Incentives

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Next Steps

- Sub workgroup formation / Chair ID / Task ID
- Draft charter review and signatures
- Next meeting / format

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Questions

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Other slides

Inventory Timeline

- Advisory Committee formation (September) - 7 to 8 meetings
- Physical feedstock inventory is started, - 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
- The first basic report is due to the legislature in mid September 2018

- This is identified as a periodic report to the Legislature and is anticipated to continue on in to the future.

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SB 334 (2017) – Legislative Direction

- 1. An inventory of physical feedstock resources available in the state. We will examine 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.

- suggestions on policy and barriers and begin development of a variety of policy alternatives to address the issues raised by the Committee.

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4. And a detailed review of their supply chain elements starting with raw materials in their original locations, their conversion to biogas, then RNG, and then the movement of the RNG from the production site to the end user.

5. An economic assessment for each step in the supply chain. This task is beyond ODOE's technical and staff limitations and ODOE is seeking outside funding to contract out this work.

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. This task is beyond ODOE's technical and staff limitations and ODOE is seeking outside funding to contract out this work.

7. ODOE will take the Advisory Committee's suggestions on policy and barriers and begin development of a variety of policy alternatives to address the issues raised by the Committee.

Detailed Tasks

- A list of existing biogas production sites within the state, including their location and an assessment of the supply-chain infrastructure at each site

- Produce an estimated production potential of RNG and ability to deliver for use from the sources identified above, and update these estimates on a periodic basis.

- An estimated production potential of RNG and liquid compressed natural gas as a transportation fuel.

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Detailed Tasks

- An estimated production potential of RNG as a stationary fuel used by residential, commercial, and industrial consumers.
- An estimate of the potential for the use of RNG to reduce greenhouse gas emissions within the state.
- An estimate of the potential for RNG use to improve air quality.
- An evaluation of the technical, market, policy and regulatory barriers to developing and utilizing RNG in this state.

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Detailed Tasks

- Establishment of an advisory committee to assist the department in developing, maintaining and periodically updating the inventory.

- ODOE will submit an initial inventory to the appropriate interim committees of the legislative assembly by September 2018.

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Detailed Tasks

- A list of all biogas and RNG resources available in the state along with potential production quantities obtainable at each source.

- An estimate of the energy content of each source identified in #1 above.

- An estimate of the range (general review) of all the existing technologies available to this state for the conversion of biomass to biogas and RNG, including but not limited to anaerobic digestion and thermal gasification.

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