Renewable Natural Gas (RNG) Industry in the U.S.: Policy & Market Forces

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Coalition for Renewable Natural Gas
Renewable Natural Gas

• Commonly referred to as: **RNG** or **Biomethane** or **Upgraded Biogas**
• Completely **interchangeable** with **Natural Gas**.

RNG (Renewable)
Natural Gas (Geologic)
RNG COALITION - INTRO

• Policy Platform, Advocacy & Education Voice for RNG Industry in North America
• Non-Profit Organization
• Each Industry Sector Represented
• Industry Competitors Collaborating for Common Good
• Members Produce 90%+ of RNG in North America
MISSION

The RNG Coalition…

advocates for increased renewable natural gas development and deployment so that present and future generations will have access to domestic, renewable, clean fuel and energy supply.
RNG COALITION - GENERAL MEMBERS
RNG COALITION - NON PROFIT MEMBERS
RNG OVERVIEW – U.S. FEEDSTOCKS

POTENTIAL SOURCES OF ORGANICS USED TO PRODUCE RNG INCLUDE:

- FOOD WASTE: 66.5 MILLION TONS / YEAR
- WASTEWATER: 17,000 FACILITIES
- AGRICULTURE WASTE: 8,000 LARGE FARMS AND DAIRIES
- LANDFILL GAS: 1,750 LANDFILLS

- WWTP / MSW (100,000 residents); AD (500 head of cattle or as low as 150 when mixing with organics); Other sources include Forestry Biomass and Forest Product Residue, FOGS
U.S. Context: Past, Present, Future

1982 - Fresh Kills Landfill (NY) 1st U.S. RNG Project Developed (Still Operating)

1982-2011 – Historically, state RPS programs have driven production of **RNG as a clean, renewable, electric power** to displace coal and **complement geologic natural gas**.

**RNG Coalition Founded in 2011:** (there’s a story here…)  
31 RNG Projects Operating  
- Nearly 100% Off-Site Electric Generation
ADVOCACY & EDUCATION PHILOSOPHY

Advocacy & Education informs Public Policy.

Public Policies influence Markets.

Markets drive Demand.

Demand determines Value.

Value impacts Revenue.

Revenue affects Sustainability.
*Enable the RNG industry to develop & double the number of operating RNG projects in North America by 2025.*

*based on number of RNG projects operating in 2015*
Advocacy Opportunities…. Many

Grant Funding & Financing

Byproduct Markets (digestate, fertilizer, etc.)

Pipeline Injection

Renewable Power Policy (prices low)

Renewable Fuel Policy

Natural Gas Vehicles / Engines (Demand & Use)
Advocacy & Education informs Public Policy.
Public Policies influence Markets.
Markets drive Demand.
Demand determines Value.
Value impacts Revenue.
Revenue affects Sustainability.
Advocacy Opportunities…. Prioritize

Grant Funding & Financing

Byproduct Markets *(digestate, fertilizer, etc.)*

**Pipeline Injection**

Renewable Power Policy *(prices low)*

Renewable Fuel Policy

Natural Gas Vehicles / Engines *(Demand & Use)*
Increasingly, federal, state/provincial programs (RFS, LCFS, CFP) are driving production of RNG as ultra-low carbon transportation fuel for a new generation of medium- and heavy-duty Natural Gas Vehicles.
RENEWABLE FUEL STANDARD (RFS)

- Policy, mandated by legislation -- Enacted in 2005 (Energy Policy Act)
- Administered by Environmental Protection Agency (U.S. EPA)
- **What:** U.S. fuel supply must annually blend increasing proportions of renewable / biofuel into our transportation fuel supply mix
- **How:** Obligated Parties - Refiners & importers of gasoline & diesel must participate in the program 1) by blending renewable fuel into transportation fuel at an annually specified percentage of volume, or 2) by obtaining (purchasing) biofuel credit certificates (RINs) as a means of fulfilling the volume requirement.
RENEWABLE FUEL STANDARD (RFS)

HOW IT FUNCTIONS (...continued)

• Renewable Identification Number -- A **RIN** is serial number assigned to a volume of RFS-qualifying biofuel for purposes of tracking its production, use and trading

• **1\textsuperscript{st}, 2\textsuperscript{nd}, 3\textsuperscript{rd} Generation Biofuels** (biofuel, advanced, cellulosic)

• Increasing RIN value with the increased environmental benefit of each category

• Cellulosic Biofuel – cleanest fuels category…
  - fuel feedstock/production methods with 60%+ GHG reduction over diesel

• 2013-14: Worked with EPA to help RNG fuel methods achieve Cellulosic eligibility

(\textit{Since 2014, RNG = 98\% of RFS-qualified Cellulosic Biofuel})
RNG - NORTH AMERICA

RNG PROJECTS OPERATE OR ARE UNDER CONSTRUCTION IN 27 U.S. STATES AND 2 CANADIAN PROVINCES INCLUDING:

ONTARIO AND QUEBEC
RNG Transportation Fuel Volume (Million EGE)

<table>
<thead>
<tr>
<th>Year</th>
<th>Fuel Volume (Million EGE)</th>
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<tbody>
<tr>
<td>2011</td>
<td>1.4</td>
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<tr>
<td>2012</td>
<td>2.9</td>
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<td>2013</td>
<td>25.9</td>
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<td>2017</td>
<td>252.25</td>
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<td>2018</td>
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RNG PRODUCTION FOR TRANSPORTATION FUEL

GREW BY 5X BETWEEN 2013 AND 2015

25.9 M EGE VS 139.8 M EGE

IS ON PACE TO TRIPLE IN VOLUME BY 2018

417.2 M EGE PROJECTED
57+ RNG Projects Now Operating in U.S.
26 New RNG Projects Being Developed

2017 RNG COALITION MEMBERS
(grown to 100+ today from ~50 in 2014)
on track to produce =
375,382,434 EGE of RNG
(76% to Transportation fuel, 24% to Off-site Power Generation)
Industry Advocacy Growth & Success – How?

**Resources** – Nearly all members pay annual dues: $5,000 general & $25,000 leadership

**Keeping it Simple, but effective** –

- **Structure** 3 board members + 2 founders
- **Staff:** Grown from 2, to 3, to 8

**Prioritize** 2-3 areas of effective advocacy > 5-10 areas running too thin

**Advocacy** – **One Voice** – We formulate comments, members copy or issue letters of support

**Partner** – Get buy-in from related industries on key issues

**Conference & Interaction** – At least half of members in-person 2+ times per year

**Executive Brand** – Targeting Decision-makers

Established Industry
THANK YOU!

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Increased RNG Production: Impediments & Solutions
1. Production Costs (vs. Low NatGas Price)
2. Market Uncertainty
3. Access to Investment Capital
4. Policy Incongruence
5. Pipeline Access
6. Vehicle Demand (vs. Diesel, EVs)
1. Advocate for Funding to Advance Technological Developments that Reduce RNG Production & Infrastructure Costs

+ RNG PRODUCTION - SOLUTIONS
2. Educate Stakeholders (General Public, Industry & Elected Officials) about the Economic & Environmental Benefits realized through increased Development & Deployment of Renewable Natural Gas
3. Advocate for greater certainty of Public Policies that shape RNG Markets, determine RNG demand & drive RNG production – this will unlock greater access to investment capital.
4. Advocate for Public Policies to recognize the economic value and global environmental benefits associated with increased RNG utilization, regardless of geographic origin of development
5. Advocate for monetary incentives and reasonable regulations that enable greater pipeline access for and transportation of RNG
6. Advocate for technology neutral funding that will also incentivize and or enable diesel owners to purchase new or otherwise convert their fleets to natural gas engines fueled by RNG