



Renewable Natural Gas

Ronald Fisher and Meryl Sands

Leading the energy evolution and helping our members buy, use, and understand energy.

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Our Program

The Future of RNG

Intro

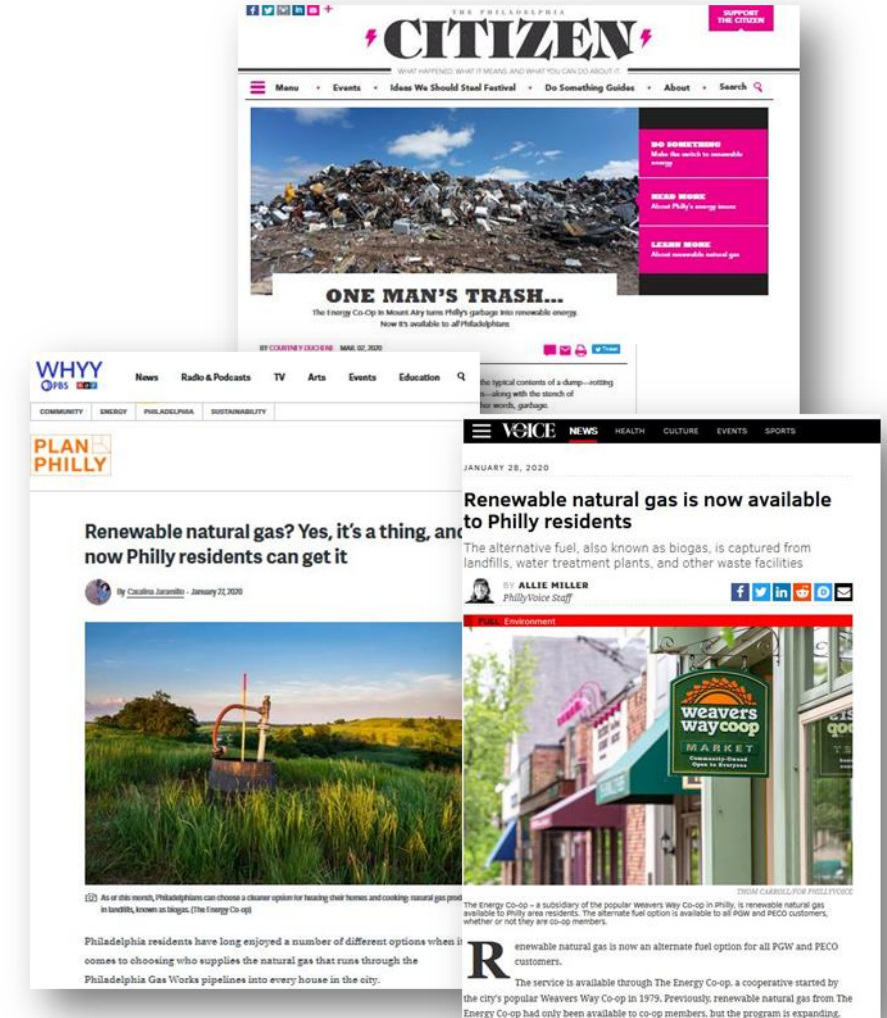
The Energy Co-op's Sustainable Energy Solutions

□ Nonprofit, cooperative model

- Member-owned
- We innovate in ways that corporations won't

□ Leader of today's renewable energy evolution

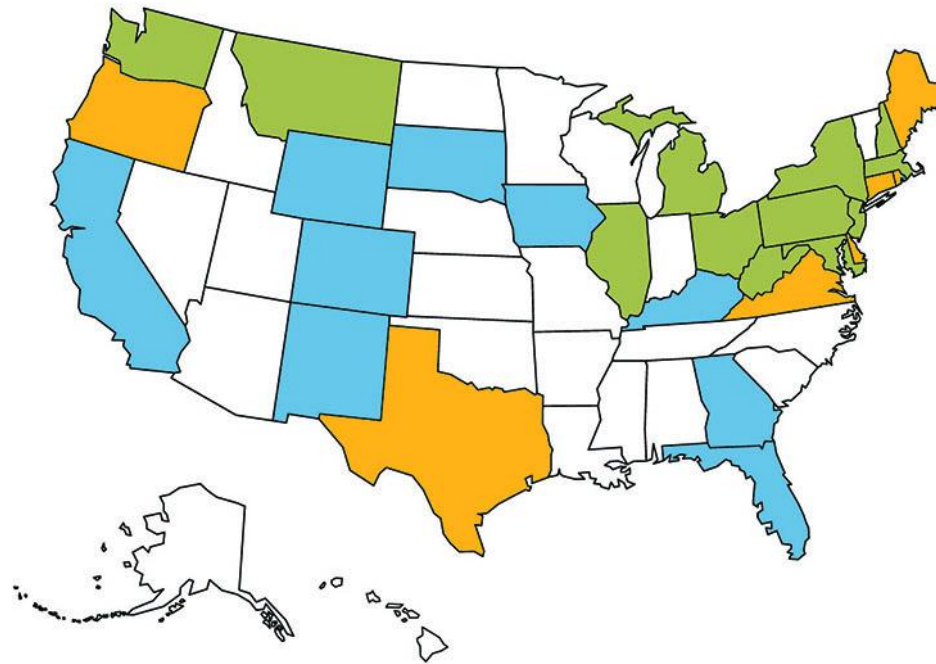
- 1998 – First supplier of renewable electricity in Southeastern PA
- 2015 – First supplier of Renewable Natural Gas in our region
- 2020 – First supplier of RNG to Philly, through PGW expansion



Energy Choice

What's Deregulation?

In a regulated energy market (no retail choice), the utilities are vertically integrated monopolies that generate energy as well as providing distribution and transmission.



In a deregulated energy market (states with retail choice), merchant generators provide the electricity generation services but utilities still own the transmission and distribution lines.

Our why...

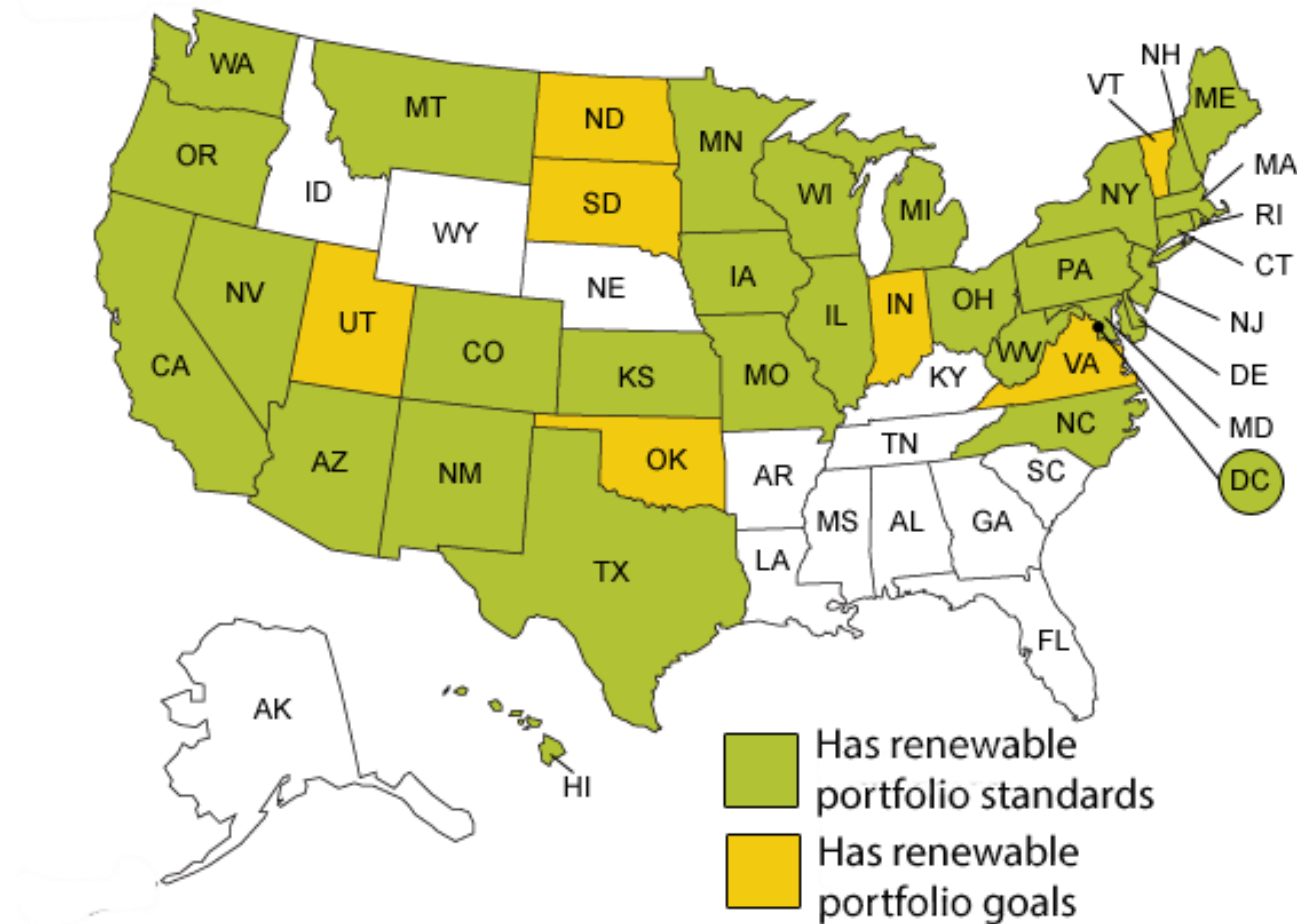


“Like any non-profit, mission driven organization, we are in the business of putting ourselves *out* of business. We are working towards a world where PECO is selling 100% renewable electricity and PGW is supplying 100% RNG as soon as possible.”

- Ronald Fisher, Executive Director

Renewable Mandates & RECs

Renewable Portfolio Standard (RPS) Map



Pennsylvania Alternative Energy Portfolio Standard (AEPS)

- Established 2004 by the PA legislature

Tier 1 8% by 2021	<ul style="list-style-type: none">▪ Photovoltaic energy, solar-thermal energy, wind, low-impact hydro, geothermal, biomass, wood pulping and manufacturing byproducts from energy facilities within the state▪ Biologically-derived methane gas, coal-mine methane, and fuel cells
Tier 2 10% by 2021	<ul style="list-style-type: none">▪ Waste coal, distributed generation (DG) systems less than 5 MW in capacity, demand-side management, large-scale hydro, municipal solid waste, wood pulping and manufacturing byproducts from energy facilities located outside the state▪ Useful thermal energy and integrated gasification combined cycle (IGCC) coal technology

Pennsylvania AEPS vs. New Jersey RPS

Pennsylvania

- AEPS requires:
 - 8% from Tier I by 2021
 - 10% from Tier II by 2021
 - 0.5% from solar by 2021
- 22nd in the nation in solar energy production
- Solar portfolio contribution: 0.24%
- 4,219 jobs in solar
- Solar installed: 420.19 MW

Source: <https://www.seia.org/state-solar-policy/pennsylvania-solar>

New Jersey

- RPS requires:
 - 50% from Class I by 2030
 - 10% from Tier II by 2030
 - 5.1% from solar by 2030
- 6th in the nation in solar energy production
- Solar portfolio contribution: 4.17%
- 6,410 jobs in solar
- Solar installed: 2,732.87 MW

Source: <https://www.seia.org/state-solar-policy/new-jersey-solar>

What the Heck Are RECs?

- No matter how generated, all electricity—whether from renewable or other sources—is delivered over one set of cable and wires—the transmission and distribution system commonly called the “grid”.
- A Renewable Energy Certificate (REC) acts as a tracking and accounting mechanism for solar, wind, and other renewable energies as they flow through the power grid to homes and businesses.
- Once electricity is generated, all the electrons look the same – you can’t tell where they’re from. RECs act as a birth certificate to let us know they were generated by the wind, the sun, or other renewable sources.

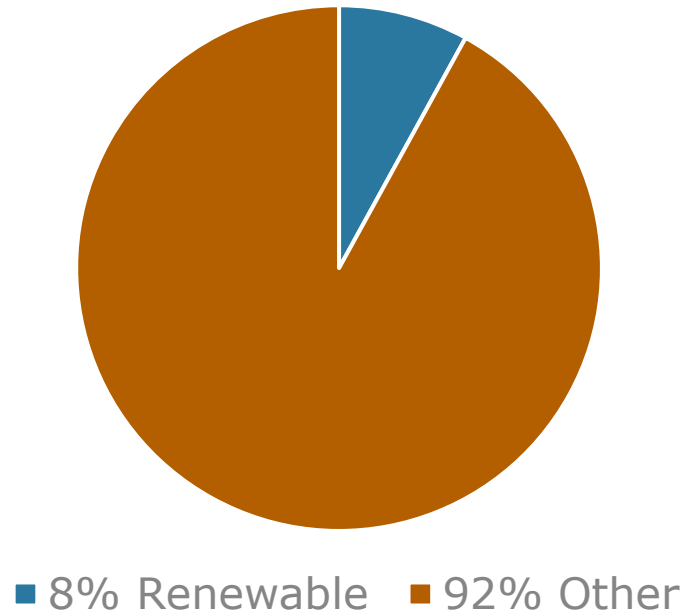
The Life of a REC



Electricity: The Energy Co-op Difference

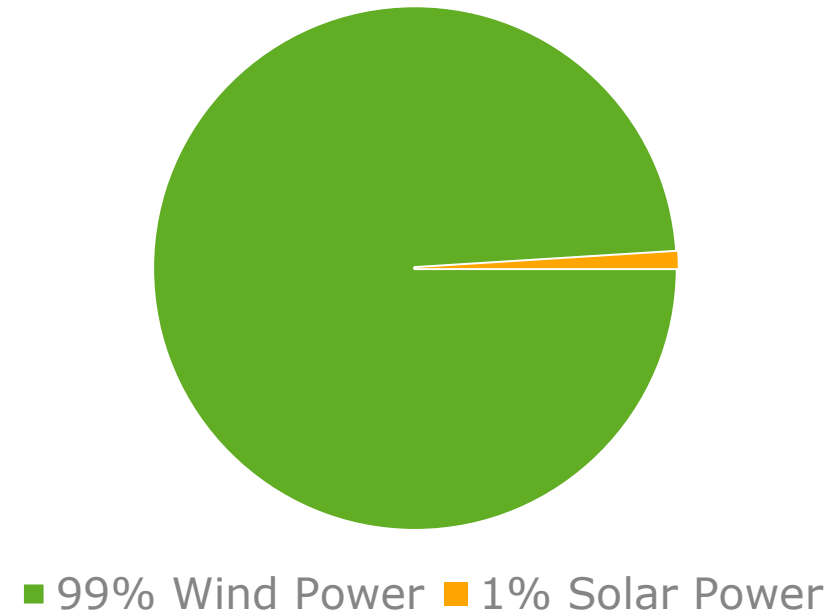
Pennsylvania - Mandatory

Pennsylvania Grid Mix



The Energy Co-op - Voluntary

The Energy Co-op



Let's Talk about RNG!

Chat!

What are the
consequences of drilling
and fracking?

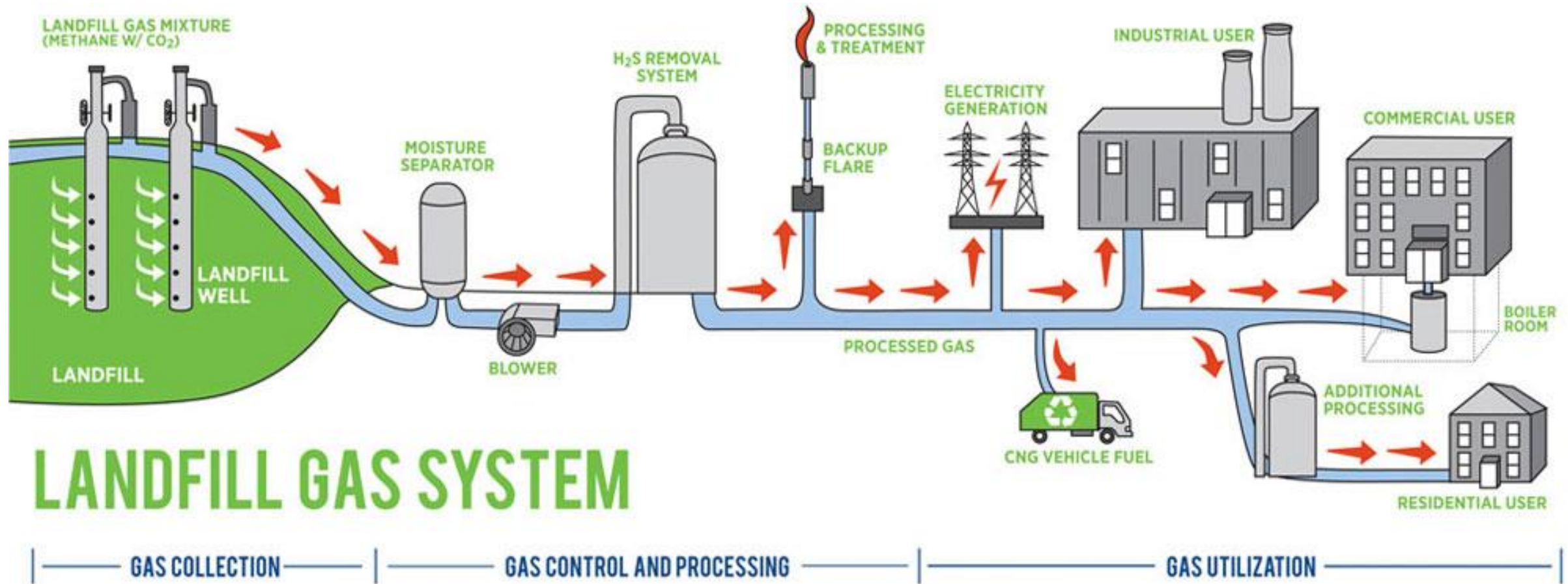
To: **Everyone** ▾ [More ▾](#)

Type message here...

What's Renewable Natural Gas?

- Renewable Natural Gas (RNG)
 - RNG = biogas formed by decomposition of organic matter
 - Produced at landfills, wastewater, agricultural waste treatment facilities
 - Methane = primary component, same as conventional natural gas
- If not collected and recovered, leaked biogas results in over **30x** more carbon released into the atmosphere than combusted gas
- Even if collected and recovered, biogas is sometimes flared, wasting its energy
- But RNG can be used just like conventional natural gas but collected and recovered without drilling or fracking

How is RNG made?



How is RNG Used?

- Industrial
- Electricity generation
- Transportation
- Heating
- Cooking

Gas Renewable Portfolio Standards (RPS) Map



- States with RNG Mandate
- States without RNG Mandate

Image Source: <http://www.jimpoz.com/project50/State:California>
Information Source: <http://www.rngcoalition.com/policies-legislation-1>

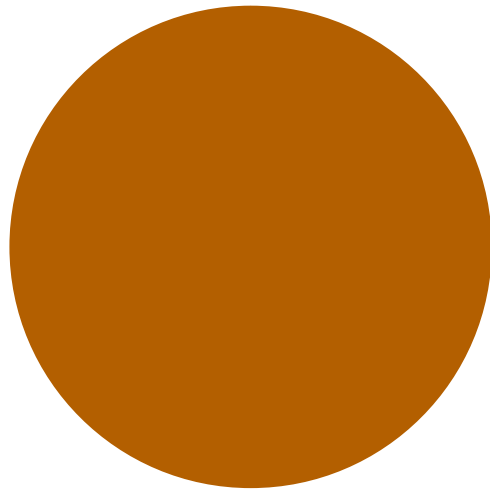
Where is RNG Mandated?

- California's low carbon fuel mandate - 2018
 - ▣ Requires a reduction in the carbon intensity of transportation fuels sold, supplied, or offered for sale by at least 10% by 2020, including by:
 - Improving refinery efficiency
 - Sequestering carbon
 - Including RNG in fuels

RNG: The Energy Co-op Difference

PA's RNG Mandate – 0%

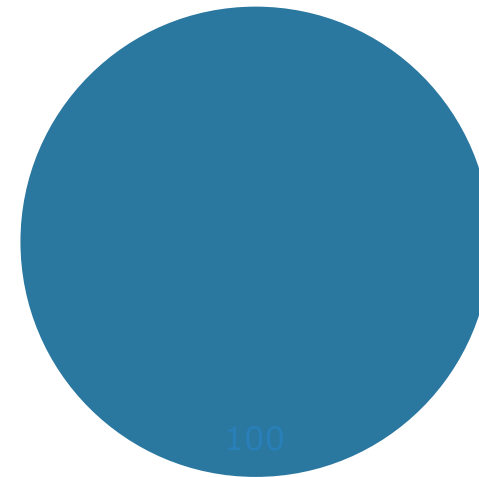
Pennsylvania Gas Mix



■ Conventional Natural Gas

The Energy Co-op's Voluntary Standard – 100%

The Energy Co-op



■ Renewable Natural Gas

How Does The Energy Co-op Supply RNG?

- 1) We purchase RNG credits from landfills that process and inject biogas into gas distribution systems
- 2) We purchase RECs from landfills that process biogas and use it to generate electricity

Our RNG Program

RNG with The Energy Co-op

□ The Energy Co-op brought RNG to Philadelphia!

2015

- Became the first supplier of RNG to PECO gas customers

2020

- Expanded to PGW territory, becoming the first supplier of RNG in Philadelphia

How Does It Work?

- When you enroll in The Energy Co-op's RNG program, we become your gas supplier. The utility (PECO or PGW) is still your distributor
- We supply RNG, and the utility delivers it. For every CCF of gas you use, your money supports the capture, processing, and use of biogas methane from organic waste facilities like landfills
- There is no interruption of service. You'll just see The Energy Co-op listed as your supplier on your gas bill within 1-2 billing cycles
- In the last 12 months, the average Energy Co-op member paid an extra 73-76¢/day for RNG

Benefits of The Energy Co-op's RNG Program

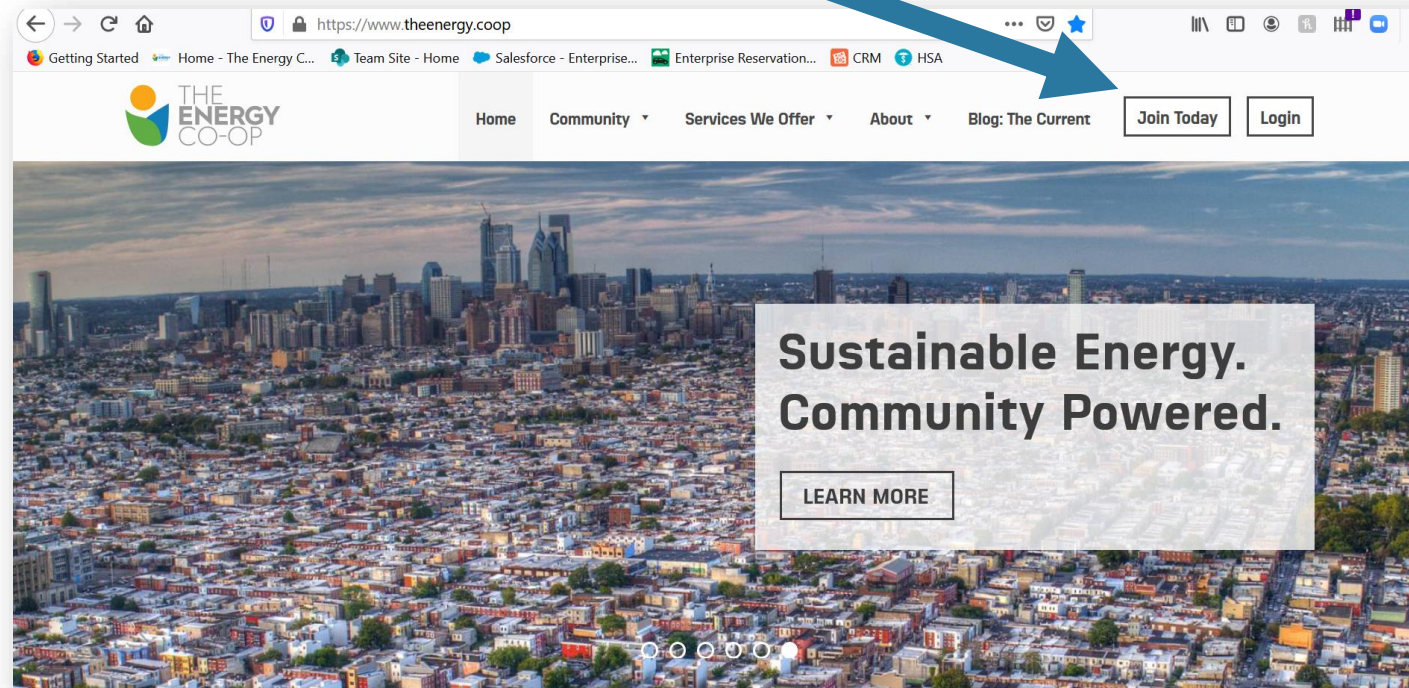
- ❑ No drilling or fracking
- ❑ No flaring or waste
- ❑ Sustainable natural gas resource
- ❑ Creates sustainable energy jobs in PA and elsewhere
- ❑ Rewards sustainable energy investment in PA and elsewhere
- ❑ Advances our region's transition to a sustainable energy future

Why is a Nonprofit Cooperative First to Supply RNG?

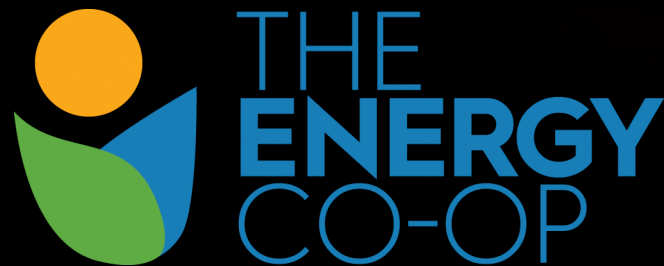
- RNG is not a profitable program yet; doesn't currently make business sense for for-profit entities to offer RNG to residential consumers
- As a member-owned nonprofit, we provide RNG simply because our members want a sustainable alternative to conventional natural gas
 - By signing up for RNG, you become a member of The Energy Co-op, granting you a vote at our Annual Member Meeting to elect our Board of Directors
- “Our members tell us what they want. As more and more people became educated about clean air issues, about climate change issues, our members and the community at-large are demanding more and more sustainable, clean energy.” – *Ronald Fisher, Executive Director*

Sign-up for RNG!

- Enroll online at [theenergy.coop](https://www.theenergy.coop)
- Call 215.413.2122



Thank You!



Ronald Fisher
Meryl Sands
The Energy Co-op
1315 Walnut Street #1000
Philadelphia, PA 19107
215.413.2122