



Renewable Natural Gas

Ronald Fisher and Meryl Sands

The Energy Co-op's Sustainable Energy Solutions

- Nonprofit, cooperative model
 - Member-owned
 - We innovate in ways that corporations can't
- A leader of today's **renewable energy evolution.**
 - 1998 – First supplier of renewable electricity in Southeastern PA
 - 2015 – First supplier of Renewable Natural Gas
 - 2020 – First supplier of RNG to Philly, through PGW expansion



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COMMUNITY ENERGY PHILADELPHIA SUSTAINABILITY

PLAN PHILLY

Renewable natural gas? Yes, it's a thing, and now Philly residents can get it

By Cecilia Jaramilla - January 21, 2020

THE PHILADELPHIA CITIZEN SUPPORT THE CITIZEN

WHAT HAPPENED, WHAT IT MEANS, AND WHAT YOU CAN DO ABOUT IT

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JANUARY 26, 2020

Renewable natural gas is now available to Philly residents

The alternative fuel, also known as biogas, is captured from landfills, water treatment plants, and other waste facilities

BY ALLIE MILLER PhillyVoice Staff

ONE MAN'S TRASH...

The Energy Co-op in Mount Airy turns Philly's garbage into renewable energy. Now it's available to all Philadelphians

RENO MAY 12, 2020

Drive past one of Philly's landfills, and you'll likely note the typical contents of a dump—rotting food, old couch cushions, stray plastics, aluminum cans—along with the stench of decomposing trash seeping into the atmosphere. You'll see, in other words, garbage.

Members of Philly's Energy Co-op, however, don't just see garbage. They see the beginnings of an eco-conscious way to heat their homes—and now, they have a way for all Philadelphians to use it.

The Mount Airy-based co-op takes decomposing waste from organic materials found at landfills, wastewater treatment plants and other waste facilities and turns it into fuel people and businesses can use to heat buildings, and for other energy needs.

Renewable natural gas (RNG), otherwise known as biomethane or biogas, uses the city's existing gas grid and can be used to power appliances, such as gas stoves, without any updates.

The Energy Co-op is currently the only provider of renewable natural gas in the city; other green gas programs in the city use traditional gas and purchase carbon offsets on the user's behalf.

The Energy Co-op buys natural gas from waste plants that capture methane from food waste, plant materials, sewage, agricultural waste and other organic materials, and then sells it to consumers. The arrangement encourages landfills to reuse the waste, so it doesn't contribute to pollution.

weavers waycoop MARKET

THOM CARROLL/PHILLYVOICE

The Energy Co-op – a subsidiary of the popular Weavers Way Co-op in Philly – is renewable natural gas available to Philly area residents. The alternate fuel option is available to all PGW and PECO customers, whether or not they are co-op members.

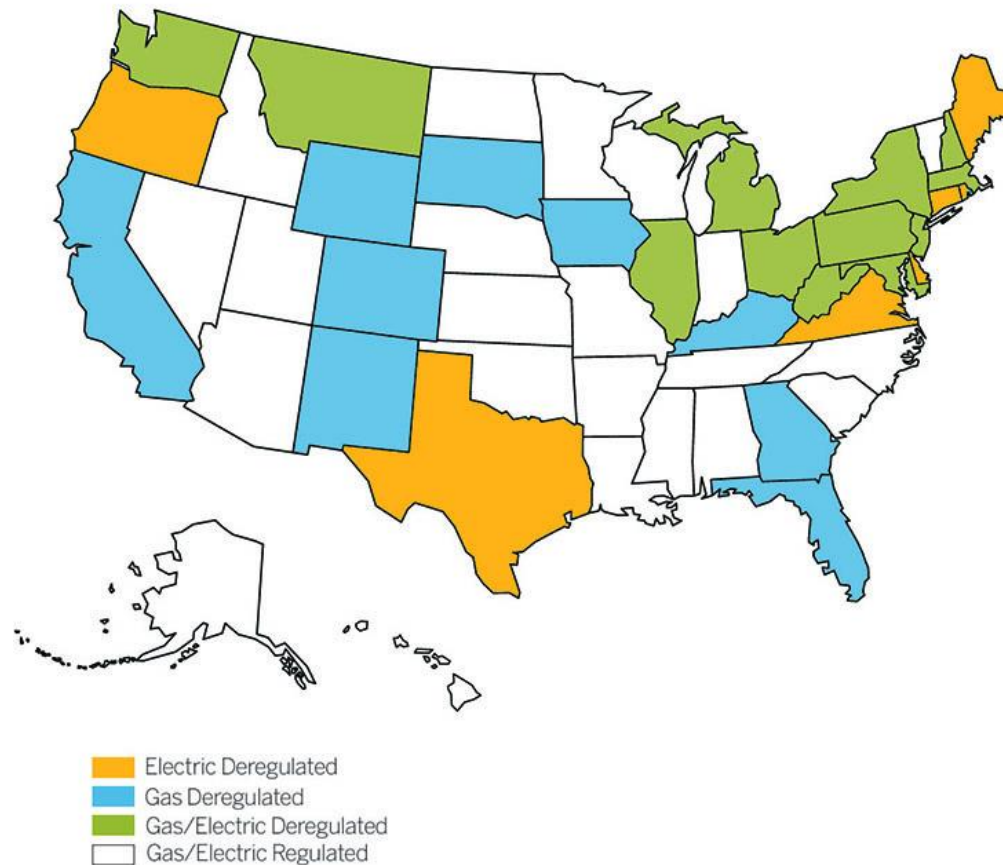
Renewable natural gas is now an alternate fuel option for all PGW and PECO customers.

The service is available through The Energy Co-op, a cooperative started by the city's popular Weavers Way Co-op in 1979. Previously, renewable natural gas from The Energy Co-op had only been available to co-op members, but the program is expanding.


Energy Choice

Energy Market Regulation Status Map

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.

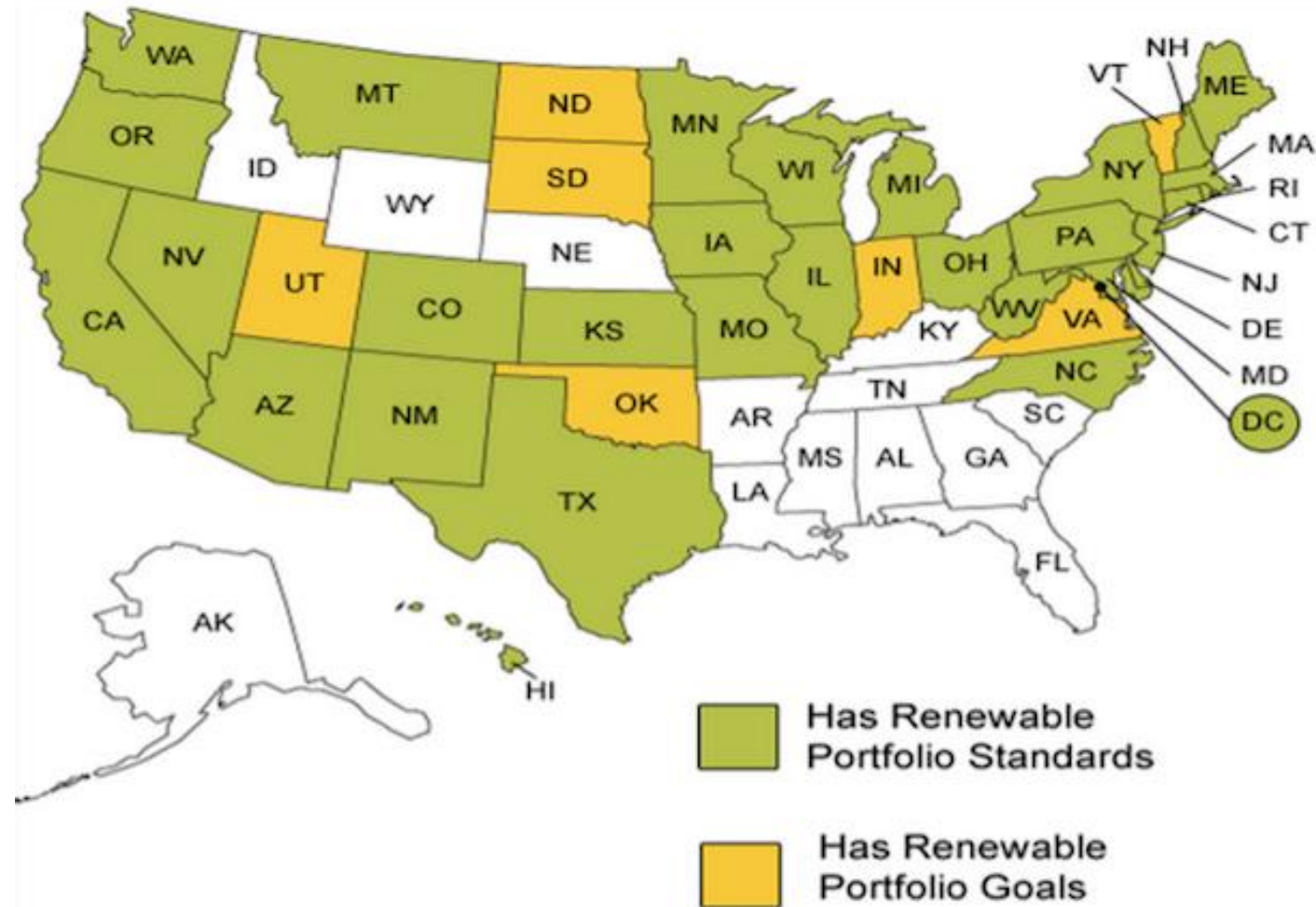


“Like any non-profit, mission driven organization, we are in the business of putting ourselves out of business. We are working towards a world where PECO is selling 100 percent renewable electricity and PGW is supplying 100 percent RNG as soon as possible.”

-Ronald Fisher, Executive Director

Renewable Mandates & RECs

Renewable Portfolio Standard (RPS) Map



Pennsylvania Alternative Energy Portfolio Standard (AEPS)

- Established 2004 by the PA legislature
- Two tiers, requires 8% from the first and 10% from the second by 2021
 - Tier I: 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 II: (new and existing) 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%
- 4219 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%
- 6410 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?

- A Renewable Energy Certificate (REC) acts as an accounting or tracking mechanism (like currency) for solar, wind, and other green energies as they flow into the power grid.
 - Source: <https://www.investopedia.com/terms/r/rec.asp>
- REC markets were created by state law to provide the mechanism for electricity suppliers to satisfy the RPS mandates.

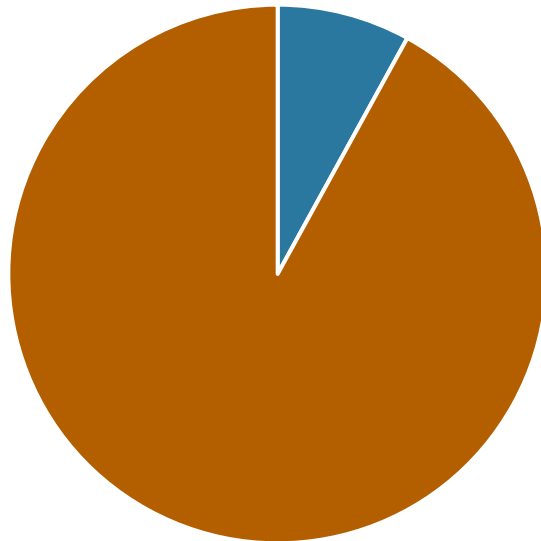
How do RECs work?



Electricity: The Energy Co-op's Difference

PA's Renewable Electricity Mandate

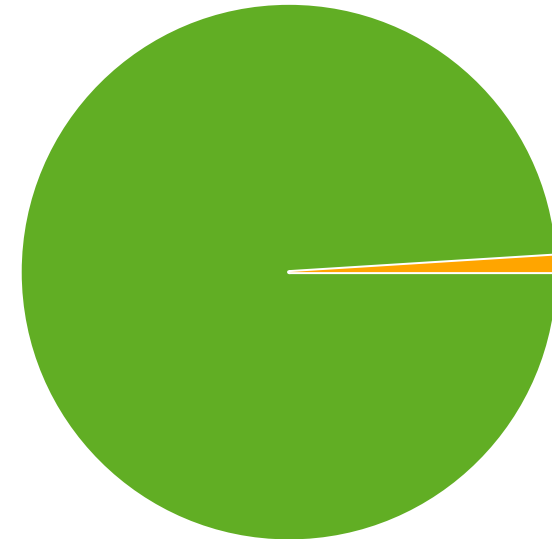
Pennsylvania Grid Mix



■ Renewable ■ Dirty

Renewable Electricity Supply with The Energy Co-op

The Energy Co-op



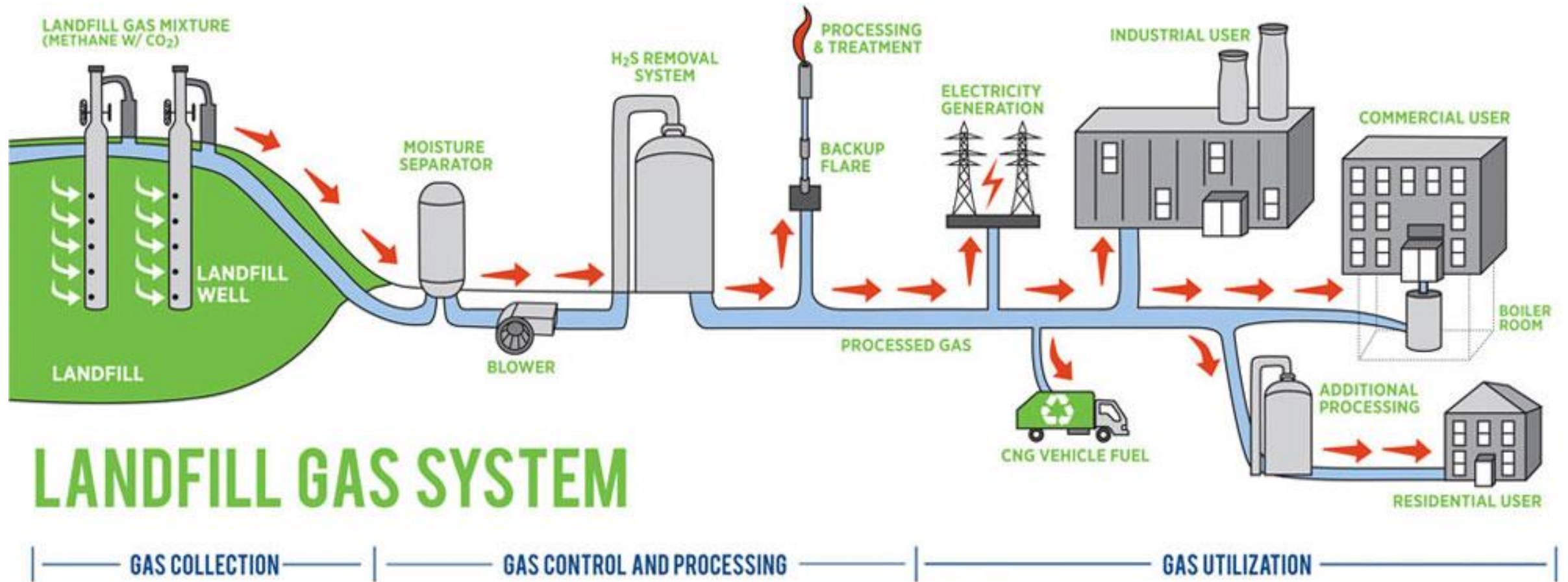
■ Wind Power ■ Solar Power

Now, let's talk about RNG

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 30x more carbon released into the atmosphere than combusted gas.
- Even if collected and recovered, biogas is sometimes flared, wasting its energy.
- RNG can be used just like conventional natural gas but collected and recovered without drilling or fracking.

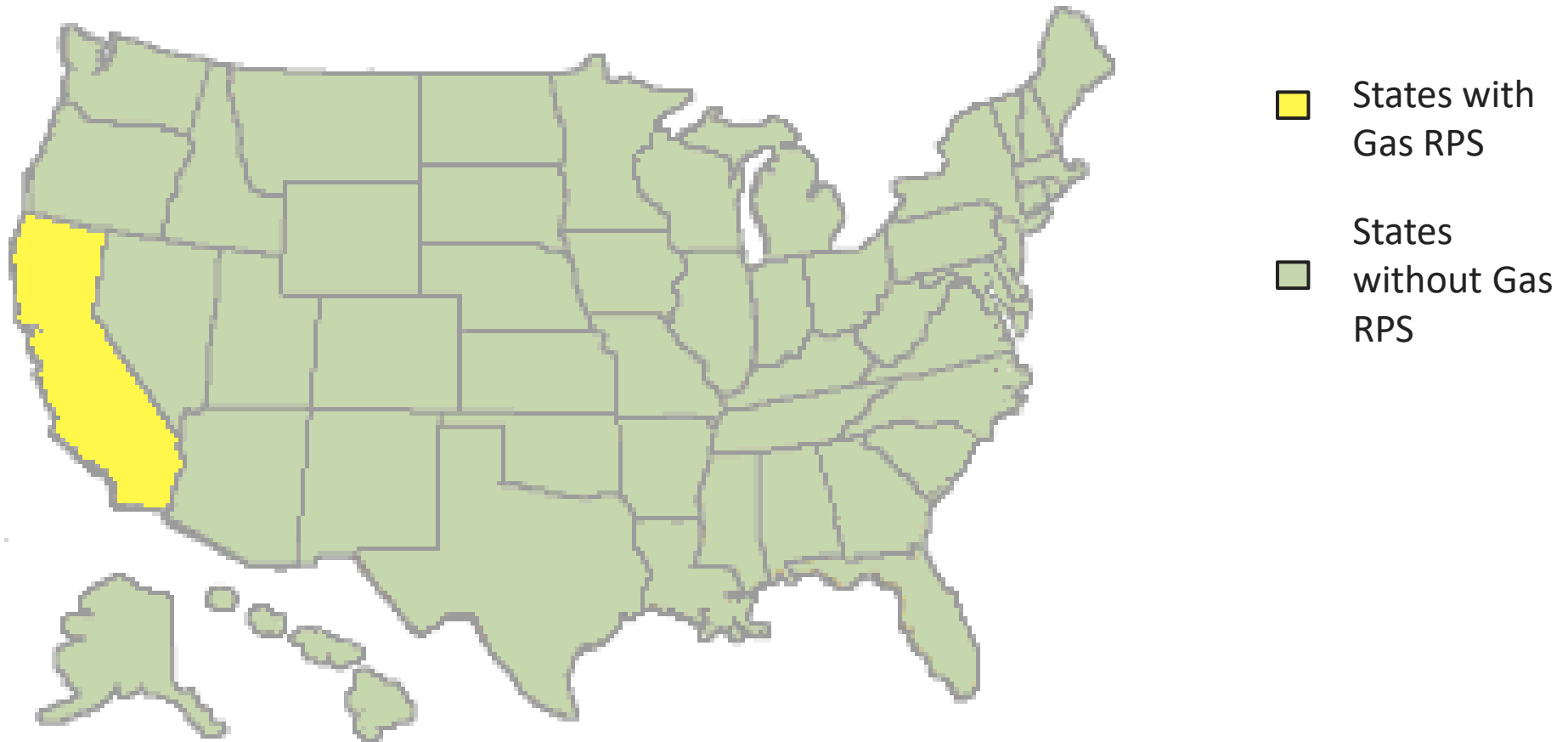
How is RNG made?



How is RNG used?

- Industrial
- Electricity generation
- Transportation
- Heating
- Cooking

Gas Renewable Portfolio Standards (RPS) Map



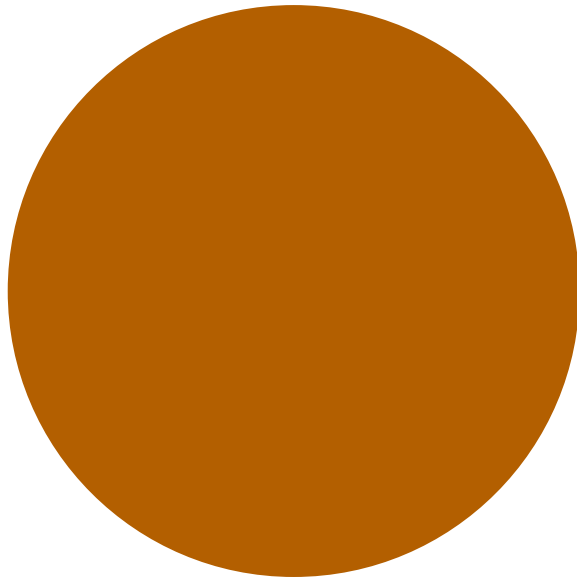
Where is RNG mandated?

- California's low carbon fuel mandate - 2018
 - requires oil companies to cut the carbon content of their fuel 10 percent by 2020, through:
 - making their refineries more efficient
 - sequestering carbon
 - buying RNG

RNG: The Energy Co-op's Difference

PA's Gas Renewable Portfolio Standards

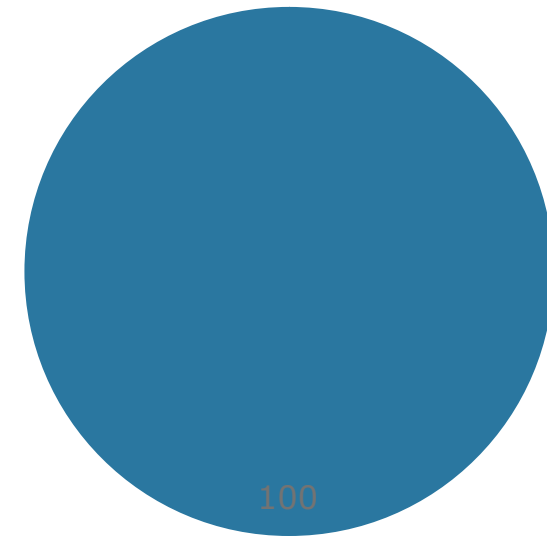
Pennsylvania Gas Mix



■ Conventional Natural Gas

RNG with The Energy Co-op

The Energy Co-op



■ Renewable Natural Gas

How do we supply RNG?

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

Our 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 RNG, we become your gas supplier. The utility (PECO or PGW) is still your distributor.
- We supply the gas from RNG, and the utility delivers it. For every ccf of gas you use, your money is going to RNG from landfill methane.
- There is no interruption of service when you switch, you'll just see The Energy Co-op as your supplier on your gas bill within 1-2 billing cycles.
- The average household will pay 60-75¢/day more for RNG.

The Benefits of The Energy Co-op's Renewable Natural Gas Program

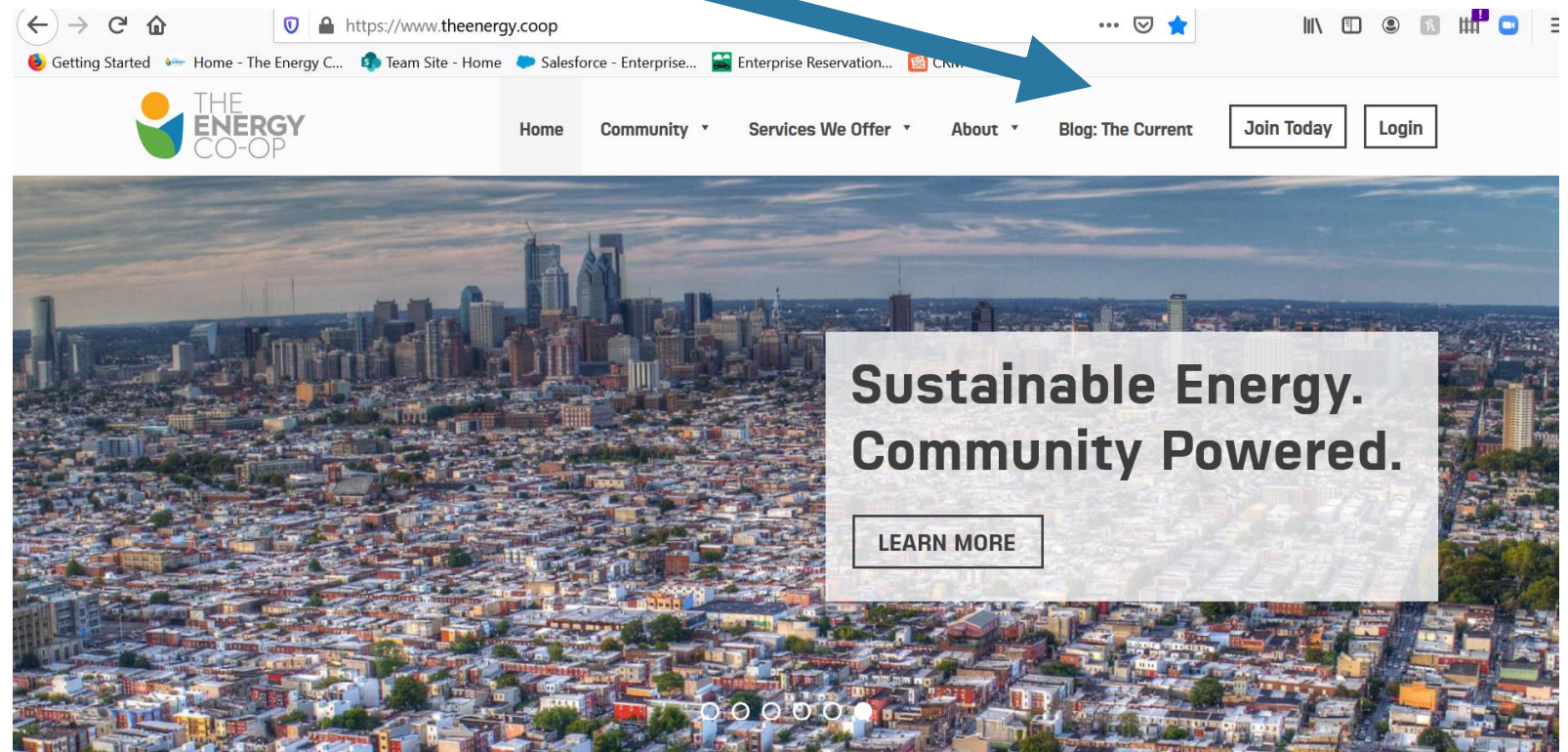
- No drilling
- No fracking
- No flaring
- Supports the development of RNG projects
- Sustainable natural gas resource

Why is a Co-op the first to provide RNG?

- RNG is not a profitable program yet; it wouldn't currently make business sense for a corporation to offer RNG.
- As a member-owned nonprofit, we can provide RNG simply because our members want it.
 - 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 Members.
- “Our members really 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 green energy.” – Ronald Fisher, Executive Director

Sign Up for RNG from The Energy Co-op!

- Enroll online [here](#)
- Call 215.413.2122



Thank You!



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