



Renewable Natural Gas

Meryl Sands

Intro

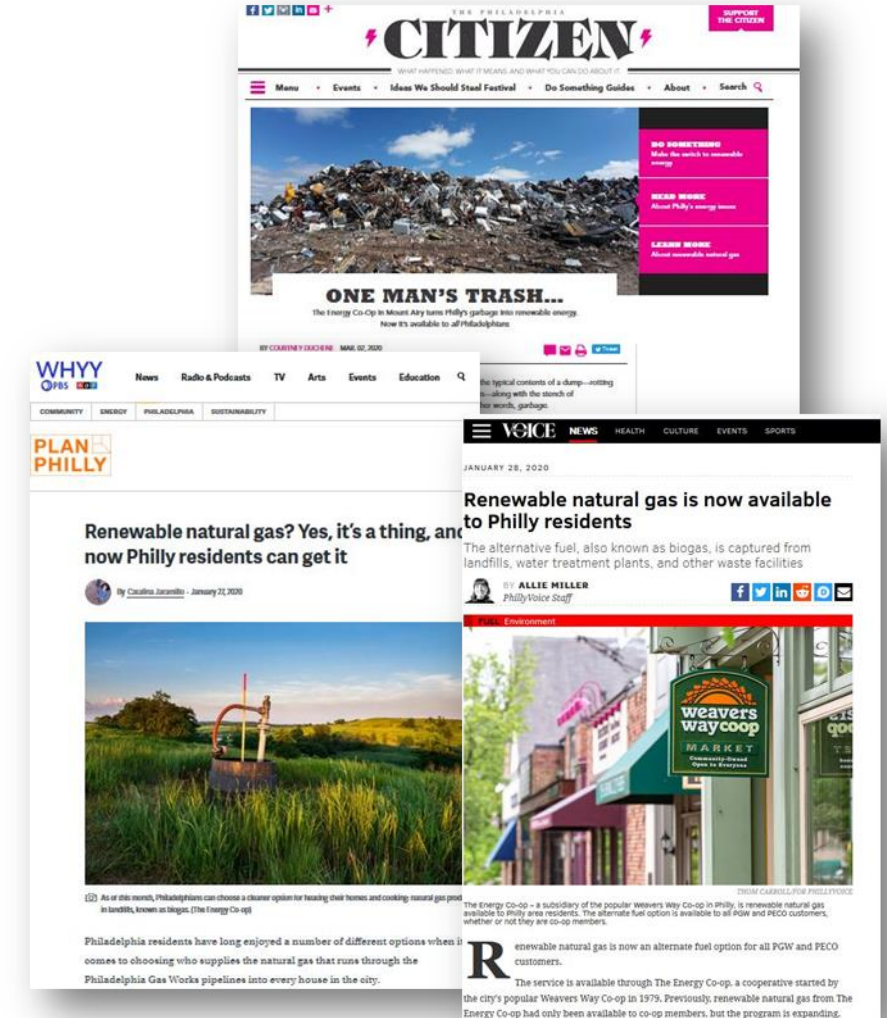
The Energy Co-op's Sustainable Energy Solutions

□ 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



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

Intro

Energy Choice

Renewable Mandates

RNG Mandates

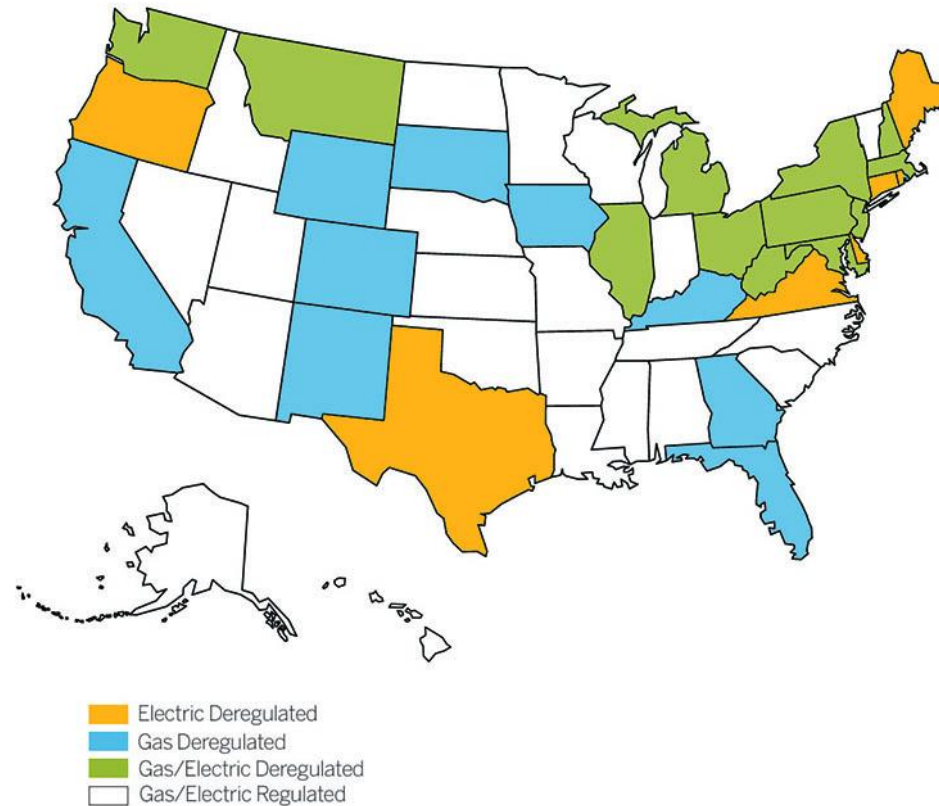
Our RNG Program

The Future of RNG

Energy Choice

What's Deregulation?

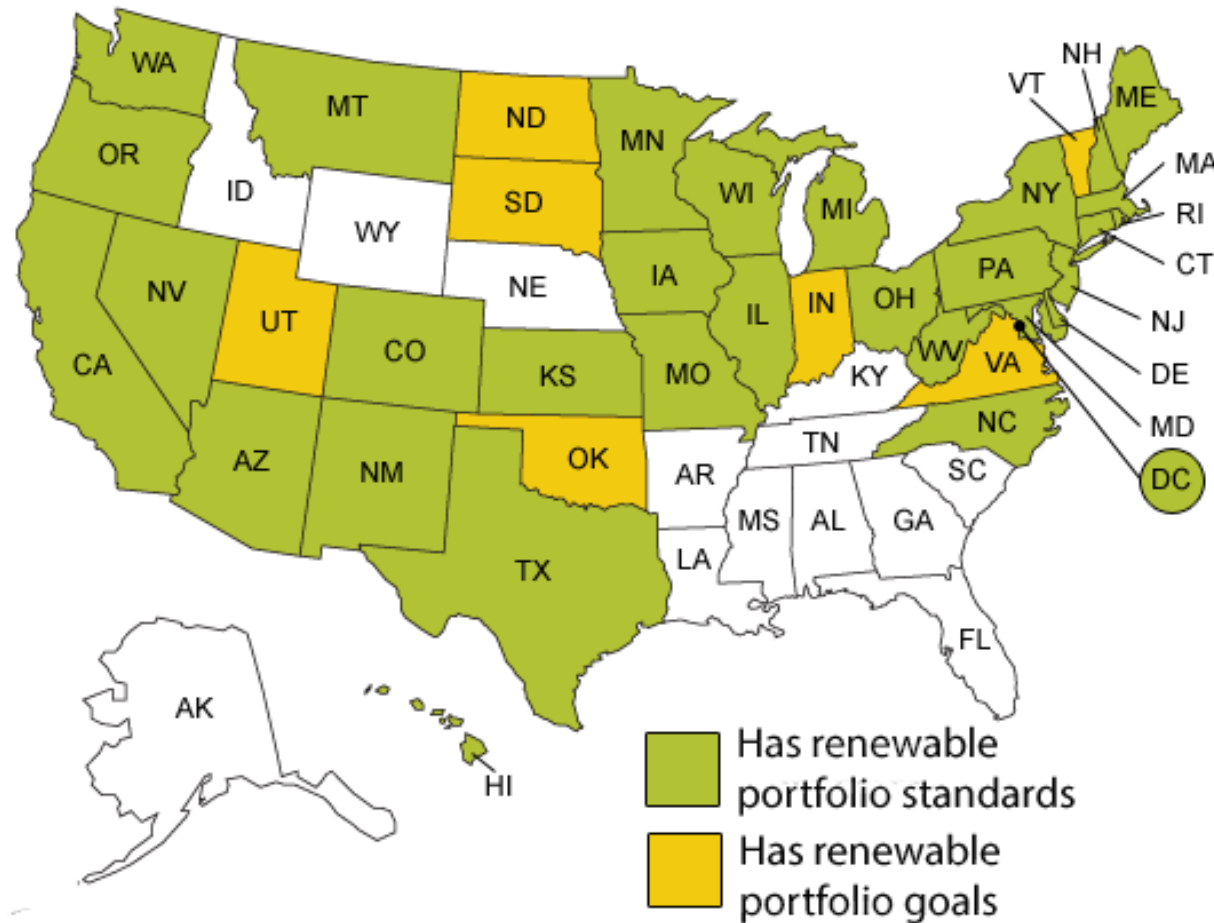
In a regulated energy market (no retail choice), the utilities are vertically integrated monopolies that generate energy as well as providing distribution and transmission.



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.

Source: <https://www.sparkenergy.com/energy-regulation-by-state/>

Renewable Mandates



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

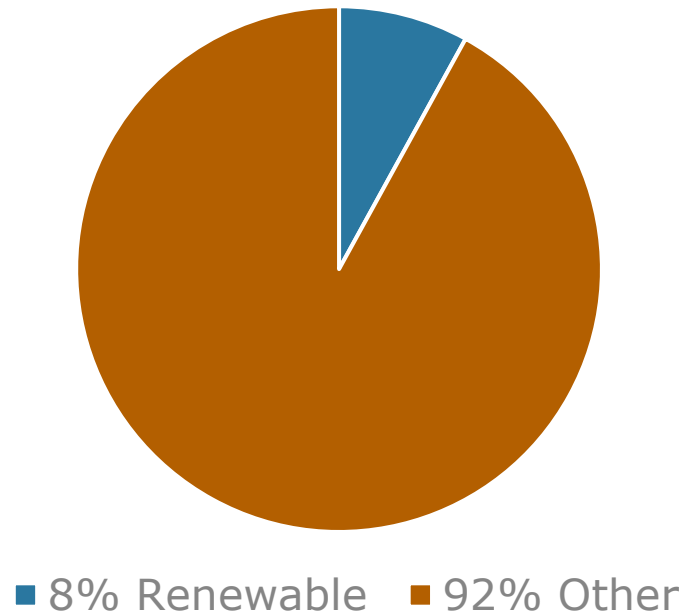
Source: <https://www.seia.org/state-solar-policy/new-jersey-solar>

Electricity: The Energy Co-op Difference

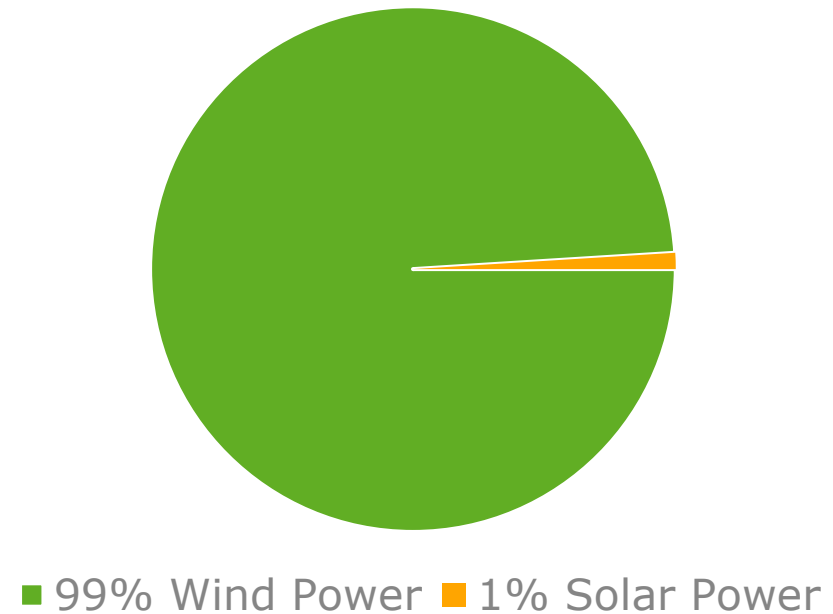
Pennsylvania's Mandate – 8%

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

Pennsylvania Grid Mix

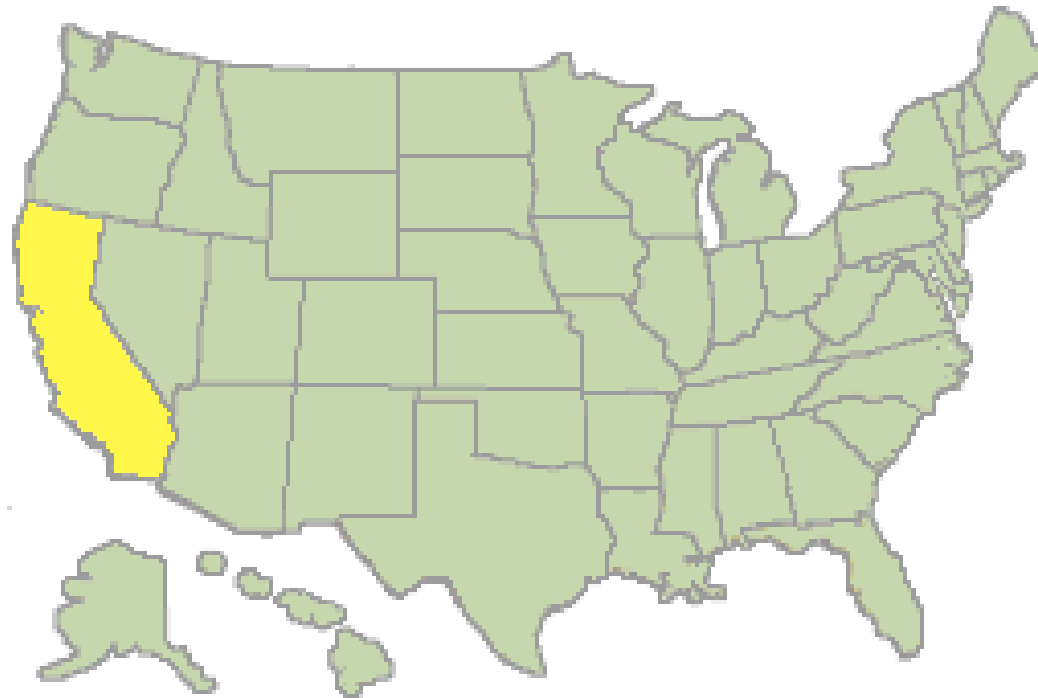


The Energy Co-op



RNG Mandates

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>

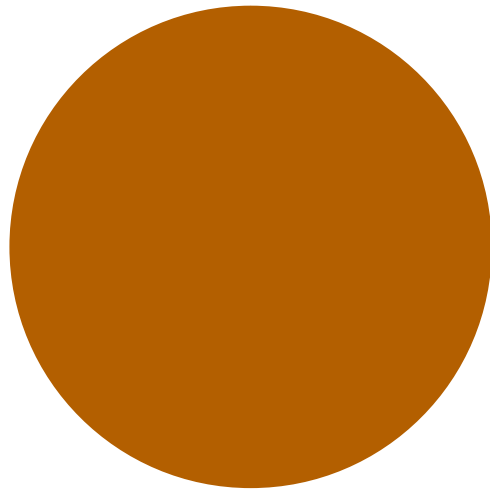
Where is RNG Mandated?

- 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%

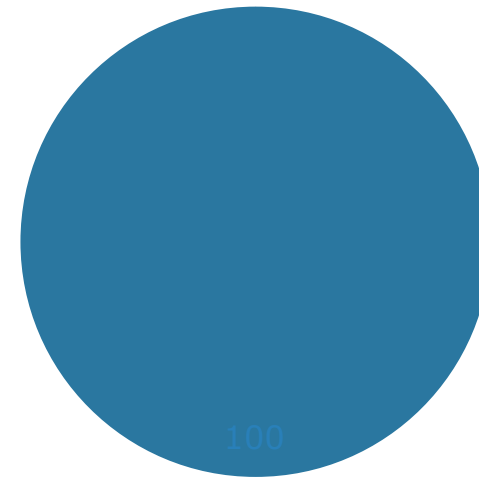
Pennsylvania Gas Mix



■ 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 someone enrolls in The Energy Co-op's RNG program, we become their gas supplier. The utility (PECO or PGW) is still their distributor
- We supply RNG, and the utility delivers it. For every CCF of gas they use, their money supports the capture, processing, and use of biogas methane from organic waste facilities like landfills
- There is no interruption of service. The RNG Program member simply sees The Energy Co-op listed as their supplier on their gas bill within 1-2 billing cycles
- Current rates per ccf:
 - Please note that the rates below are subject to change on a monthly basis
 - PECO - \$0.695
 - PGW - \$0.650

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

The Future of RNG

Why is a Nonprofit Cooperative First to Supply RNG?

- It 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

The Future...

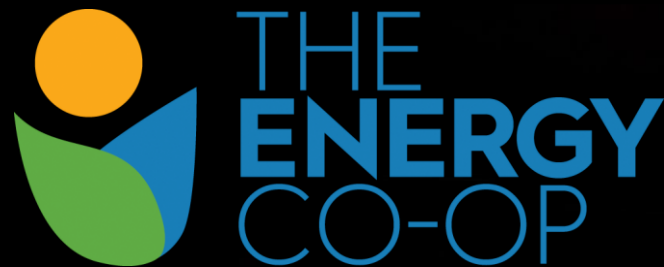
□ Farm-to-Market RNG

- Biogas recovered from Livestock Manure Programs currently costs more than 10x the price of RNG from landfills
- We are reviewing the possibility of offering a hybrid alternative—for example, 10% ag-generated biogas + 90% landfill biogas
- Legislative mandates could lower the price

Q&A

Questions?

Thank You!



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