U.S. EPA’s State and Local Energy and Environment Webinar Series

Using Renewable Energy Certificates (RECs) to Achieve Local Environmental Goals

April 27, 2021
2:00 PM Eastern

Three audio options:
1. Listen via computer
2. Call-Me Feature
3. Dial 1-415-655-0002 or 1-855-797-9485
Event number: 185 487 2344
Screen View

- There are several layout options
- We recommend the side-by-side view
We’ll use three panels

- Participants, Polling, and Question & Answer (Q&A)
- Use the arrow to expand or collapse the panels

Adding Panels

- If some panels don’t appear, hover over the bottom of the screen and select the desired panels
- Select More Options (…) for additional panels
- Blue icons indicate active panels
Polling and Feedback

Polling
- We’ll ask several poll questions during the webinar
- The polling panel will appear when we open the first poll
- Select your desired response and hit “Submit”

Webinar Feedback
- A feedback form will pop-up when you exit today’s webinar
Q&A

- Participants are muted
- Questions will be moderated at the end
- To ask a question:
  1. Select “All Panelists” from the drop-down menu
  2. Enter your question in the Q&A box
  3. Hit “Send”
- EPA will post final materials on the Webinar Series page: www.epa.gov/statelocalenergy/state-local-and-tribal-webinar-series
Today’s Agenda

- **David Tancabel**, U.S. Environmental Protection Agency (EPA)
- **James Critchfield**, U.S. EPA
- **Carole Collins**, City of Greenfield, Massachusetts
- Question and Answer Session

The views expressed by speakers on this webinar are solely those of the participants and EPA does not endorse any products or commercial services mentioned in this webinar.
Introduction and Overview of EPA’s Renewable Energy Certificates Primer

David Tancabel
Local Energy and Environment Policy Analyst

U.S. Environmental Protection Agency
Which best describes your organization’s experience with RECs?

- We already sell or purchase RECs
- We are arranging to generate or purchase RECs
- We are considering options to generate or purchase RECs
- We have no plans to generate or purchase RECs
- I am unsure of my organization’s experience or plans

Poll 1
Clean Energy Finance Series

- Green Banking Strategies for Local Governments
- On-bill Financing
- Using Renewable Energy Certificates to Achieve Local Environmental Goals
- Clean Energy Finance Tool (CEFT)

www.epa.gov/statelocalenergy/clean-energy-financing-tools-and-resources-local-governments
Using Renewable Energy Certificates to Achieve Local Environmental Goals

- Overview
- How RECs work
- Purchasing RECs
- Self-Generating RECs
- Examples of Local REC Strategies
- Examples of Using RECs
- Resources

www.epa.gov/statelocalenergy/clean-energy-financing-tools-and-resources-local-governments
Renewable Energy Certificates
Overview

What are RECs?

- Renewable energy has two distinct components
  - Physical electricity
  - Environmental and social attributes (non-power)
- RECs are different from “carbon offsets”

Types of RECs

- **Bundled**: Electricity and RECs sold together
- **Unbundled**: Electricity and RECs sold separately
- Technology specific RECs
How do RECs work?

- How to claim the environmental and social benefits of RECs?
  - An end-user must own and retire the REC

- Compliance with legal mandates
  - Renewable portfolio standards (RPS)
  - Local government intending to go above and beyond legal mandates would need to own and retire RECs
Purchasing RECs

- Purchased directly along with electricity
  - Power purchase agreement (PPA) directly with wind or solar developers
    - Usually for long-term period (10-20 years)
  - “Retail choice” markets
    - PPA with the local electricity supplier
  - Community choice aggregation (CCA)
    - Requires legislation and setting up a not-for-profit entity
- Intermediaries (REC retailers or brokers)
Benefits of Purchasing RECs

- Ability to demonstrate use of renewable electricity regardless of options at the local level
- Flexibility to maintain existing electricity procurement contracts
- Customizable renewable energy criteria
- Stronger purchasing power
Self-Generating RECs

- **Example**: Installing solar panels on municipal facilities

- **Self-generating RECs provides options:**
  - Retain the RECs
  - Sell RECs to a third party and claim the use of the average grid generation
  - Sell RECs to a third party and purchase replacement RECs from another resource or supplier
    - “REC Arbitrage”
Examples of Local REC Strategies

- Adopting local resolutions
- Establishing local renewable portfolio standards
- Raising awareness
- Providing Support
Examples of Using RECs

- Houston, Texas
  - RECs supplied through competitive electricity supplier and offsite PPAs
  - Nearly 90% of local government electricity usage

- Washington, DC
  - Self-generating and selling RECs
  - Neighborhood Solar Equity project
    - Uses proceeds from solar REC (SREC) sales to benefit low-income residents

- Greenfield, MA
  - Carole Collins, Director of Energy and Sustainability
Resources

- EPA Green Power Partnership  
  www.epa.gov/greenpower  
  - Making Environmental Claims  
    www.epa.gov/greenpower/making-environmental-claims

- EPA Toolbox for Renewable Energy Project Development  
  www.epa.gov/repowertoolbox

- Local Government Solar Project Portal  
  www.epa.gov/repowertoolbox/local-government-solar-project-portal

- National Renewable Energy Laboratory Renewable Electricity Fact Sheet  
  www.nrel.gov/docs/fy15osti/64558.pdf

- American Cities Climate Challenge – Renewable Accelerator  
  https://cityrenewables.org/

- Green-e Website  
  www.green-e.org
Contact Information

David Tancabel
Tancabel.David@epa.gov

Access the RECs Primer |
www.epa.gov/statelocalenergy/clean-energy-finance-using-renewable-energy-certificates-achieve-local

Visit Our Website | www.epa.gov/statelocalenergy

Sign Up for Our Newsletter | www.epa.gov/statelocalenergy/state-and-local-energy-newsletters

Join Our LinkedIn Group | www.linkedin.com/groups/12129811/
EPA’s Green Power Partnership

James Critchfield
Green Power Partnership Director

U.S. Environmental Protection Agency
EPA’s Green Power Partnership

James Critchfield, US EPA
April 27, 2021
EPA’s Green Power Partnership

Launched in 2001, EPA’s Green Power Partnership is a free, partnership program that encourages organizations to use green power to reduce the environmental impacts associated with conventional electricity use.

www.epa.gov/greenpower

Partners include:

- Fortune 500 corporations
- Higher education institutions
- Federal, state and local governments
- Small and medium sized businesses
- Non-profits
EPA’s Green Power Partnership

+700 Partners

+70-billion-kilowatt hour (kWh) used annually

+100 Green Power Communities

Partnership accounts for 43% of Voluntary Market

The equivalent electricity use of 6.6 million average American homes

13% of all non-hydro renewable electricity generated in the U.S.
Key Market Principles

• Consumer choice
• Energy attribute certificates (i.e., REC)
• Avoid double counting and double claiming
• Credible claims – consumer protection
• Incremental green power use (surplus to regulation)
• Standards for resource quality and content in North America
Motivations for Using Green Power

• Make a difference / have an impact
• Reduce carbon footprint / climate risk
• Be seen as a leader
• Differentiate product or brand
• Save on one’s electricity expense
• Drive development of new projects
Green Power Supply Options

All green power supply and use is substantiated through REC instruments.

<table>
<thead>
<tr>
<th>Retail Options</th>
<th>Project Specific Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail (Unbundled) RECs</td>
<td>Self-Supply</td>
</tr>
<tr>
<td>Utility Products or Programs</td>
<td>Physical PPAs</td>
</tr>
<tr>
<td>Community Choice Aggregation</td>
<td>Shared Renewables</td>
</tr>
<tr>
<td></td>
<td>Utility Green Tariffs</td>
</tr>
<tr>
<td></td>
<td>Financial Contracts</td>
</tr>
</tbody>
</table>
In 2019, most voluntary sales were via unbundled RECs, while most customers were via community choice aggregation.

Source: National Renewable Energy Laboratory. Note: Utility contracts have a small number of customers (<25) so are not visible on the figure.
## Consumer Access to Green Power

<table>
<thead>
<tr>
<th>Green Power Supply Option</th>
<th>Number of States with Green Power Access</th>
<th>Total Green Power Access by Option</th>
<th>Total Green Power Access Compared to Total US Electricity Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Customers* (Million)</td>
<td>Electricity Sales (Billions of kWh)</td>
</tr>
<tr>
<td>Utility Green Pricing Programs</td>
<td>37</td>
<td>58.3</td>
<td>1097</td>
</tr>
<tr>
<td>Competitive Green Power Marketing Products</td>
<td>19</td>
<td>45.2</td>
<td>1017</td>
</tr>
<tr>
<td>Community Choice Aggregation</td>
<td>7</td>
<td>3.3</td>
<td>9</td>
</tr>
<tr>
<td>Physical Power Purchase Agreements</td>
<td>27</td>
<td>21.8</td>
<td>659</td>
</tr>
<tr>
<td>Financial Power Purchase Agreements</td>
<td>50</td>
<td>0.21</td>
<td>756</td>
</tr>
<tr>
<td>Renewable Energy (Green) Tariffs</td>
<td>16</td>
<td>3.2</td>
<td>76</td>
</tr>
<tr>
<td>Community Solar/Shared Renewables</td>
<td>17</td>
<td>54.3</td>
<td>270</td>
</tr>
<tr>
<td>On-site Generation</td>
<td>48¹</td>
<td>33.7</td>
<td>570</td>
</tr>
<tr>
<td>Retail (Unbundled) RECs²</td>
<td>50</td>
<td>All</td>
<td>All</td>
</tr>
</tbody>
</table>

*Draft Preliminary Findings / 2016 Data*
You are only using RENEWABLE ELECTRICITY when you have both a REC and ELECTRICITY
Resources: Getting Started

Guide To Purchasing Green Power

- Great place to start if you have never purchased green power before
- Authors include EPA, Department of Energy, World Resources Institute, Center for Resource Solutions and National Renewable Energy Laboratory

www.epa.gov/greenpower/guide-purchasing-green-power
Contact Us

James Critchfield
critchfield.james@epa.gov
202-343-9442

www.epa.gov/greenpower
Greenfield Light & Power and RECs

Carole Collins
Energy and Sustainability Director

City of Greenfield, MA
Using Renewable Energy Certificates to Achieve Local Environmental Goals
Greenfield Light & Power and RECs

April 27, 2021
Carole Collins
Director of Energy & Sustainability
City of Greenfield, MA
Greenfield is a small city of 18,000 located in western Massachusetts, the county seat of the most rural county in the state.

As the first Green Community in Massachusetts, looked to municipal aggregation as an untapped vehicle to achieve clean energy goals by providing 100% green electricity to the community.

One of the first communities in Massachusetts to use municipal aggregation to green the supply, now over half the communities in Massachusetts have municipal aggregations that provide different models of green electricity.

Each year, Greenfield Light & Power provides approximately 50-55 million kWh to all rate classes.

Over 65% of residential and about 80% of small commercial and industrial customers participate in Greenfield Light & Power.

Greenfield has avoided over 194 million tons of carbon dioxide (CO$_2$) since 2015.
Municipal Aggregation in Massachusetts

Municipal Aggregation is made possible by:

Restructuring Act of 1997
- Deregulated electricity market and allows anyone to purchase power on the open market from any regulated suppliers to the Commonwealth of Massachusetts

Green Communities Act of 2008
- Authorizes any municipality or any group of municipalities acting together within the Commonwealth to aggregate the electrical load of interested electricity consumers within its boundaries
**Why Municipal Aggregation?**

**Predictability:** Greenfield has negotiated a contract with fixed rates through January of 2024.

**Choice:** The program provides three alternatives to Eversource’s Basic Service and an alternative to other electricity supply offers in the marketplace.

**Renewable energy, cost effectively:** Your electricity is powered by 100% renewable energy, unless you choose the Budget option.

**Transparency:** The program is a City-vetted option with no hidden fees. You may opt out at any time with no penalty. All program terms are public. Electricity prices are fixed by contract, known in advance, and posted.
How Does Electricity Service Work Now?

50% +/- for Supply

Purchase of electricity

50% +/- for Delivery
- Mass Save (energy efficiency program)
- maintenance of poles and power lines
- meter reading
- billing
How REC Usage has Evolved for Greenfield

- Initially used ‘light green’ RECs from older hydropower projects in Maine (ineligible for EPA Green Power Partnership) to provide 100% green electricity with minimal cost premium.
- In 2017, started using newer RECs that were eligible for the EPA Green Power Partnership and Greenfield became a member.
- In 2019, Greenfield added a “Local Green” Option comprised of 100% Class I RECs – the greenest RECs available in MA from newer New England based renewable energy projects and helps support further renewable energy development in Massachusetts and New England.
- In 2021, the standard option was modified to include 5% Class I RECs as part of the 100% green electricity. Since these RECs are more expensive, the remainder of the RECs are from National Wind, in order to keep prices competitive.
- 2021 also saw the introduction of a “Budget” option, electricity made up of the minimum required RECs (18%) and responds to members of the community with limited budgets. This is an opt-in product.
Current Greenfield Light & Power Offerings

Cleaner electricity and consumer-friendly choices

You may choose between three options in Greenfield Light & Power:

1. **Standard**: Provides electricity that is 100% from renewable sources, primarily wind projects outside of New England. Standard is default program offering, which means new participants will be automatically enrolled in Standard if another option is not chosen.

2. **Local Green**: Provides electricity that is 100% from "premium" renewable sources in the New England region. By opting up to Local Green, you increase the demand for renewable energy produced in New England, which drives the development of new renewable energy projects on the New England power grid.

3. **Budget**: Provides only the minimum amount of your electricity required by law from renewable sources, but is the least expensive option in the program.

- **Standard (default)**: 100% renewable electricity
  - 9.879 ¢/kWh

- **Local Green (option)**: 100% renewable electricity from New England
  - 13.281 ¢/kWh

- **Budget (option)**: Only the minimum amount of renewable electricity required by law
  - 9.629 ¢/kWh
Using RECs to Benefit the Community

In Massachusetts, the SREC market was oversupplied for a few years, so we negotiated with our supplier to purchase all their required RPS RECs from local Greenfield projects first, and supplement with regional renewable projects to fulfill their obligation. This helped guarantee the purchase of locally produced renewable energy when many RECs were not being purchased at auction. This also dovetailed with a Greenfield Solar Challenge Program that added 500-kilowatt of Greenfield citizen owned solar arrays to the grid.
Thank you!

For more information:

greenfieldlightandpower.com

Carole Collins, Director of Energy and Sustainability

Carole.Collins@greenfield-ma.gov
Access the RECs Primer

www.epa.gov/statelocalenergy/clean-energy-financing-tools-and-resources-local-governments
Connect with the State and Local Energy and Environment Program

U.S. Environmental Protection Agency

David Tancabel
Tancabel.David@epa.gov

James Critchfield
Critchfield.James@epa.gov

Guest Speaker

Carole Collins
Greenfield, MA
carole.collins@greenfield-ma.gov

Visit Our Website | www.epa.gov/statelocalenergy
Sign Up for Our Newsletter | www.epa.gov/statelocalenergy/state-and-local-energy-newsletters
Join Our LinkedIn Group | www.linkedin.com/groups/12129811/