



Welcome to the ETNNA webinar. We will begin the presentation shortly.

The Intersection between Carbon, RECs, and Tracking

Accurate Accounting and Tracking of the Carbon Attributes
of Renewable Energy

Webinar: Environmental Tracking Network of North America
November 20, 2009

Rachael Terada, Jane Valentino, and Alex Pennock
Center for Resource Solutions

Outline

- Purpose and Background Information
- Main discussion points
 - Treatment of RECs in GHG inventories
 - Accounting for emissions characteristics in system mix
 - Treatment of RECs and offsets in GHG project registries and REC tracking systems
- Q&A

Introduction to White Paper

- Interaction of RECs and carbon accounting practices in North American registries and tracking systems
- Best practices to avoid double counting
- Accurate accounting and tracking for both RECs and carbon offsets
- Areas of Examination
 - GHG project registries
 - Renewable energy certificate (REC) tracking systems
 - GHG inventory systems

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GHG project registries in North America

- Chicago Climate Exchange (CCX)
- Voluntary Carbon Standard (VCS)
 - **Registries** operated by APX, Markit, Bank of New York (pending), Caisse des Dépôts
- The Gold Standard (operated by APX)
- American Carbon Registry
- Climate Action Reserve (CAR)
- Canadian Standards Association GHG CleanProjects Registry

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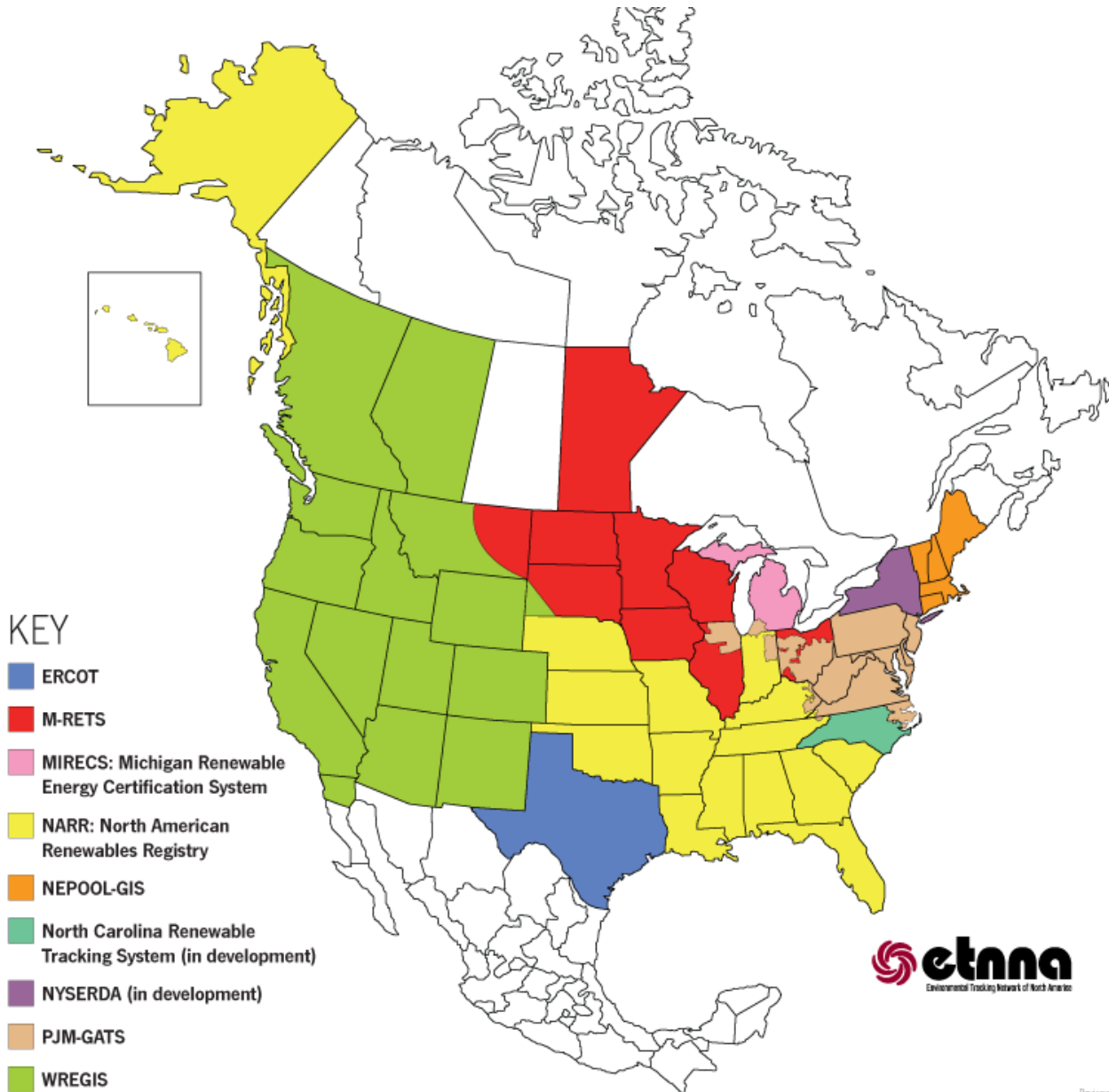
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REC Tracking Systems



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GHG Inventory Systems

GHG Inventory Systems in North America

- U.S. EPA Climate Leaders
- The Climate Registry
- Chicago Climate Exchange (CCX)
- Canadian Standards Association GHG CleanStart Registry
- Carbon Disclosure Project
- California Climate Action Registry

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Treatment of RECs in GHG inventories

1. Accounting for the carbon benefits of purchased RECs in **GHG inventories**
2. Accounting for the sale of RECs by owners of renewable energy facilities participating in **GHG inventories**

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1. Accounting for the carbon benefits of purchased RECs in GHG inventories

- Many **GHG inventories** allow the purchase of RECs to reduce Scope 2 emissions
- Potential for double counting if the REC purchaser isn't the sole owner of the environmental benefits

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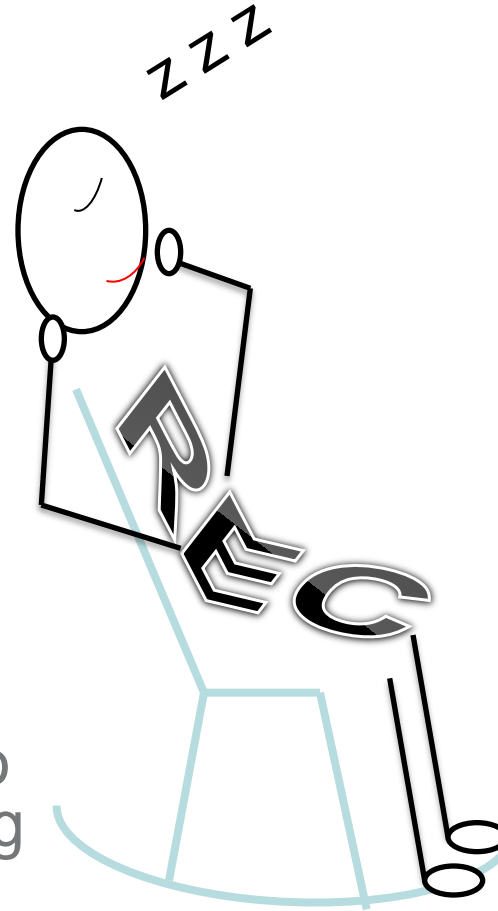
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1. Accounting for the carbon benefits of purchased RECs in GHG inventories

Best Practices

- Ensure RECs are retired on behalf of the purchaser and that there is no double claiming of the attributes
- Coordination between **REC tracking systems** and **GHG inventories** to prevent double counting



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2. Accounting for the GHG benefits by renewable energy facility owners participating in inventories that also sell RECs to other parties

- Many renewable energy generation owners participate in **GHG inventories**
- Double claiming of emission attributes can occur within the **GHG inventory** if RECs are sold to third parties and this isn't reflected within the **GHG inventory**

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2. Accounting for the GHG benefits by renewable energy facility owners participating in inventories that also sell RECs to other parties

Best Practices

- **GHG inventories** should adjust Scope 1 emissions upward if RECs not retained by generation owners
- Clear guidance and clarity by **GHG inventories** on how participants should account for REC sales

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Accounting for system mix emission characteristics

- “All-generation” **REC tracking systems** assign emissions to null power
 - PJM-GATS
 - NEPOOL-GIS
- Regions without all-generation **tracking systems** may not assign emissions to null power

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Accounting for system mix emission characteristics

$$\text{System Mix Emissions} = \frac{\text{All Emissions (tons)}}{\text{All Generation (MWh)}}$$

$$\text{Adjusted System Mix} = \frac{\text{All Emissions} - \text{RE Emissions (~0)}}{\text{All Generation} - \text{RE MWh}}$$

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Accounting for system mix emission characteristics

Best Practices

- Use an adjusted system mix calculation
- Do not include generation from claimed renewable energy
- **REC tracking system** reporting should be used by entities calculating system mix (such as utilities and state agencies) to factor out specific purchases and use of renewable energy

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Treatment of RECs and offsets in GHG project registries and REC tracking systems

1. Tracking carbon equivalences of renewable energy in voluntary **REC tracking systems**
2. Tracking RECs and offsets from same renewable energy project to ensure no double counting of carbon attributes
3. Tracking offsets from methane destruction and RECs from renewable generation from the same project

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1. Tracking carbon equivalences of renewable energy in voluntary REC tracking systems

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Certificates in Subaccount						Avoided Carbon, Green-e Climate Protocol (Metric Tons CO2e)
NAR ID	Asset	Fuel/Project Type	Certificate Vintage	Certificate Serial Numbers	Quantity	
GEN26	wind farm - Wind	Wind	4/2009	NAR-REC-26-AL-04-2009-43-1666 to 3500	1,835	1310.19
GNC26	wind farm - Wind	Wind	5/2008	NAR-RECC-26-AL-05-2008-75-50001 to 55000	5,000	3570
GEN26	wind farm - Wind	Wind	3/2009	NAR-REC-26-AL-03-2009-44-1 to 4500	4,500	3213
					11,335	8093.19

1. Tracking carbon equivalences of renewable energy in voluntary REC tracking systems

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1. Tracking carbon equivalences of renewable energy in voluntary REC tracking systems

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1. Tracking Carbon Value of renewable energy in REC Tracking Systems

Best Practices

- Clearly differentiate or mark projects that meet offset programs' additionality criteria
- Specify carbon calculation methodology
- Add a Retirement Reason option for use as offset
- Do not separate the carbon attributes from the REC as a separate commodity
- Do not by default list carbon values for *all* projects

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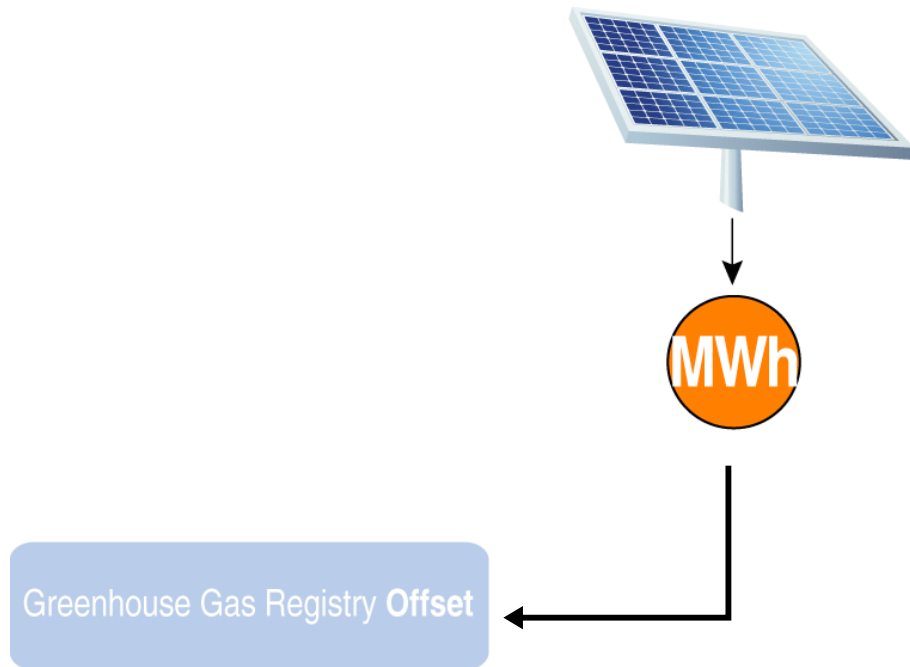
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2. Tracking RECs and offsets from same renewable energy project to ensure no double counting of carbon attributes

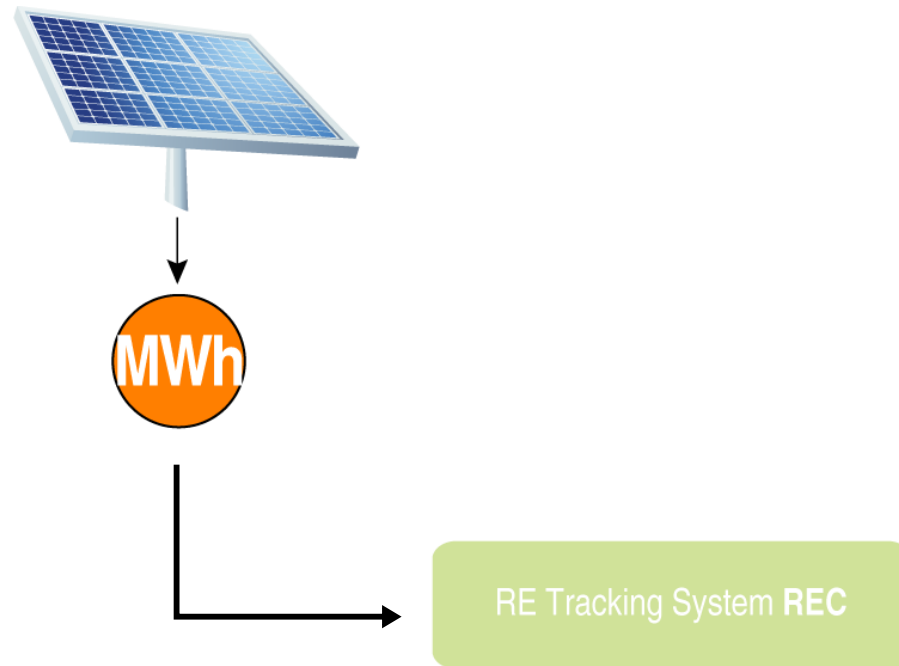


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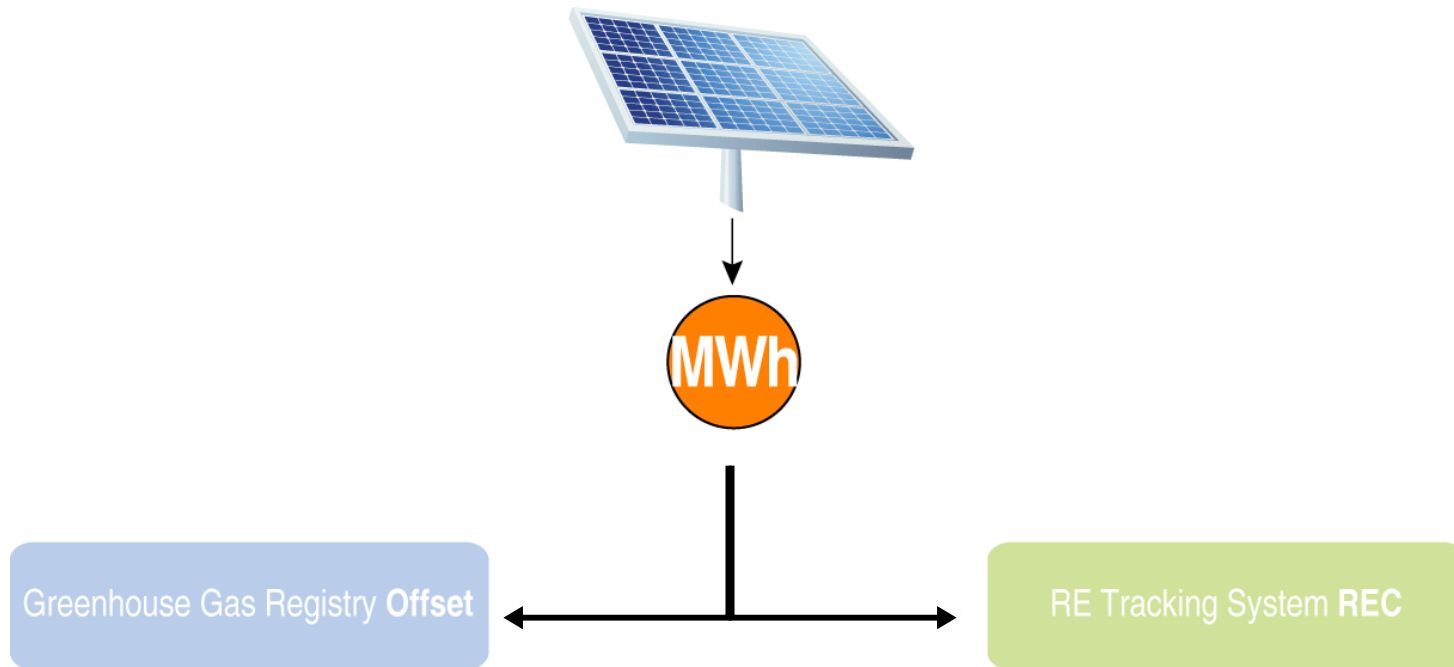


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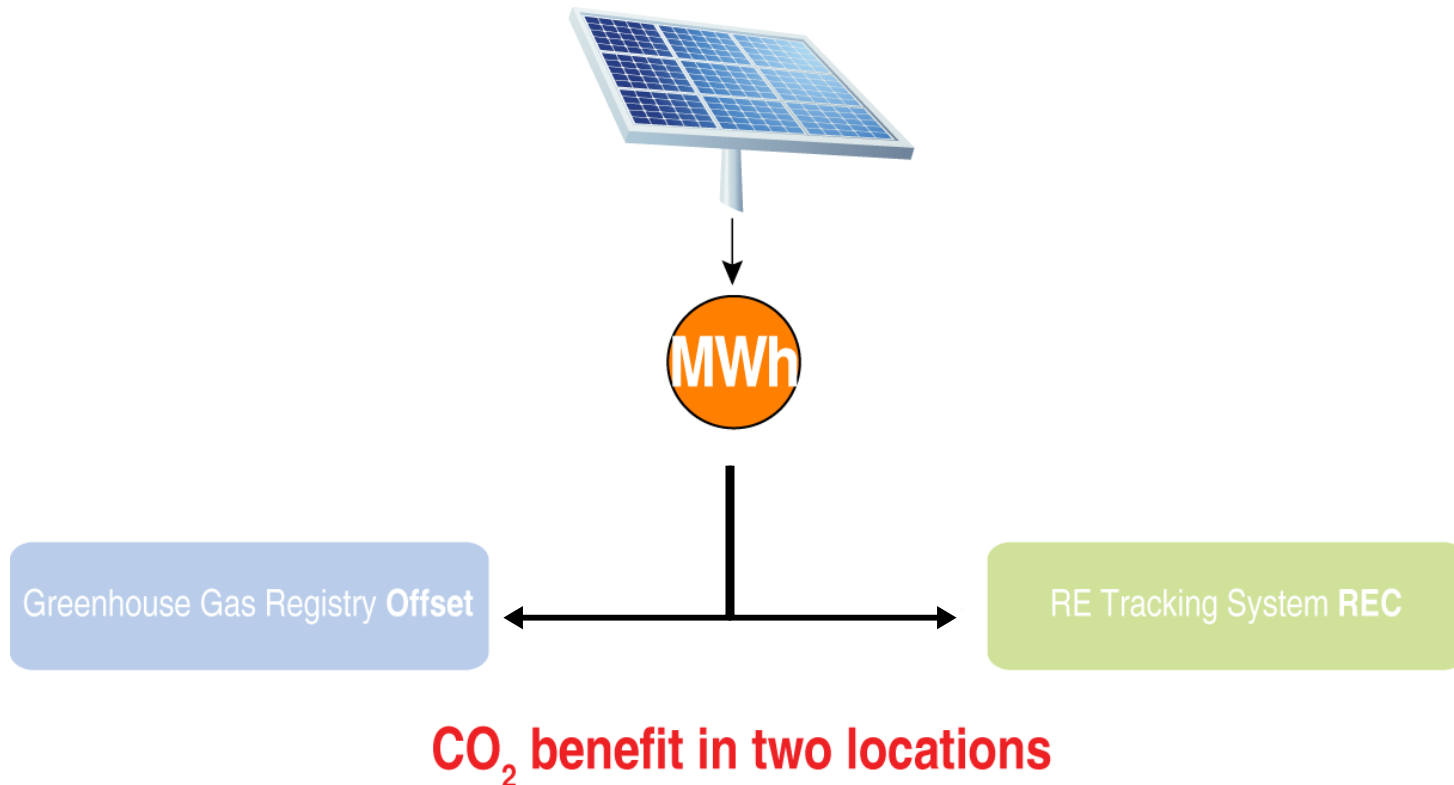


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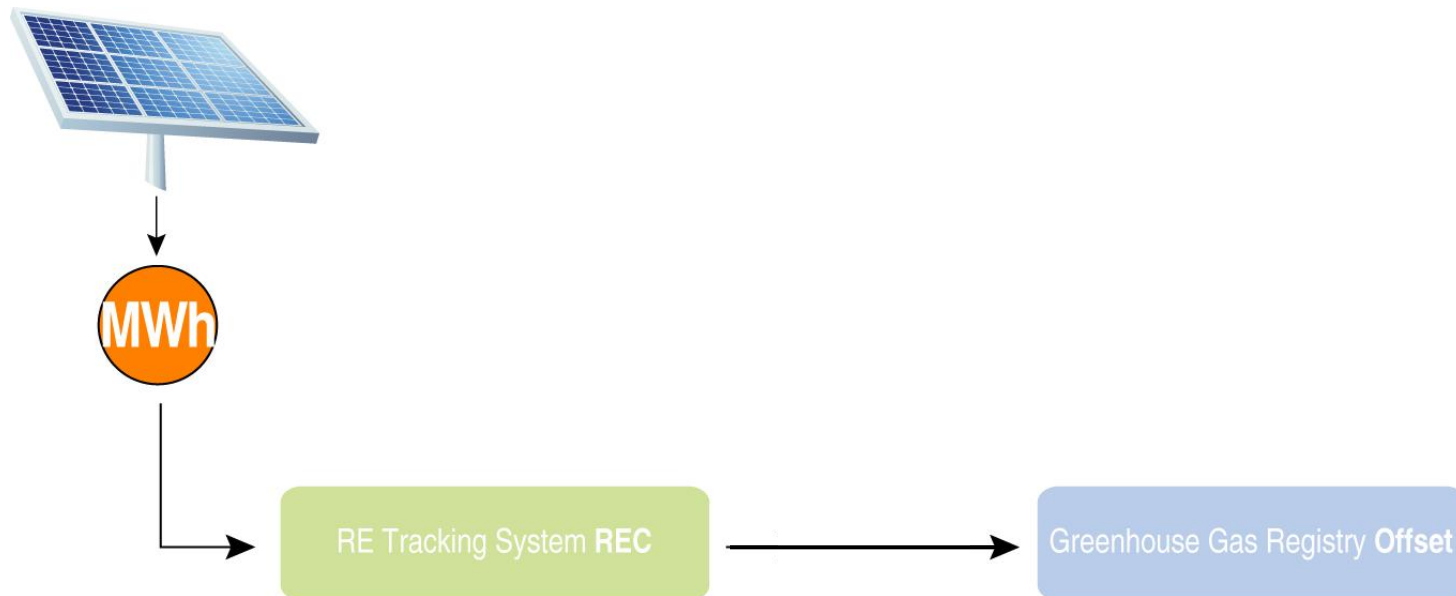


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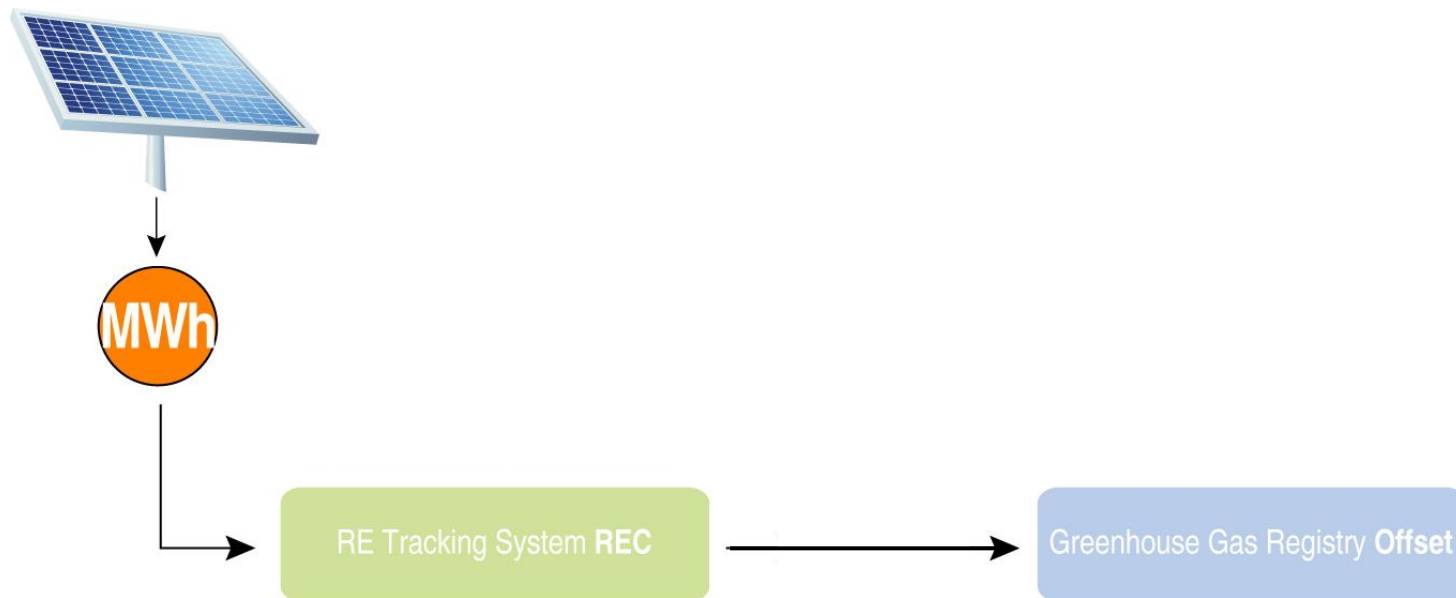


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2. Tracking RECs and offsets from same renewable energy project to ensure no double counting of carbon attributes



CO₂ benefit converted, exists in one place only.

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2. Tracking RECs and offsets from same renewable energy project to ensure no double counting of carbon attributes

Best Practices

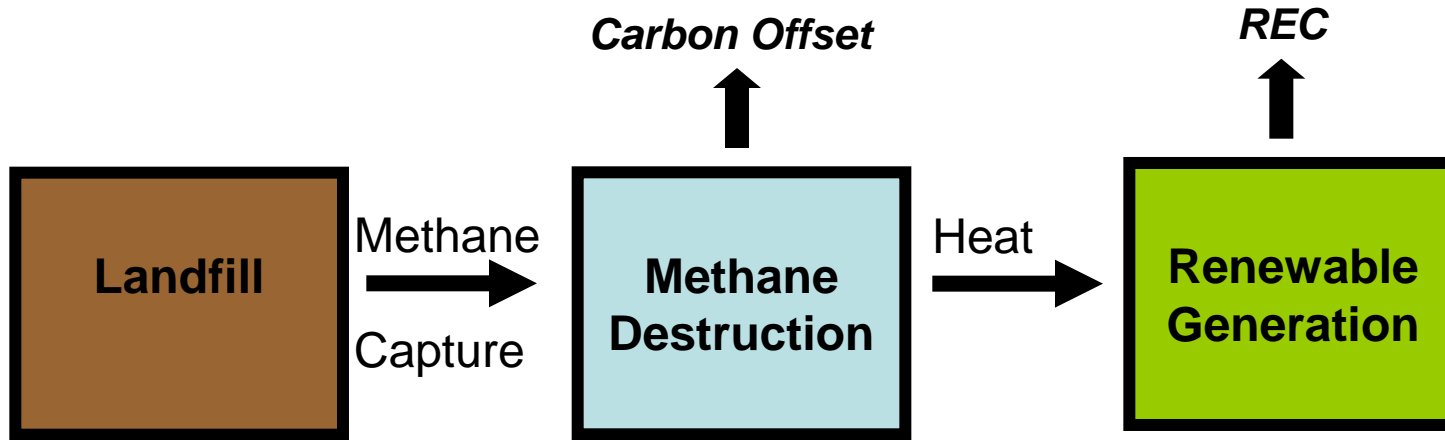
- RECs and offsets from the same MWh should not exist simultaneously in separate **GHG project registry** / **REC tracking system**
- Project profile notes other **registry** / **tracking system** project is registered in
- If project registered in a **tracking system**, **registry** should require proof of REC retirement in **tracking system** to create offsets in **registry**

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3. Tracking offsets from methane destruction and RECs from renewable generation from the same project

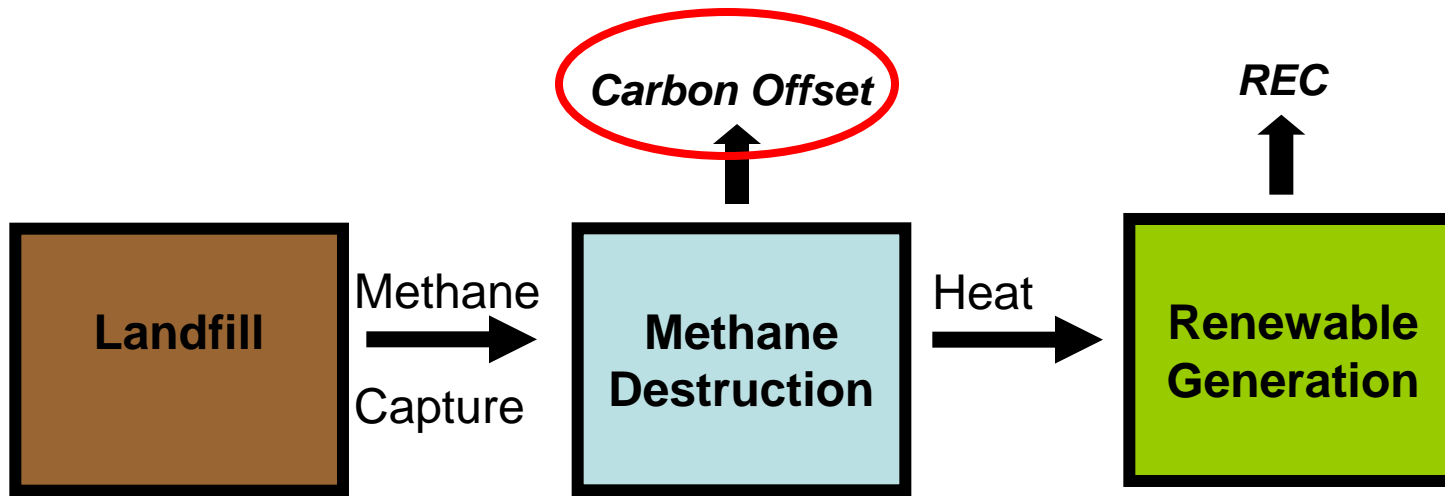


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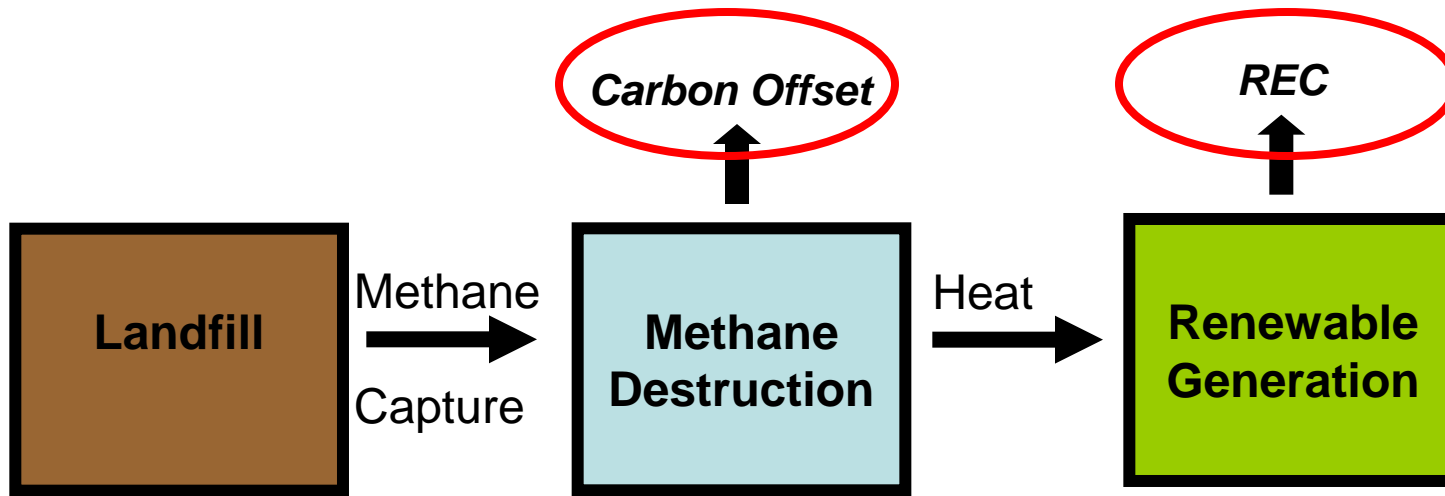


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3. Tracking offsets from methane destruction and RECs from renewable generation from the same project

Best practices

- Specify if emissions reductions from renewable generation are included in **GHG project registry**
- Project profile notes other **registry** / **REC tracking system** project is registered in
- If project registered in a **tracking system**, **registry** should require proof of REC retirement in **tracking system** to create offsets in **registry**

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Questions and Answers

We welcome your feedback on the topics presented.

Please contact us with suggestions for this ETNNA report.

Preference will be given to ETNNA members for incorporating comments into the white paper.

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