



December 2021

## Building Energy Performance Standards (BEPS) in Montgomery County- Solar and Renewable Energy Credit



Learn more at <https://www.montgomerycountymd.gov/green/energy/beps.html>

# Introductions and Ground Rules for Today

## Your Facilitators Today:



Emily Curley



Adam Agalloco



## On the call for Questions:



Lindsey Shaw



## Ground Rules:

- All attendees are on mute. We'll unmute attendees to speak at designated times.
- To ask a question or give feedback:
  - Click the raised hand icon to indicate you'd like to speak, or
  - Type your question or response in the Chat box
- Use the Chat box to write your name and organization
- Today's Session will be recorded

# Meeting Objectives

## Meeting Objectives

To ensure that everyone has the same base of knowledge to engage in the future sessions as we develop recommendations for a Solar and Renewable Energy Credit for Montgomery County's Building Energy Performance Standard (BEPS).

## Why BEPS and a Solar and Renewable Energy Credit is Important!

Building Energy Performance Standards are policies that set minimum thresholds for energy performance for existing buildings, which are based on and measured against a building's demonstrated energy performance.

Incorporating renewable and solar energy into **BEPS is complicated, but important**. In developing a standard, there are few precedents to work from and lots of options to consider. We'll be framing that discussion today and working through recommendations through this process.

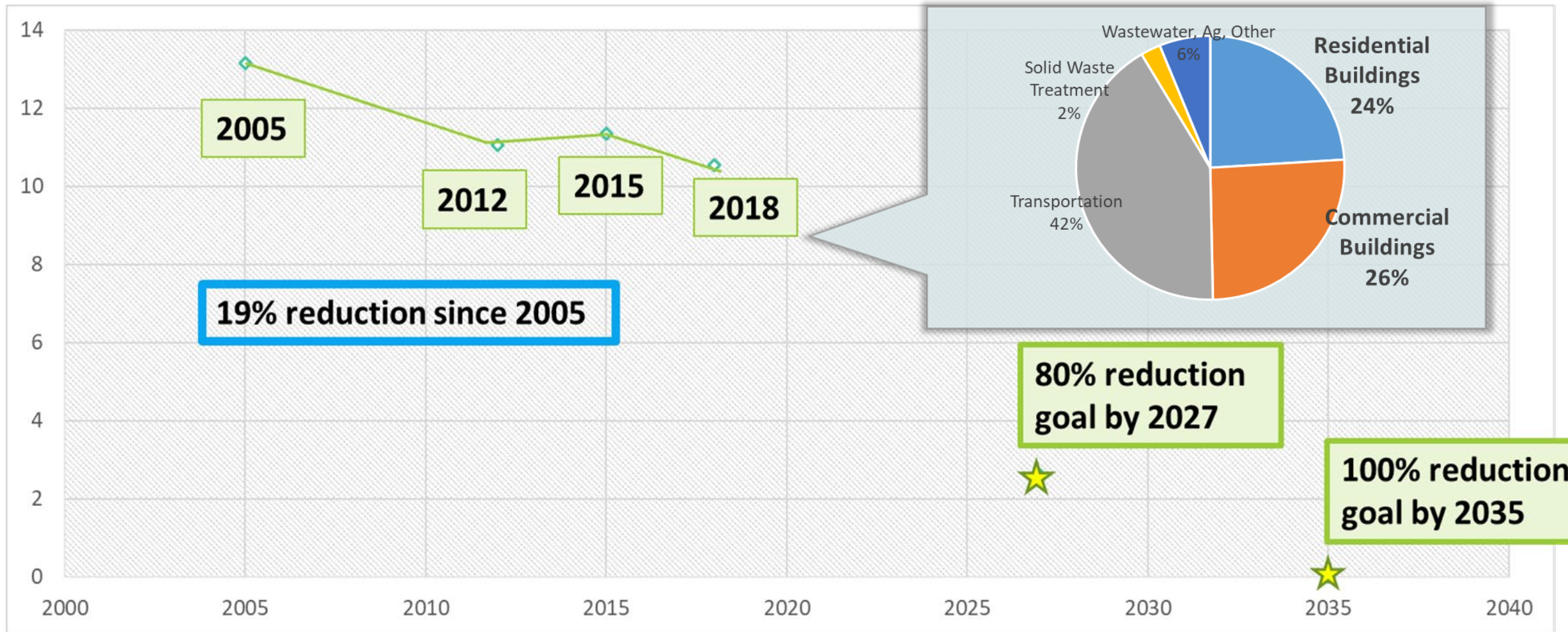
# Solar and Renewable Energy Credit Process

Through three sessions, we will create a set of recommendations related to a solar and renewable energy credit that will inform the regulations in development.

- First Session
  - Refresh on BEPS
  - Review Credit Options and Tradeoffs
- Second Sessions (Planned for January)
  - Smaller group discussions (6-8 total discussions)
- Third Session (Planned for February)
  - Review small group discussion feedback.
  - Share and discuss draft recommendations.
- Stakeholder-Informed Final Recommendations and Considerations (Spring)

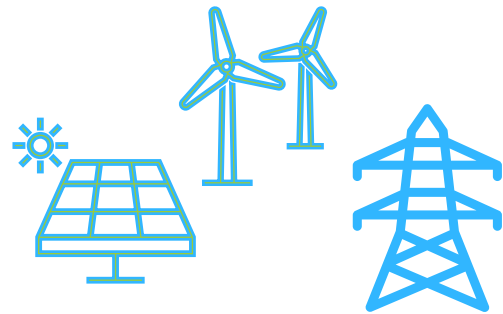
# BEPS: Purpose

- Emissions reduction goals of 80% by 2027 and 100% by 2035
- Per the [CAP](#), BEPS addresses emissions from **existing** buildings by improving performance through energy efficiency



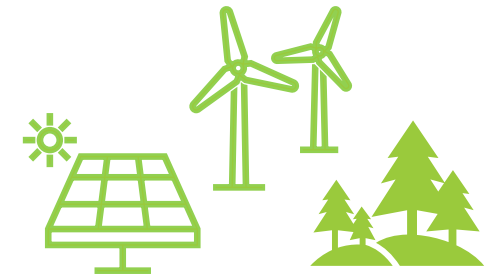
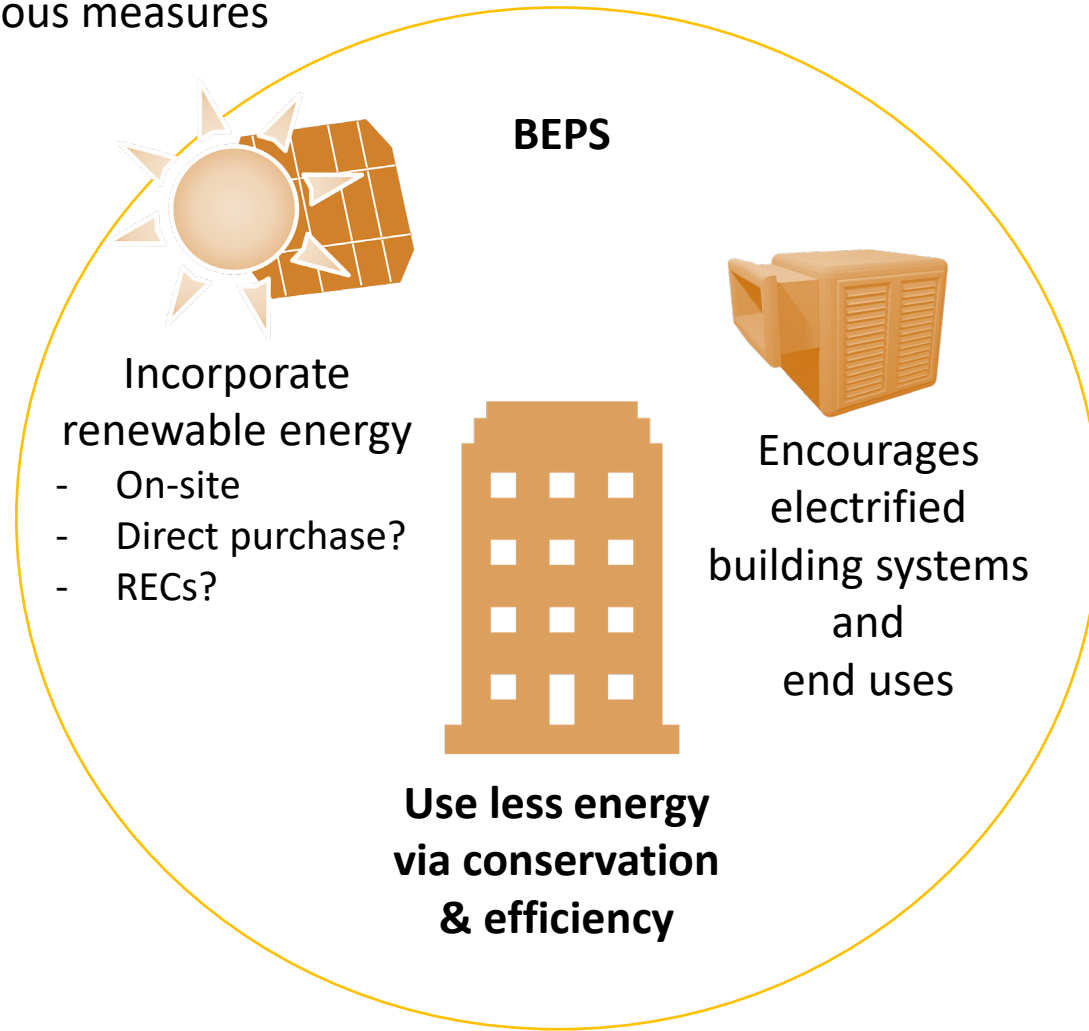
# Buildings and Climate

- Building emissions can be reduced or offset in several ways
- Costs vary drastically for various measures



Source renewable energy:

- Grid (RPS)
- Supplier choice (CCE)
- Power purchase agreement



Offset remaining emissions:

- RECs
- Carbon offsets

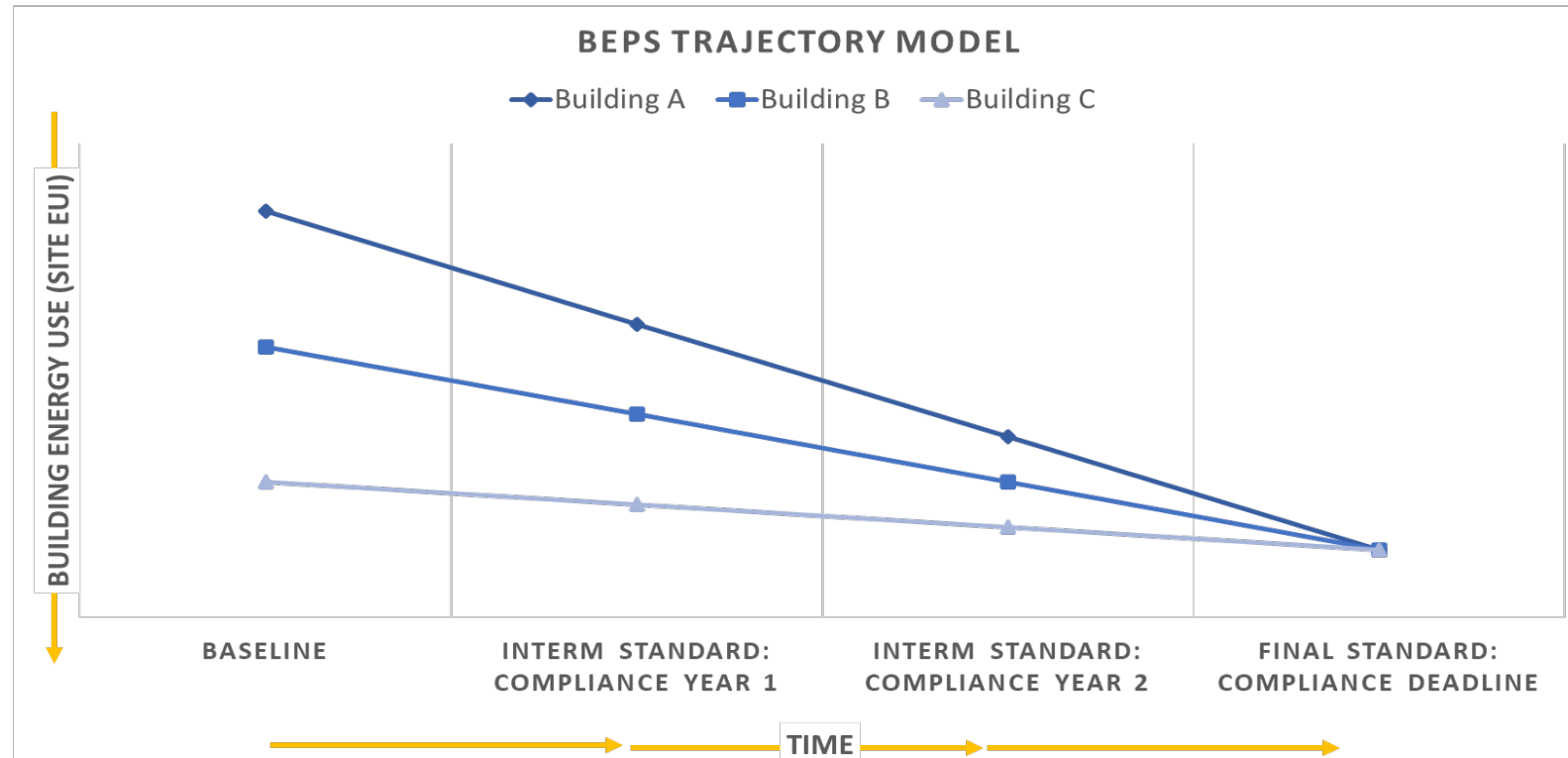
# General Approach on Bill 16-21

- **Building Energy Performance Standard (BEPS) Legislation:**
  - Amends the Benchmarking Law to expand the number of buildings covered by the Benchmarking Law,
  - Adds a performance requirement,
  - Establishes an Advisory Board for BEPS implementation
- Creates framework BEPS framework, numerical standards, renewable credit, adjustments for under-resourced sectors will be defined via regulation
- Incorporates stakeholder voices on [policy recommendations](#)

# BEPS Policy Overview

Long-term performance standards balance the need to address the climate emergency with immediate action with building owners' need for certainty and flexibility in how they manage their buildings.

- Each covered building's baseline based on average historical energy use
- Buildings receive a long-term site EUI target based on their property type
- Data is reported annually via ENERGY STAR Portfolio Manager, already required by the Benchmarking Law
- Every 4 years, properties are evaluated for compliance with interim targets (to be defined in regulation)
- Currently exploring renewable energy options as a credit towards meeting BEPS target





# BEPS Timeline (Under Proposed Legislation)

- **Anticipated approval of BEPS legislation in 2022**
- Anticipate regulations and initial baselines created in 2022. **Credit will be included in regulations.**
- Newly covered **buildings benchmark for 3 years before** phasing into BEPS program
- Buildings report annually on June 1 with BEPS **progress assessed in interim and final standard years**
- Compliance would start for some buildings in 2023, with **compliance to the final standard starting in the mid 2030s.**

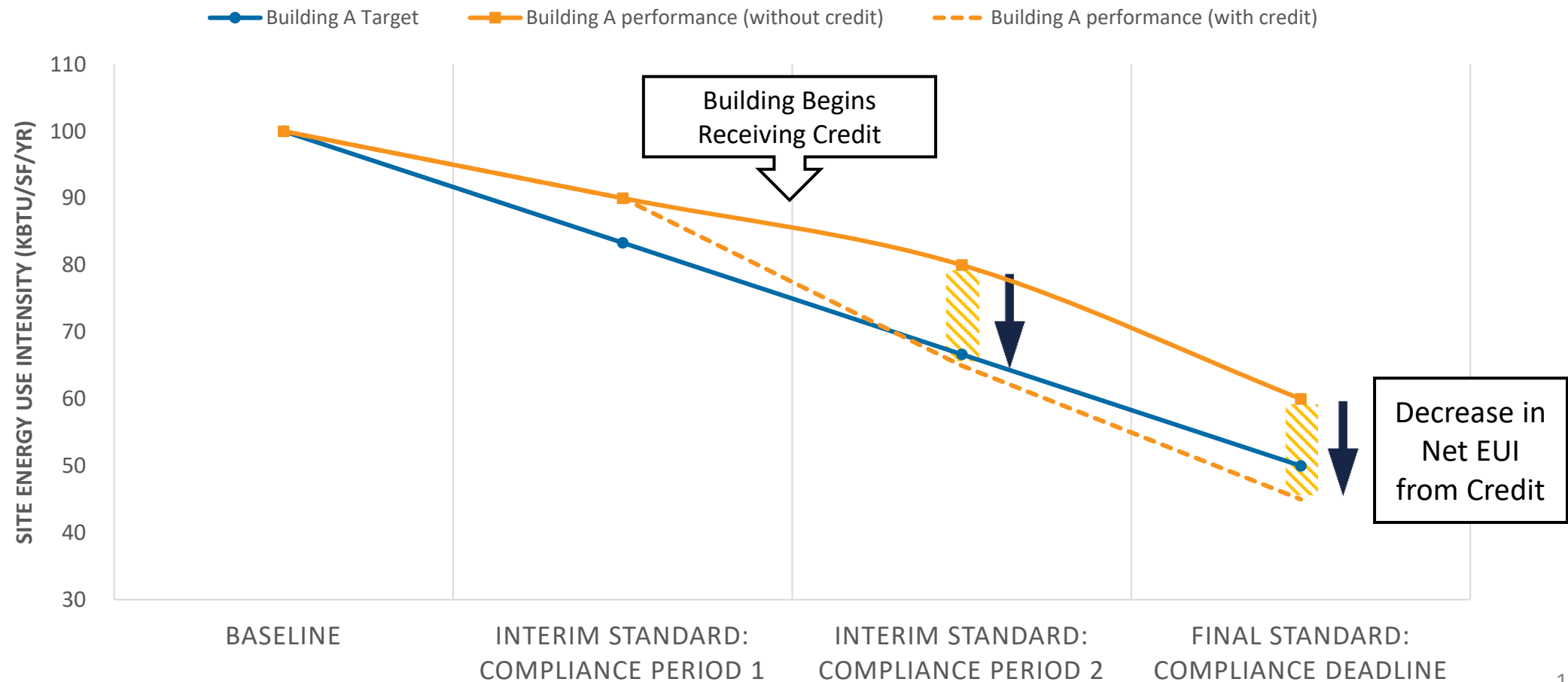


# Potential Solar and Renewable Energy Credit

BEPS is built on **Weather-Normalized EUI**; the solar and renewable energy credit will likely be in the same metric

$$\text{Net Site EUI} = (\text{Weather-Normalized Site Energy Use} - \text{Reduction from Credit}) / \text{gross square feet}$$

### RENEWABLE AND SOLAR CREDIT IMPACT ON BEPS



# BEPS Credit Outcome Priorities and Considerations

## Potential Benefits

- Building Energy Performance
- Reduced Carbon Pollution
- Grid Benefits
- Local Benefits (economic activity, job creation, air quality)
- Alignment with existing building codes

## Other Considerations

- Level of effort and documentation required by building owners on submission
- Resources and effort on County to administer a credit
- Need for accurate information (County and participants)

# Overview of Options and Choices: Discussion Topics

During the stakeholder sessions, we will discuss the following policy options and a set of related questions:

1. Qualified Renewable Energy Sources
2. Treatment of existing solar and renewable energy installations
3. Renewable Energy Credits
4. Offsite renewable energy projects
5. Net metering and exported power

# 1. Overview of Options and Choices: Qualified Renewable Energy Sources

**Qualified Renewable Energy** captures electricity generated in compliance with regulatory or programmatic provisions related to specified renewable and clean energy sources.

## Qualified Renewable Energy Sources:

- Often include:
  - Onsite Solar
  - Onsite Wind energy generation sources
- Could include:
  - Offsite clean energy sources (PPAs, unbundled Renewable Energy Credit purchases, etc)
- Usually do not include:
  - Battery systems (impacts time of electricity use, but doesn't mean that a clean generation source is used)
  - Fossil-fuel combined Heat and Power systems (already accounted for in building performance)

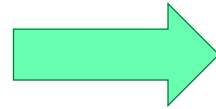
## 2. Overview of Options and Choices: Existing Systems

### Existing Renewable Energy Systems and Projects:

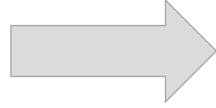
- Rooftop Solar
  - 20 existing commercial solar projects in County
- Offsite Renewable Energy Contracts
  - Existing PPAs
  - Unbundled REC purchases

### 3. Overview of Options and Choices: Renewable Energy Credits

**Renewable Energy Credits (RECS):** certificates corresponding to the environmental attributes of energy produced from renewable electricity sources such as wind or solar



1 MWh of electricity from renewable energy



1 Renewable Energy Credit (REC)

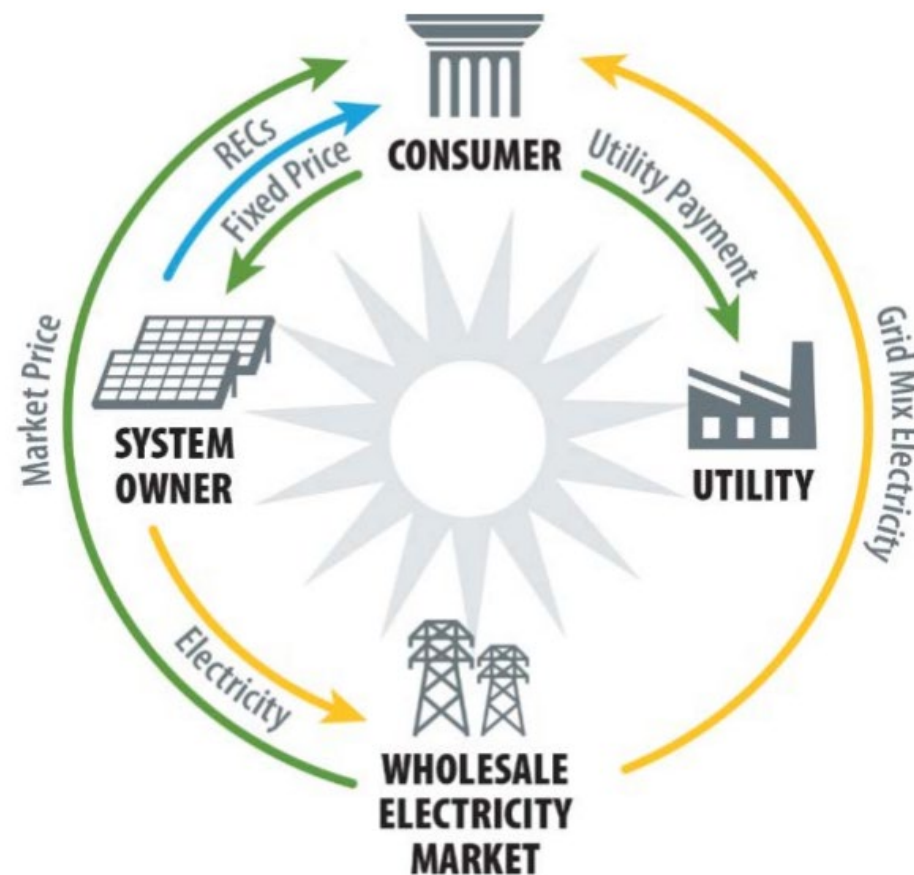
There are various types of RECs available for purchase, ways to procure them, and options for how to treat them.

- **Requirements:** Under Maryland's RPS, electricity suppliers are required to purchase RECs for their customers. RECs are bought and sold in a marketplace and have significant value.
- **Power Purchase Agreements (PPAs)**
  - 3rd party project owners for onsite solar PPAs may retain REC ownership to lower PPA rate to property owner.
  - Property owner sometimes buys replacement RECs
- **Other REC procurement:**
  - Building and portfolio owners may elect to purchase RECs to support environmental goals

## 4. Overview of Options and Choices: Offsite Renewable Energy

**Offsite Renewable Energy and Power Purchase Agreements:** a long-term contract in which the buyer procures a portion of the output of a renewable energy project (e.g., wind and/or solar), including RECs

**Unbundled RECs:** RECs that are sold separately from physical energy are known as Unbundled RECs. They can be bought for various lengths of time and from various locations, renewable technologies, and vintages (ages of renewable systems).

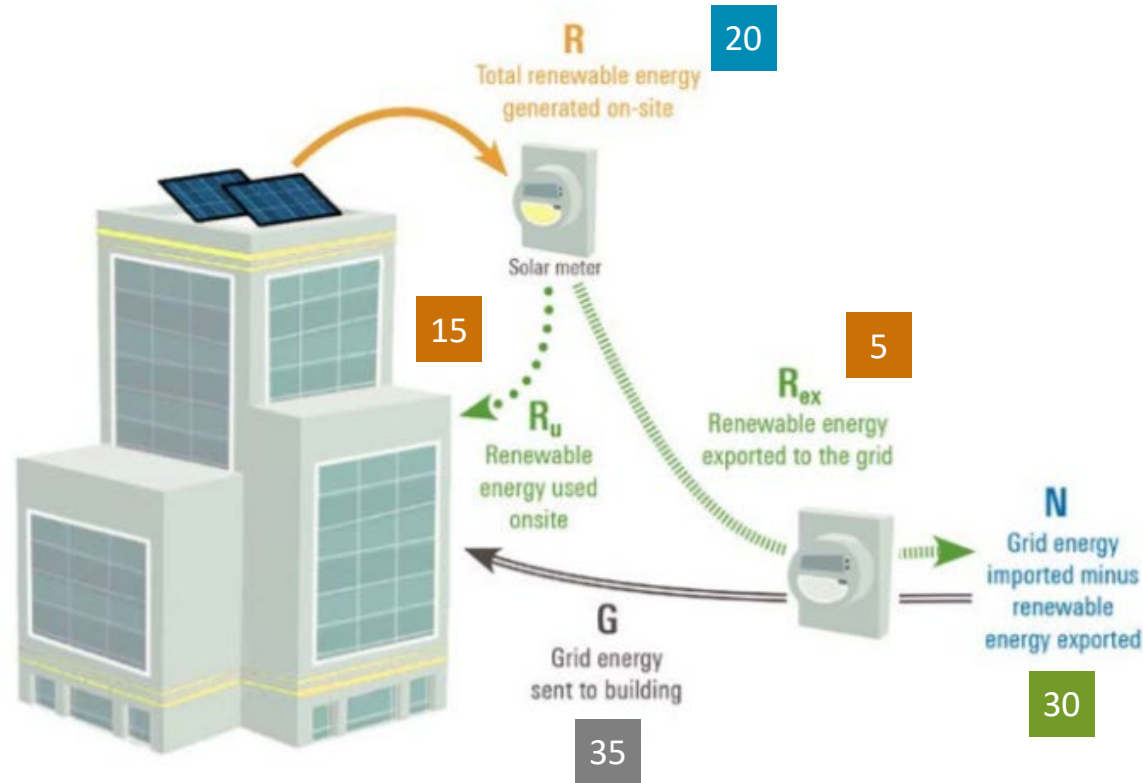


Common Price and Renewable Energy Certificate (REC) flow under a PPA (NREL)



# 5. Overview of Options and Choices: Net Metering


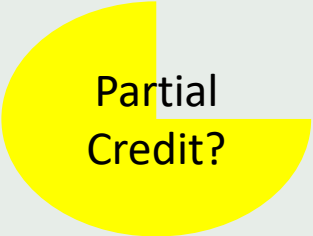

## Net Metering and Exported Power Considerations



<b>R:</b>	<b>Total amount of renewable energy generated onsite</b> Properties with onsite renewables should have access to this quantity	20
<b>R<sub>ex</sub>:</b>	<b>Renewable energy generated onsite, exported back to grid</b> Availability depends on metering (utility meter or owner submeter)	5
<b>R<sub>u</sub>:</b>	<b>Renewable energy generated onsite, used onsite</b> Can be calculated as $R - R_{ex}$ .	15
<b>G:</b>	<b>Grid energy sent to building</b> Availability depends on metering (utility meter or owner submeter)	35
<b>N:</b>	<b>Net consumption of grid energy, accounting for exports</b> Shows what a customer owes on utility bills. Equal to $G - R_{ex}$ .	30
<b>Total site energy required to operate the building:</b> Equal to $R_u + G$ or $N + R$ .		50
<b>Total source energy required to operate the building:</b> Must be calculated as $R_u + G$ .		

- Maryland allows for net metering. A credit could be applied for:
  - Total renewable energy **used** on-site
  - Total renewable energy **generated** on-site

# How it could look? – (Illustrative only, **not a recommendation!**)

Project Type	Potential Credit
Onsite Solar project with RECs retained. Power exported to the grid excluded from credit.	 <p>Full Credit?</p>
Onsite Solar project with project receiving replacement RECs from the third-party project owner. Power exported to the grid excluded from credit.	 <p>Partial Credit?</p>
Offsite wind project with RECs retained and retired.	 <p>Partial Credit?</p>

# Overview of Options and Choices- Questions

1. What should be considered a qualified renewable energy source?
2. How should existing systems be considered by the Credit?
3. How should the BEPS credit account for the ownership of Renewable Energy Credits?
  - Should different REC treatments mean partial credit?
4. Should offsite renewable energy projects receive a BEPS credit?
  - If so, should it be a full or partial credit?
  - What type(s) of offsite renewable energy supply agreements qualify?
5. How could/should net metering (exported power) impact a BEPS credit?

# Clarifying Questions and Next Steps

**Thank you for your time today!**

## **January Feedback Sessions**

For the folks that are in the meeting, we'll reach out on scheduling these session. If you'd like to participate in this meetings, please let us know by emailing us at [energy@montgomerycountymd.gov](mailto:energy@montgomerycountymd.gov)