

# Finding Pennsylvania's Solar Future Overview

*June 14, 2018*



[www.dep.pa.gov/pasolarfuture](http://www.dep.pa.gov/pasolarfuture)

# Today's Agenda

- Review of changes to the Solar Future Plan
- Summary of the modeling and analysis
- Takeaways from the stakeholder process
- *The Strategy Support and Market Transformation Plan*
- Lunch -- Keynote by Laura Rigell (PEA)
- Panel Discussions
  - Government
  - Industry

# Timeline

- December 30, 2017:
  - Revised Goal Setting ✓
  - Rough Draft of the PA Solar Future Plan ✓
- March, 2018:
  - Stakeholder Review Draft Solar Future Plan ✓
  - Revised Scenario Results ✓
- May, 2018:
  - Expert Review Complete ✓
- June, 2018:
  - Public Release of Draft Pennsylvania's Solar Future Plan ←
  - Public Comment ←
  - Begin Strategy Support and Market Transformation Plan ←

# External Review

- Received input from
  - Dr. Seth Blumsack, Penn State Univ.
  - Dr. Willard Delavan, Lebanon Valley College
- Review priorities
  - Reasonableness
  - Clarity
  - Issues we missed
- We did not ask for
  - Duplication or validation of modeling
  - Legal analysis
  - Reconsidering the scope of the project
  - Whether legislation or changes to regulations are required (more explicit than legal)

# Public Comment Process

- A notice will appear in the Pennsylvania Bulletin opening up a 60-day comment period.
- Any comments received after May 17<sup>th</sup> will also be considered.
- When the document is final we will provide:
  - The final version
  - Written responses to comments

# Changes to the plan

- Changing “recommendations” to strategies
- Making the case for solar early in the document
- Focus on the strategy not the implementation
- Including more examples of where similar strategies have been implemented
- Completed the Executive Summary
- Integrated the Appendices and moved more content into it

# Strategies

- More have been combined under “cross-cutting issues”
- Removed the “broad considerations for strategies” section
- Wording has been revised in a number of cases
- Again, more focus has been put on describing strategies than the pathway to implementation
- Not ranked, prioritized or assigned a level of difficulty to implement

## Cross-Cutting Strategies

### Alternative Energy Portfolio Standards

- Implement an increase in the AEPS solar PV carve-out to between 4 and 8 percent by 2030 and ensure creditable SRECs are limited to those generated in Pennsylvania wherever possible.

### Access to Capital

- Increase access to capital by expanding availability of solar lending products to residential and commercial projects to enable solar ownership.
- Provide loan guarantees to lower interest rates and incentivize deployment of solar generation.

### Carbon Pricing

- Implement a carbon pricing program and invest the proceeds in renewable energy and energy efficiency measures.

### Siting and Land Use

- Support the creation and adoption of uniform policies to streamline siting and land-use issues while encouraging conservation.
- Provide support for brownfields development over land that can be used for other purposes.

### Tax Incentives

- Evaluate the state tax policy and consider exemptions that encourage the development of solar PV systems.
- Assist solar project sponsors in identifying investors and/or companies that have sufficient tax equity appetite to take full advantage of the federal ITC and Modified Accelerated Cost Recovery System (MACRS) depreciation if sponsors cannot do so themselves.

## Grid Scale Strategies

### Long-Term Contracts

- Develop guidelines for limited use of long term contracts (LTCs) for a period of 10 or more years to ensure Pennsylvania benefits from grid scale solar energy.
- Evaluate and consider utility ownership of solar generation especially in cases where market-driven deployment may be insufficient to achieve public goals and/or reliability concerns. This may include solar for low income and Customer Assistance Programs in particular.

### Grid Modernization

- Investigate opportunities for grid modernization to enable increased solar generation.

<b>Distributed Generation Strategies</b>	
<b>Virtual Net Metering</b>	<ul style="list-style-type: none"><li>▪ Expand the ability of customers to use net metering.</li></ul>
<b>Community Solar</b>	<ul style="list-style-type: none"><li>▪ Remove the barriers to the deployment of community solar systems in Pennsylvania</li></ul>
<b>Alternative Ratemaking</b>	<ul style="list-style-type: none"><li>▪ Ensure alternative ratemaking is addressed in a manner that does not create a disincentive for solar deployment</li></ul>
<b>Property Assessed Clean Energy (PACE)</b>	<ul style="list-style-type: none"><li>▪ Enable and encourage municipalities to offer PACE programs that include solar projects.</li></ul>
<b>Addressing Interconnection Issues</b>	<ul style="list-style-type: none"><li>▪ Accelerate use of smart inverters to manage over-voltage concerns on low voltage distribution lines and avoid unnecessarily adding costs on small solar distributed generation projects.</li></ul>

# Upcoming Stakeholder Meetings

- November, 2018 Stakeholder Meeting
  - Presentation of the Final Solar Future Plan
  - Review of the Comment/Response Document
  - Recommendations regarding the *Strategy Support and Market Transformation Plan*
- March, 2019 Stakeholder Meeting
  - Mid-course review of the *Strategy Support and Market Transformation Plan*
  - Gather input for the *Solar Future Implementation Report*.

# Modeling





# Strategy Support and Market Transformation Plan

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# Outline

- Introduction
- Strategy Support
  - Cross-Cutting
  - Grid Scale
  - Distributed Generation
- Achieving Market Transformation
  - Goals
  - Pathways
- Conclusion

# Implementation issues to consider

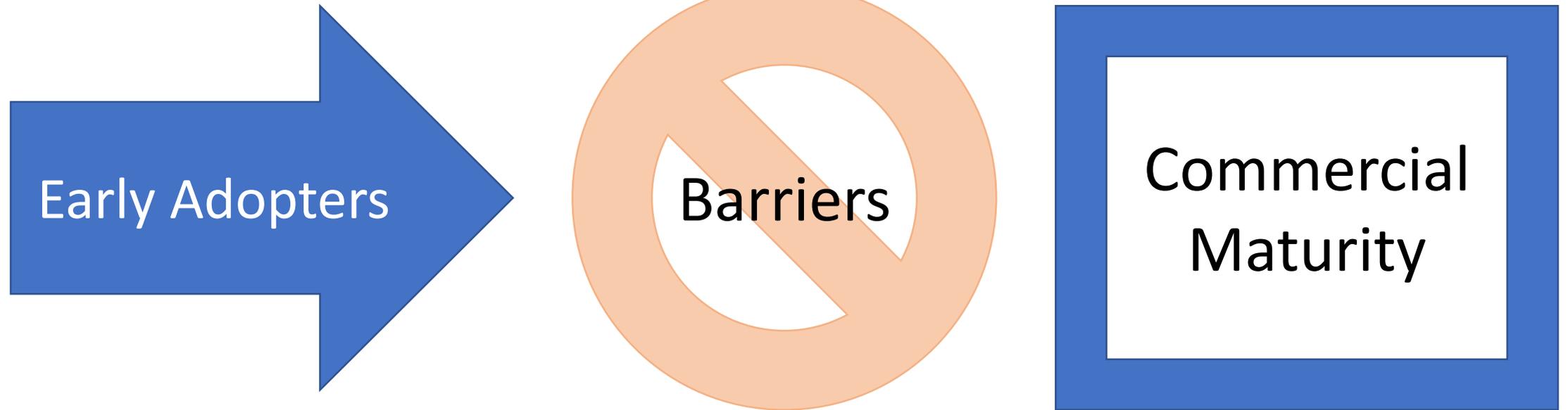
- AEPS implementation & sustainable REC Prices
- On-bill financing implementations and issues
- Addressing land impacts
- Relation of gas prices and solar
- Impacts of Pennsylvania's status as a net exporter
- Impacts of PJM market rules
- Impacts of the EV market
- Alternative Ratemaking details

# Market Transformation

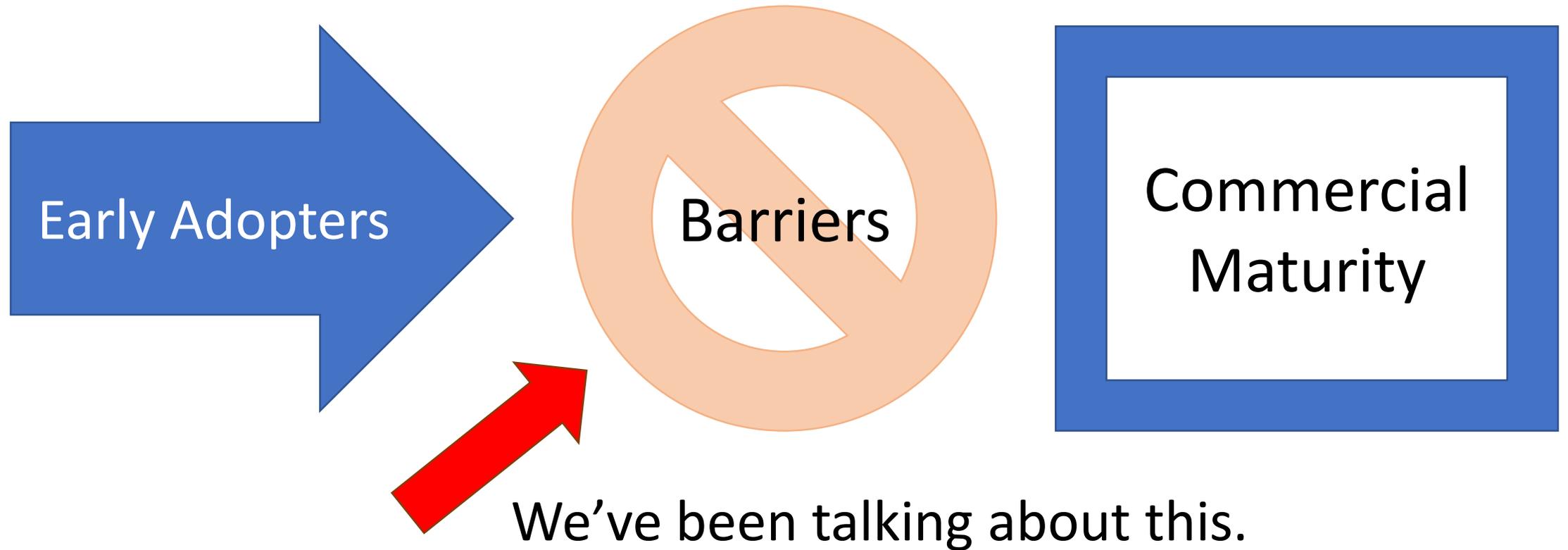
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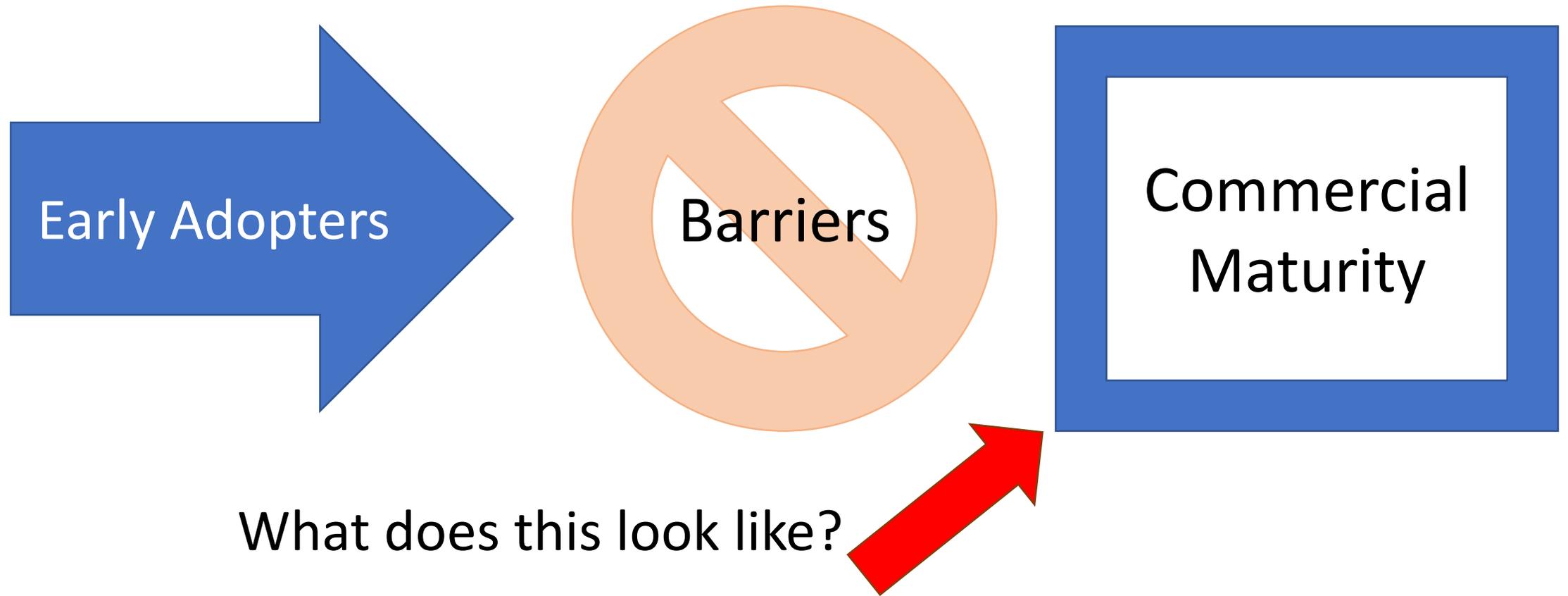
# What is Market Transformation?



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# Market Transformation: Defined

- Consumers and developers are aware of solar options
- Fear, uncertainty, and doubt is minimized
- Technical & financial barriers may exist, but are well understood
- Solar has a level playing field with other energy choices

Solar becomes “normal”

# Market Transformation: Getting There

- Technical Issues 
- Financial Issues 
- Non-Technical Factors

# Non-Technical Factors

- Consumer Education
  - Demonstrate the business case
  - Implement lessons learned
- Policy-maker Education
  - Avoid negative impacts
- Leveraging Existing Initiatives

# Need for additional outreach

- Working within existing groups
- Expanding our list of contacts
  - Municipalities
  - Agriculture
  - Real-Estate
  - Financing
  - Others?



*Finding Pennsylvania's*

**SOLAR FUTURE**