

Finding Pennsylvania's Solar Future Overview

June 14, 2018



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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 17th 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.

Distributed Generation Strategies	
Virtual Net Metering	<ul style="list-style-type: none">▪ Expand the ability of customers to use net metering.
Community Solar	<ul style="list-style-type: none">▪ Remove the barriers to the deployment of community solar systems in Pennsylvania
Alternative Ratemaking	<ul style="list-style-type: none">▪ Ensure alternative ratemaking is addressed in a manner that does not create a disincentive for solar deployment
Property Assessed Clean Energy (PACE)	<ul style="list-style-type: none">▪ Enable and encourage municipalities to offer PACE programs that include solar projects.
Addressing Interconnection Issues	<ul style="list-style-type: none">▪ 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.

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

Outline

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

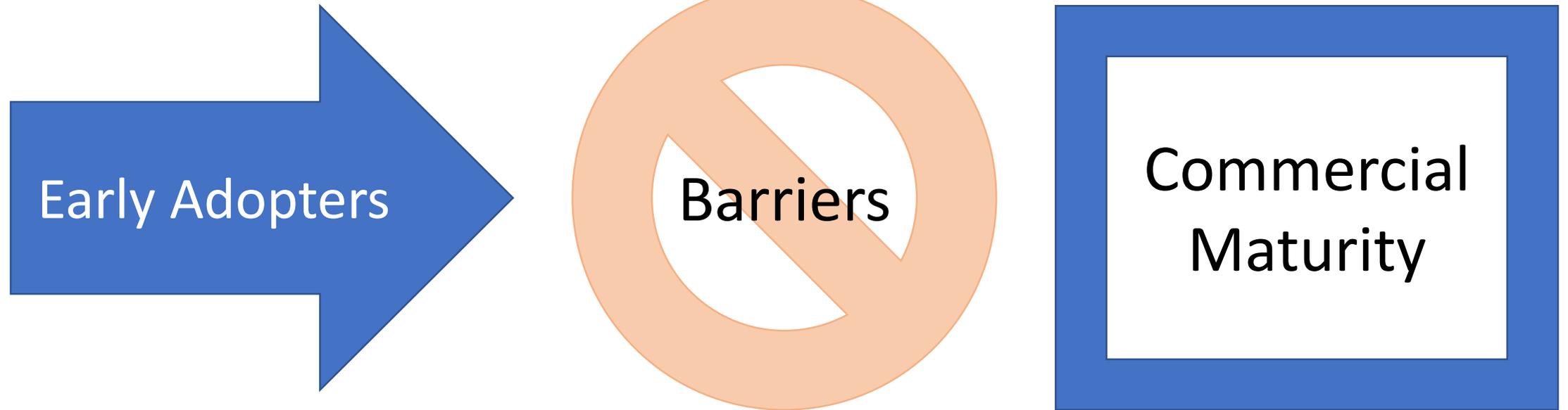
Implementation issues to consider

- 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

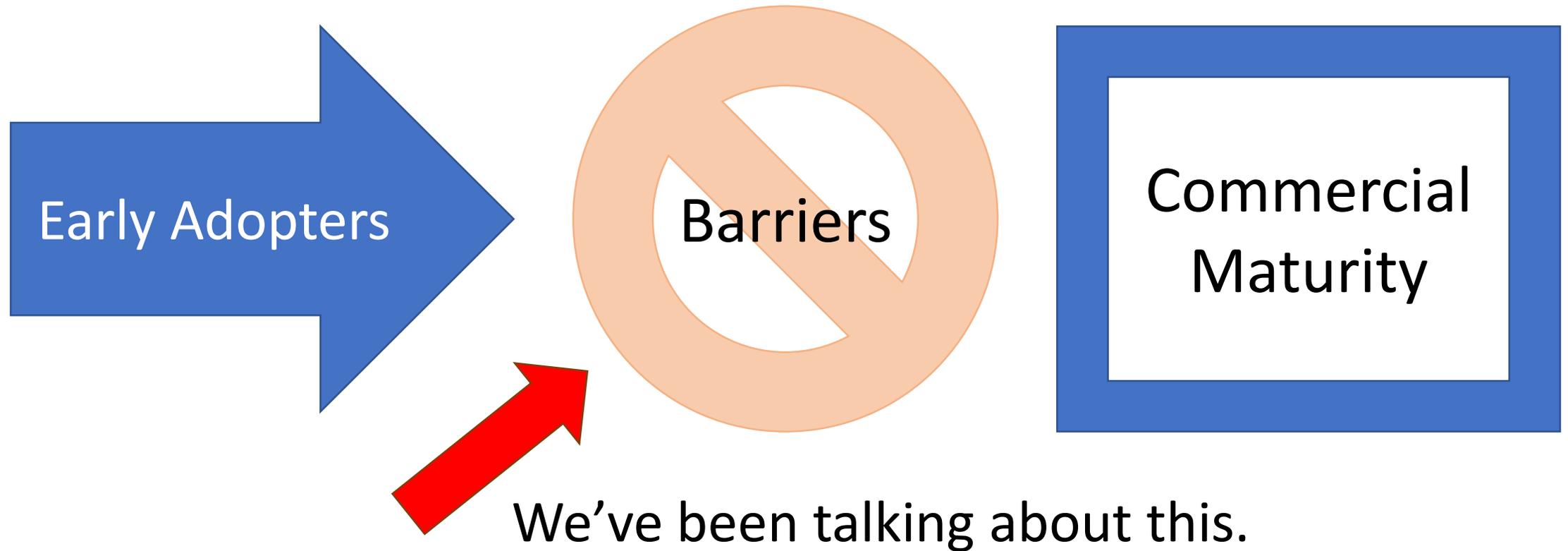
Market Transformation



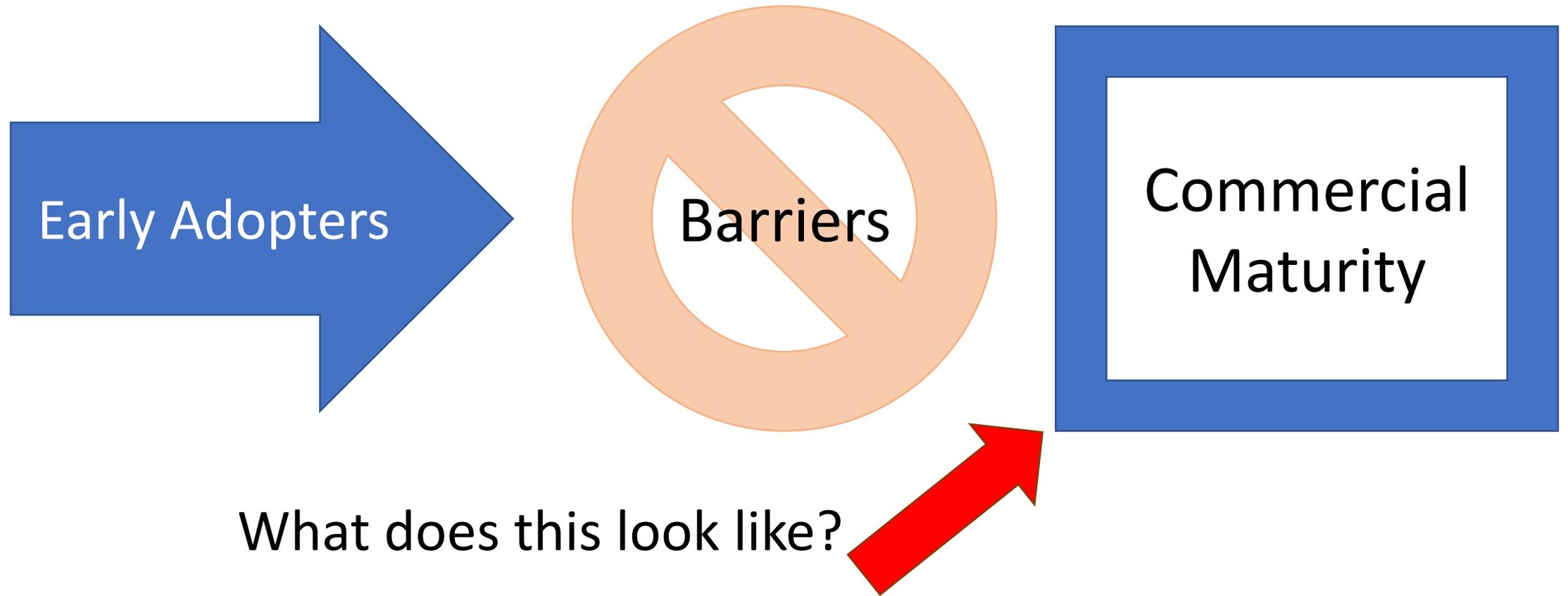
What is Market Transformation?



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What is Market Transformation?



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?



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