



PJM Advanced Technology Pilot Program

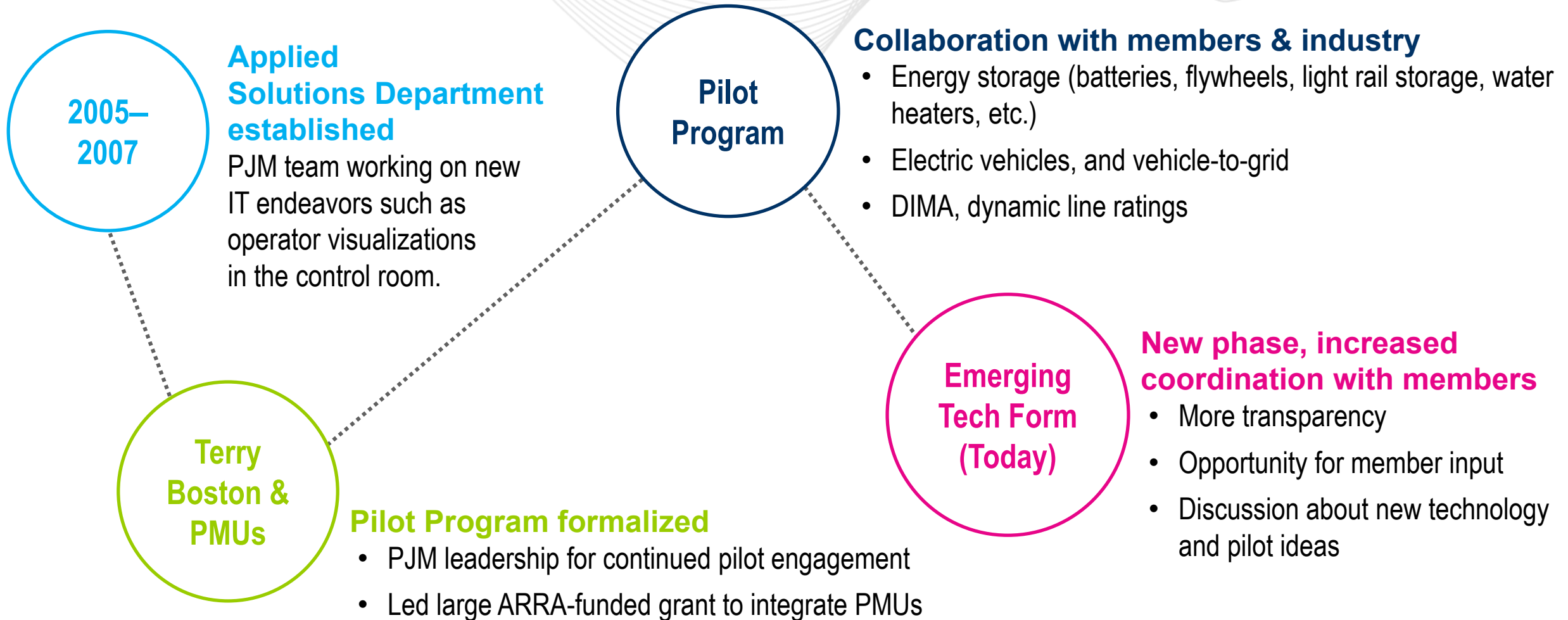
Scott Baker, Applied Innovation

Emerging Technologies Forum

August 27, 2020

- History/Background
- Types of pilot projects & past examples
- Pilot process
- Active pilots
- Resources

History of the Pilot Program: A 'Grassroots' Effort Within PJM



Advanced battery chemistries following Automatic Generation Control signals (Regulation)



Phase I. Testing



Phase II. Market participation under new market rules

Example: Testing New Market Concepts

University of Delaware
vehicle-to-grid



Chiller at Philadelphia Navy Yard




Electric storage water heaters

Distributed and aggregated loads providing ancillary services as a demand resource

'Special study' collaborations
with states, members, non-members

Washington D.C. 100 Hour Peak Shaving Analysis:
Energy Market Benefit Simulation

Market Simulation Department
PJM Interconnection
July 6, 2017



Energy Storage as a Transmission Asset

PJM Interconnection

Scott Baker
Bhavana Keshavamurthy
Muhsin Abdurrahman

Xtreme Power

Mike Jacobs
(Formerly) Director, Market Policy and Regulatory Affairs

**An Assessment of the Price Impacts of Electric Vehicles on the
PJM Market**

A joint study by PJM and Better Place

Stephen J. Schneider^a, Rob Bearman^a, Hugh McDermott^a, Xu Xu^b, Scott Benner^b, and Ken Huber^b
May 2011



better place

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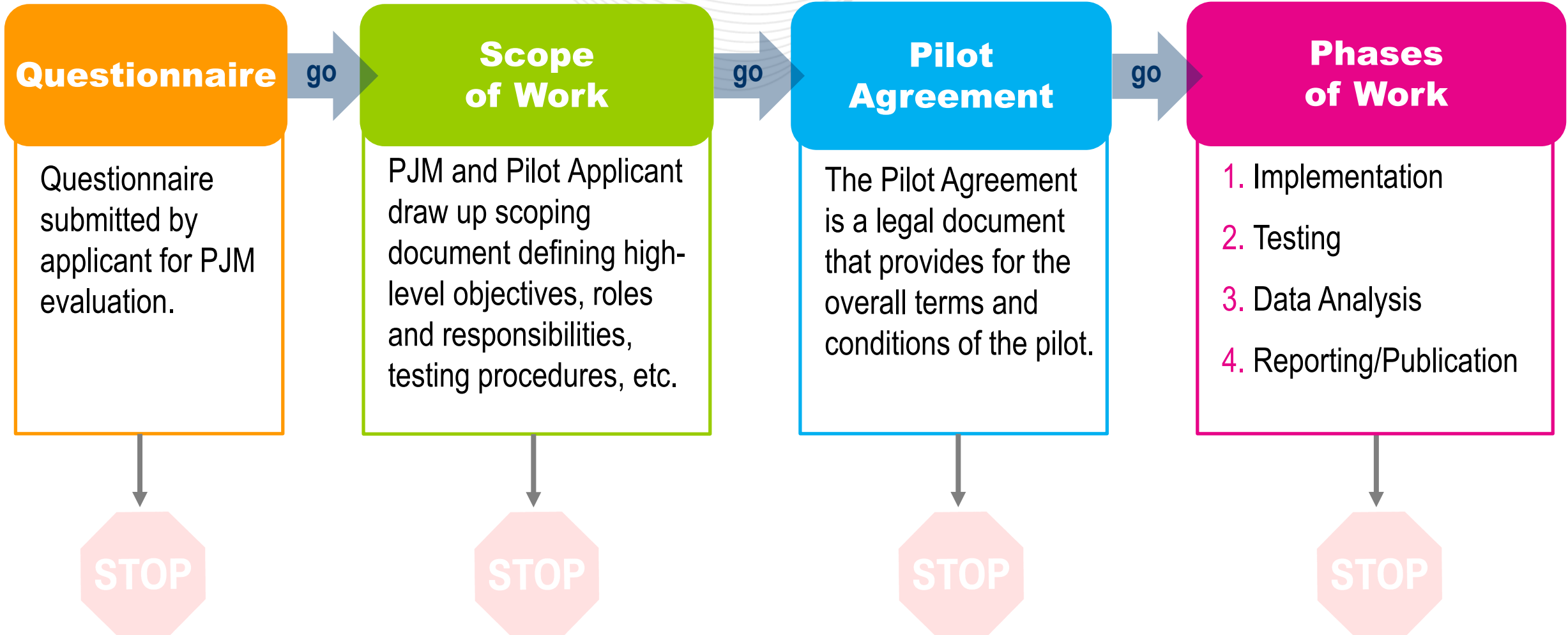


SolarCity/Tesla solar+storage system installed at PJM Milford Control Center. Early testing of today's Tesla Powerwall.



Dynamic line rating technology pilot in AEP.

Advanced Technology Pilot Program – Process





Active Pilot Projects

[“How Big Batteries at Data Centers Could Replace Power Plants”](#)

- *Scientific American, July 2018*

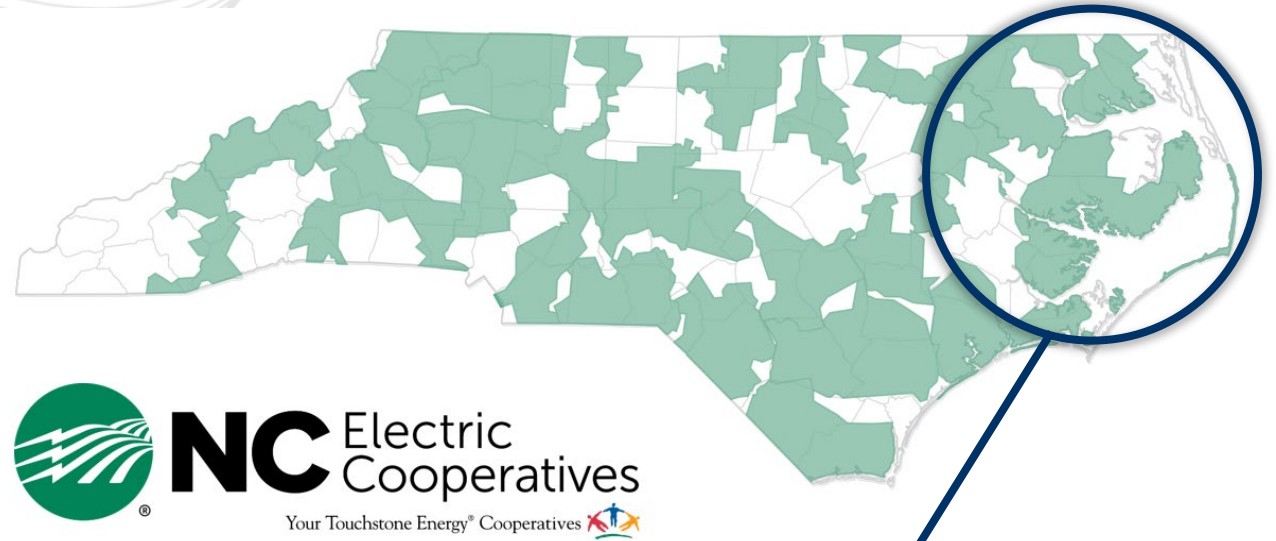
“It’s about looking at all the backup resources that we’re already installing at data centers here and around the world and saying, ‘What could we do to make these underutilized assets more of a resource for the grid and specifically a resource that could help with renewable resource integration and balancing?’”

- Brandon Middaugh, Manager for Distributed Energy, Microsoft



Photo courtesy of Microsoft

- DER dispatch utilizing a Distributed Energy Resource Management System (DERMS)
- Coordinated with PJM via simulated emergency events
- Expand on coordination between RTO and distribution operator regarding non-wholesale DER



Pilots.pjm.com

[Questionnaire](#)

[Results](#)

[Advanced Technology Pilot Program](#)

The screenshot shows the PJM website's 'markets & operations' page. The navigation bar includes 'about pjm', 'training', 'committees & groups', 'planning', 'markets & operations' (circled in orange), and 'library'. The left sidebar lists various categories, with 'Advanced Technology Pilot Program' circled in orange. The main content area features the heading 'Advanced Tech markets & operations' (circled in orange) and an 'Advanced Tech Initiatives Brochure' button. The text discusses PJM's commitment to innovation and the details of the Advanced Technology Pilot program. A 'RELATED INFORMATION' section on the right includes links to 'PJM's Advanced Technology Initiative', 'Industry Groups', and 'Pilot Projects'. A 'CONTACT INFORMATION' section provides a 'Member Community' link and phone numbers: (866) 400-8980 and (610) 666-8980.

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Advanced Technology Pilot Program



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