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Advanced Energy Conference
DSO/DSP Transition Panel

March 28, 2018

Clean Energy Fund (CEF)

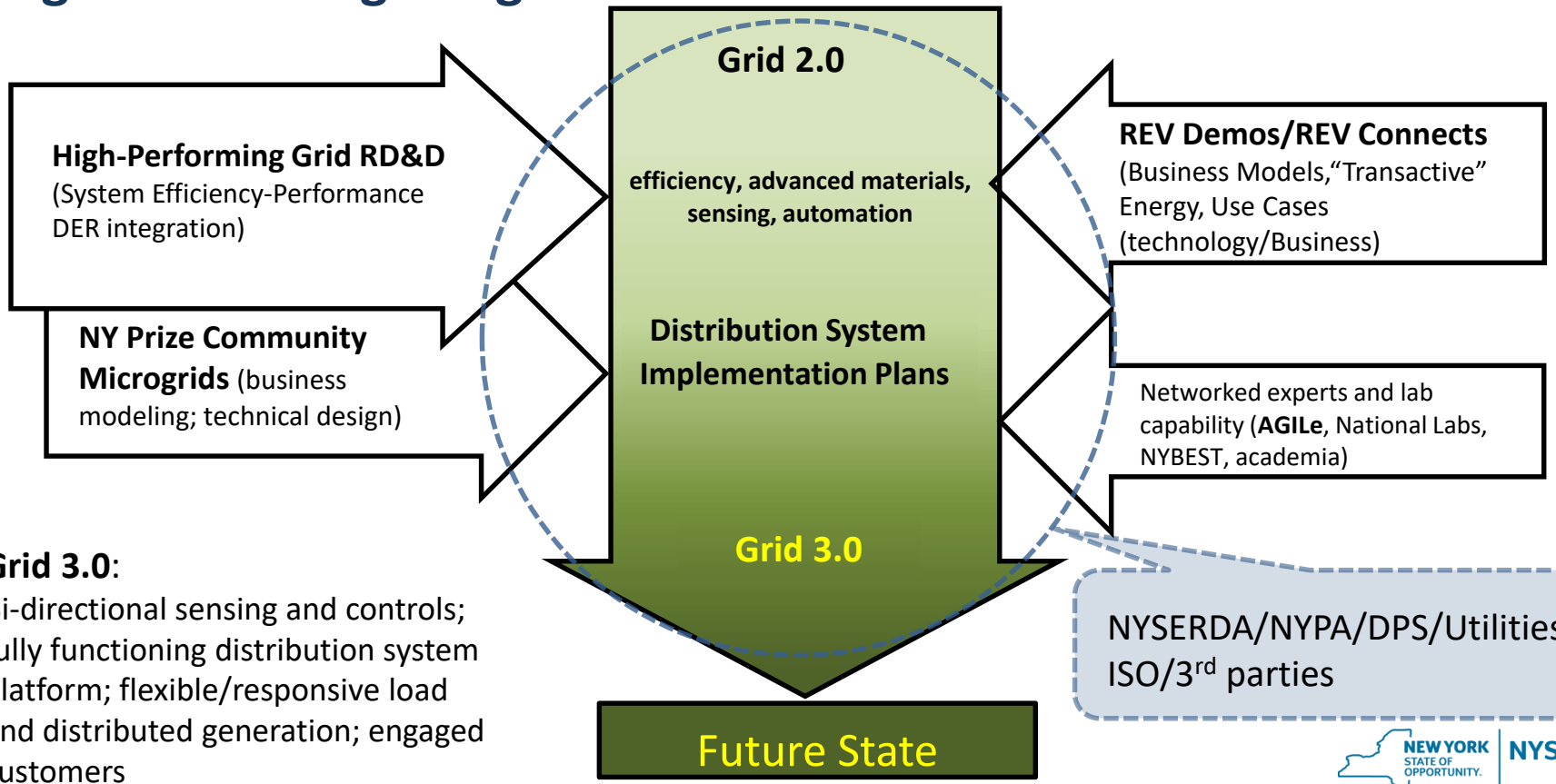
The Clean Energy Fund is central to Reforming the Energy Vision (REV)

- Accelerate the use of clean energy and energy innovation
- Drive economic development
- Reduce ratepayer collections

Individual investment chapters including:

- Grid Modernization
- Energy Storage
- Smart Buildings
- Renewable Energy Optimization
- Clean Transportation

High-Performing Integrated Grid



Grid 3.0:
Bi-directional sensing and controls; fully functioning distribution system platform; flexible/responsive load and distributed generation; engaged customers

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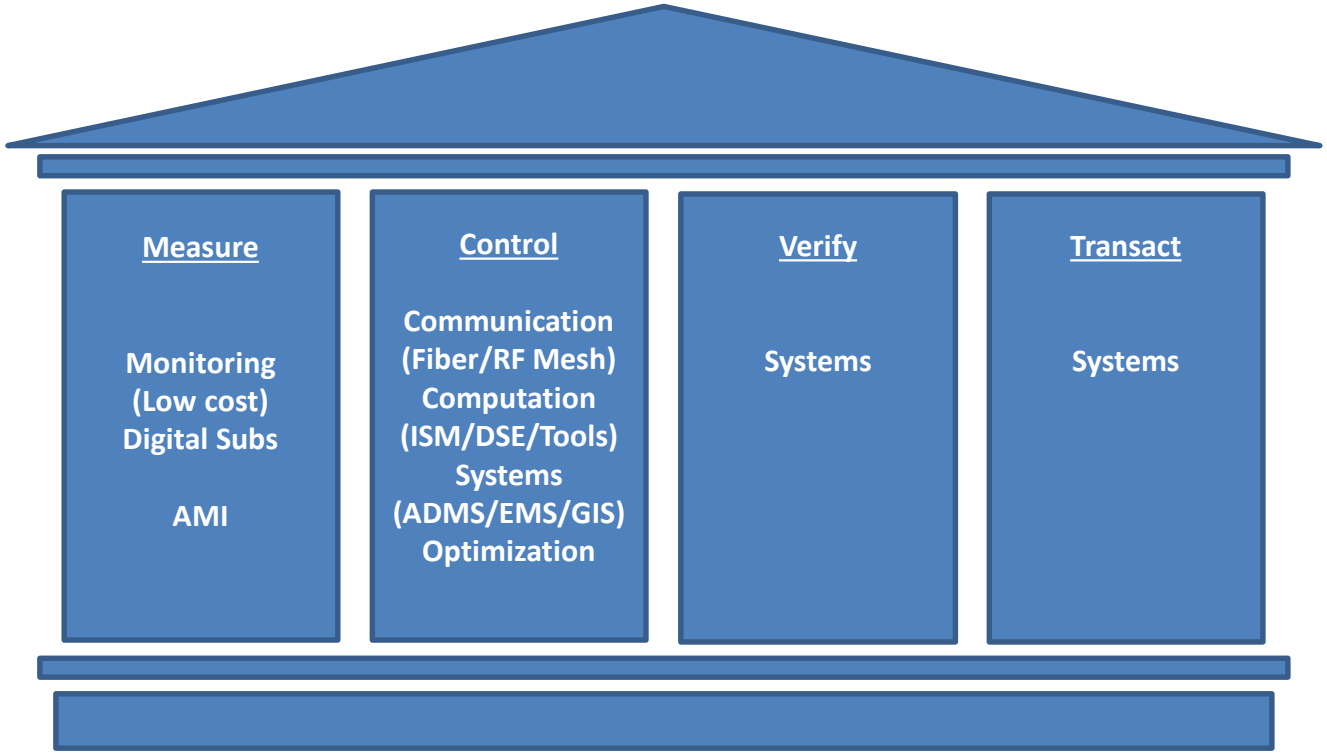
Smart Distribution Systems – DSO/DSP



Smart Distribution & Transmission Systems – Objectives

- ✓ Increase system efficiency & asset utilization
- ✓ Integrate /enable large scale RE and DER
- ✓ Sync w/smart load, smart transportation and advanced clean power technologies(de-carbonize transportation)
- ✓ Support prediction of faults/quicken restoration
- ✓ Increase resiliency, reliability

Smart Distribution & Transmission Systems – Strategy

Invest in research that accelerates realization of an advanced, digitally enhanced and dynamically managed electric grid that results in more efficient asset utilization (e.g., reduced operating margins, reduced power demands, reduced energy losses) and improved reliability, and resiliency to climate change induced weather-events.

- ✓sensing, communications, diagnostics and controls
- ✓advanced/improved products and materials (physical asset protection and improved functionality
- ✓grid visualization, communication and control systems associated with the interoperability of DER
- ✓ modify regulatory paradigm to ***align incentives*** with goals

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Grid Modernization Program

Commitment Budget		2017	2018	2019	2020	2021	2022	Total
DER Integration		$3 M	--	--	--	--	--	**$6 M**
High Performing Grid		$20 M	$20 M	$16 M	$16 M	$16 M	$16 M	**$110 M**

- Note: DER Integration rolls into High Performing Grid in 2018
- Grid Modernization Investment Chapter: https://www.nyserda.ny.gov/About/Clean-Energy-Fund

Recent funding opportunities

- PON 3404 – DER Integration (2017)
- PON 3397 – High Performing Grid (2017)

Grid Modernization Program

PON 3397 – High Performing Grid

- 21 proposals selected for award
- Approximately $11.5M in total
- Awards focused on
  - Energy Storage
  - DER Integration
  - Transmission
  - Distribution

Grid Modernization Program

PON 3404 – DER Integration

- 11 proposals selected for award
- Approximately $2.5M in total
- Awards focused on overcoming specific interconnection issues
  - Neutral voltage shift (3V0)
  - Islanding
  - Active variable curtailment
  - Automation of interconnection studies

Grid Modernization Program

Electric Power Transmission and Distribution (EPTD)
Program Opportunity Notice (PON) 3770

High Performing Grid Program
Up to $15 Million Available

Rolling submissions are being accepted until June 27th, 2018 5:00 PM Eastern Time for Concept Papers and up until July 25th, 2018 5:00 PM Eastern Time for Full Proposals

Advanced Monitoring / Measurement / Controls
Distributed Energy Resources Integration/ Interconnections
Advanced Materials / Cabling / Conductors
Advanced Planning / Operations / Design / Forecasting Tools
Innovative Cybersecurity / Data Analytics
Transmission and Distribution Automation / Management
Advanced Power Electronics / Smart Inverters
Advanced System Modeling / Applications / Algorithms
Advanced Sensors / Devices / Systems
Advanced / Adaptive Protection Systems / Controls

Category	Maximum NYSERDA Funding Per Award	Total Project Cost Share
Category A: Technology Feasibility Studies	$100,000	25%
Category B: Product Development	No limit	50%
Category C: Research Studies	$ 400,000	25%
Category D: Engineering Studies	$ 400,000	25%
Category E: Demonstration Projects	No limit	50%

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NY Prize Award Process

All **communities enter/apply to competition and are evaluated at each stage by external judges**

Critical project partners: Municipalities and Utilities

Evaluation Panel(s)

Threshold ***Qualitative*** Criteria	**Stage 1** Awards to Conduct Feasibility Assessments	**83 awards for studies** (up to $100K)	$8 m
Threshold ***Audit Grade Design Criteria***	**Stage 2** Feasibility Evaluated Awards for Audit Grade Design	**11 Awards** (up to $1M)	$11 m
Audit Grade Design Review	**Stage 3** Designs Evaluated Awards for Build-out/ Operation	**Up to 5 Awards** (Up to $5M)	$20m

Allocations

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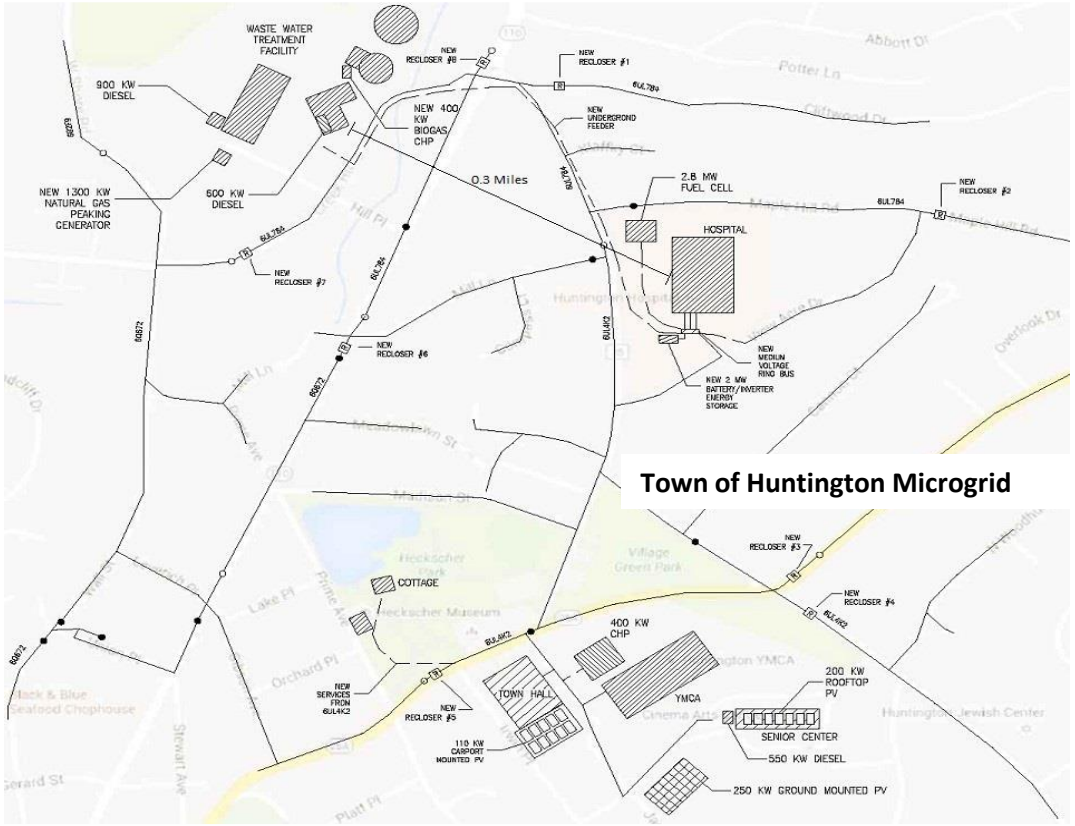
Stage 2 Awardees

- Empire State Plaza (Albany)
- University Heights (Albany)
- City of Syracuse
- Town of Huntington (Long Island)
- Village of Rockville Centre (Long Island)
- Village of Freeport (Long Island)
- East Bronx Healthcare (Bronx)
- Clarkson Avenue (Brooklyn)
- Sunnyside Yard (Queens)
- City of Binghamton
- Buffalo-Niagara Medical Campus (Buffalo)



Town of Huntington Microgrid

almost $200 million in capital investments
Project descriptions can be found @:

https://www.nyserda.ny.gov/-/media/Files/Programs/NYPrize/ny-prize-stage-2-awarded-projects.pdf

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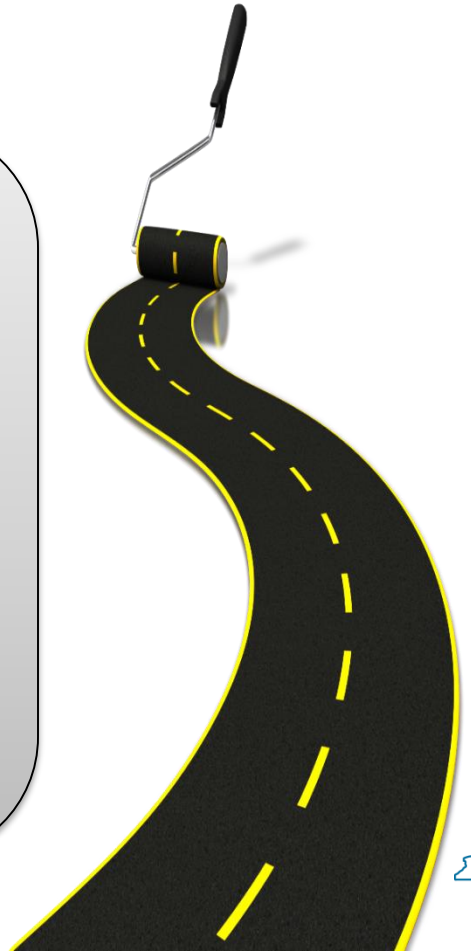
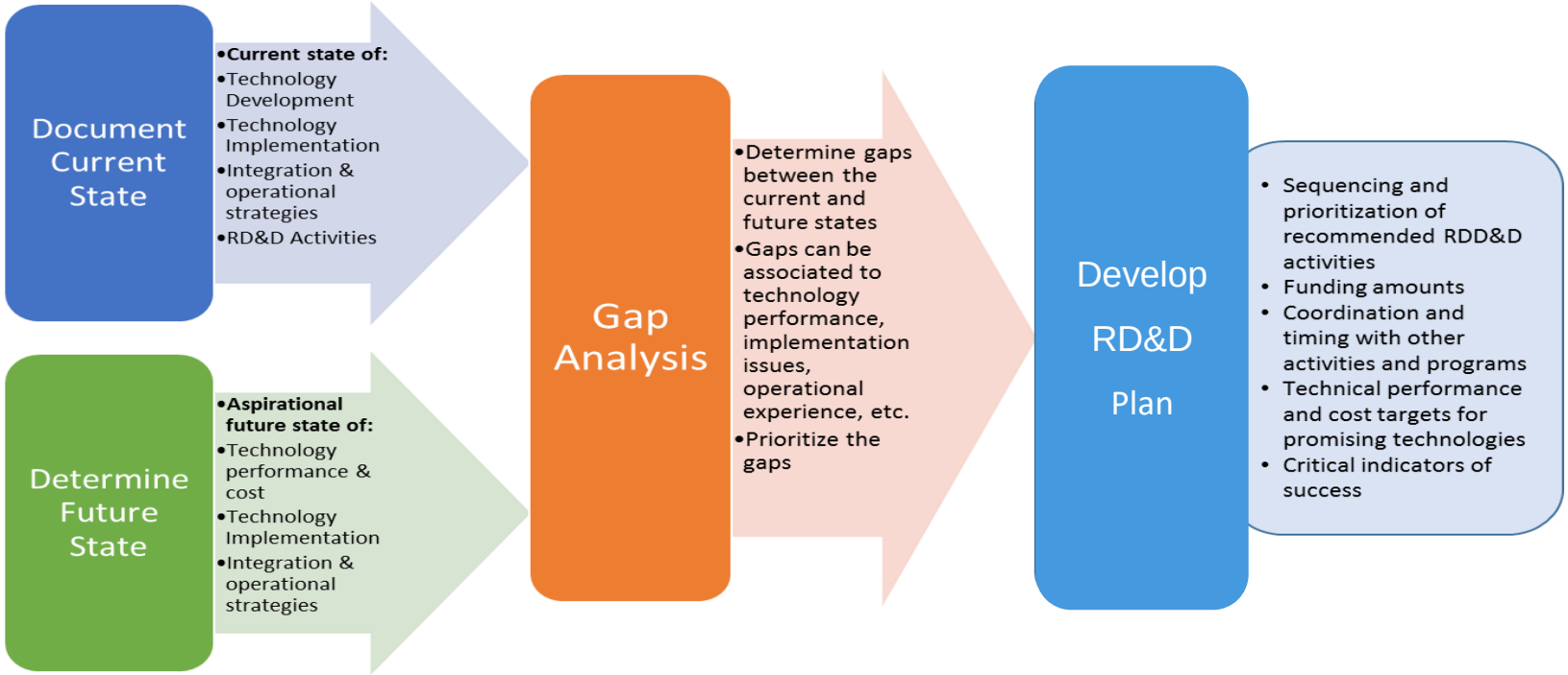
Grid Modernization Roadmap

Build a Roadmap for the development of models, methods, and technologies needed to plan, deploy and operate an advanced electric distribution system.

Outcome will provide guidance to NYSERDA research, development, and demonstrations (RD&D) supporting the modernization of the NY electric distribution system.



Grid Modernization Roadmap



Thank You

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