



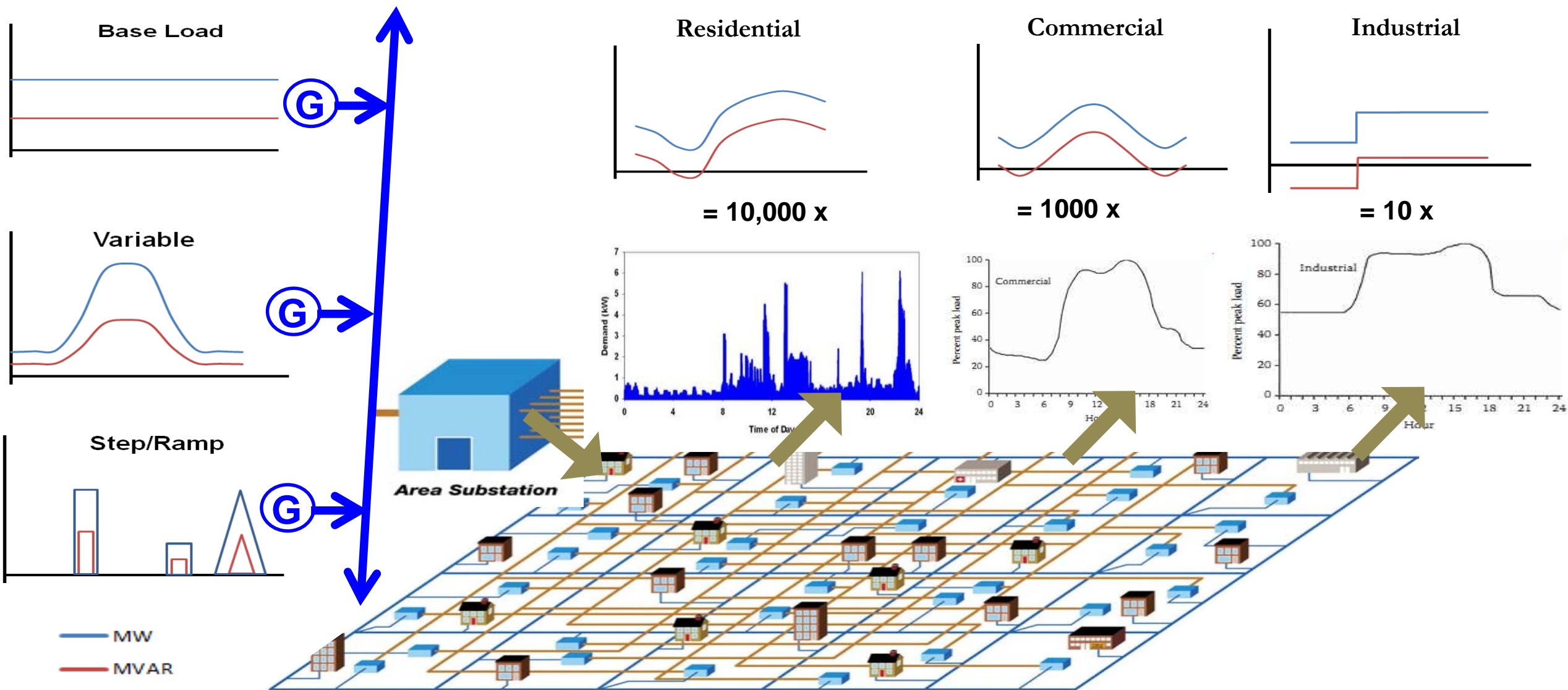
Making the DSP/DSO Transition

Damian Sciano
AEC Conference, March 28, 2018

What does the future hold

- Current T&D system
- Future Opportunities and Challenges
- Building the DSO/DSP
 - Development of DERMS
 - DSP Elements
 - Grid transformation
 - NWS
- Demos
- Closing thoughts

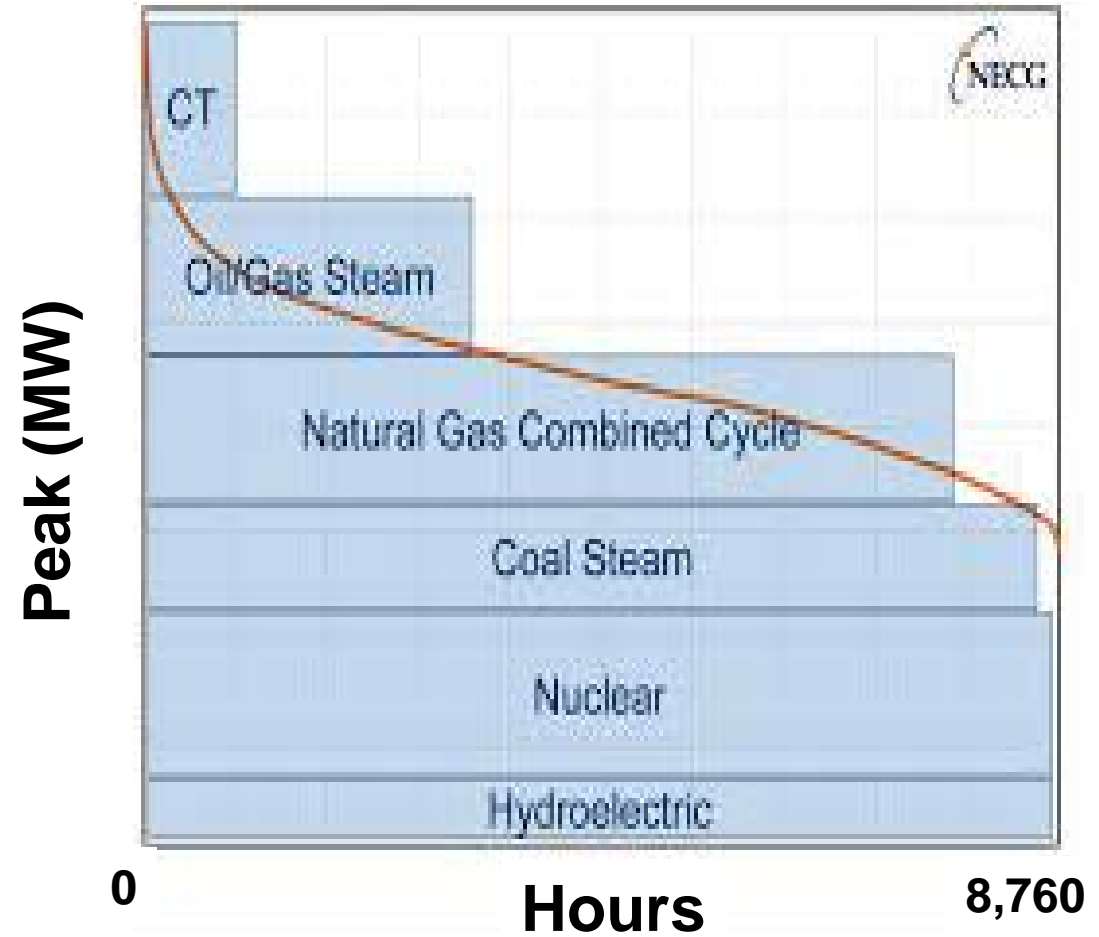
Traditional T&D matches generation with aggregated load



Challenges of traditional T&D

- Must be produced on demand
 - Limited energy storage options
 - Travels at the speed of light
 - Means some assets have very low utilization factors
- No cost effective means (on the horizon) of transporting it wirelessly
- Very tight usage parameters
 - Voltage
 - Frequency
- Invisible

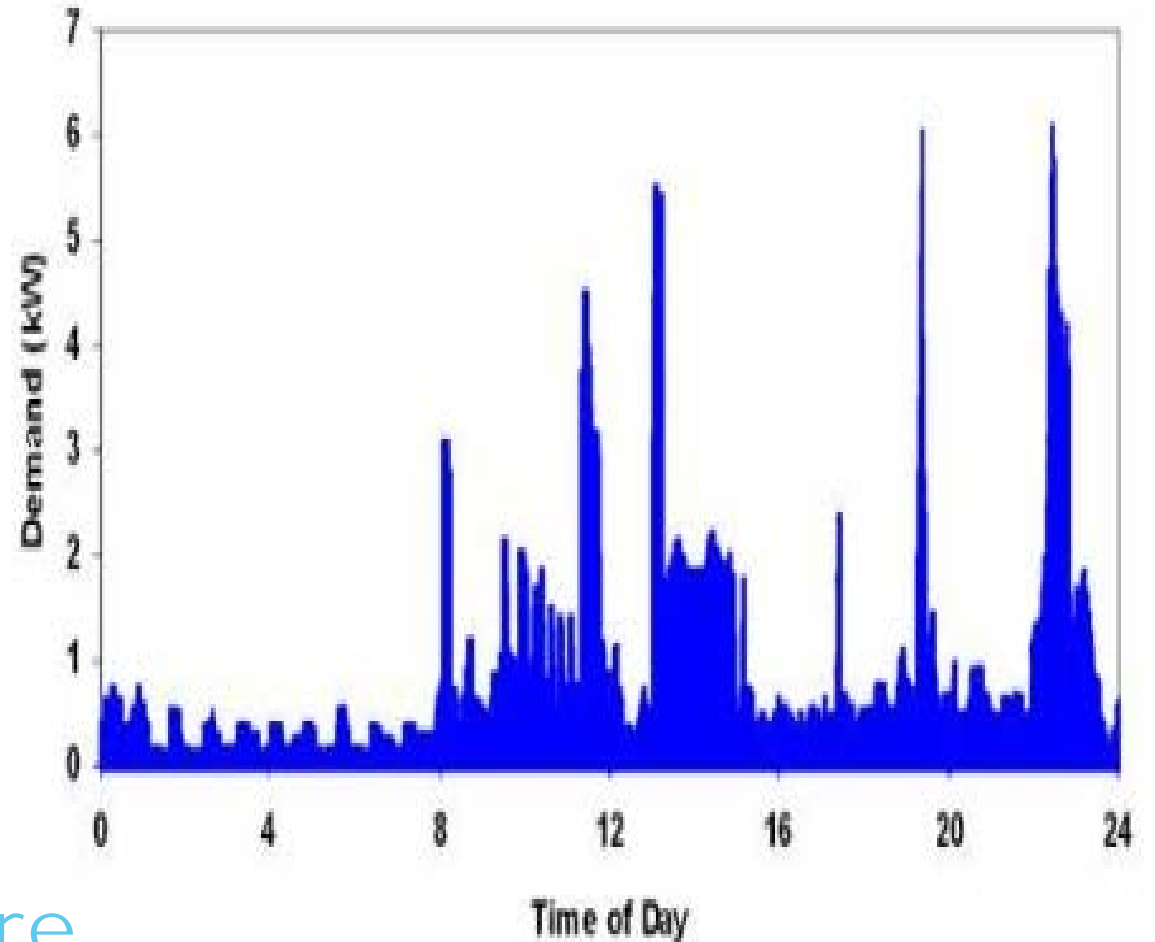
Hourly demand from max to min



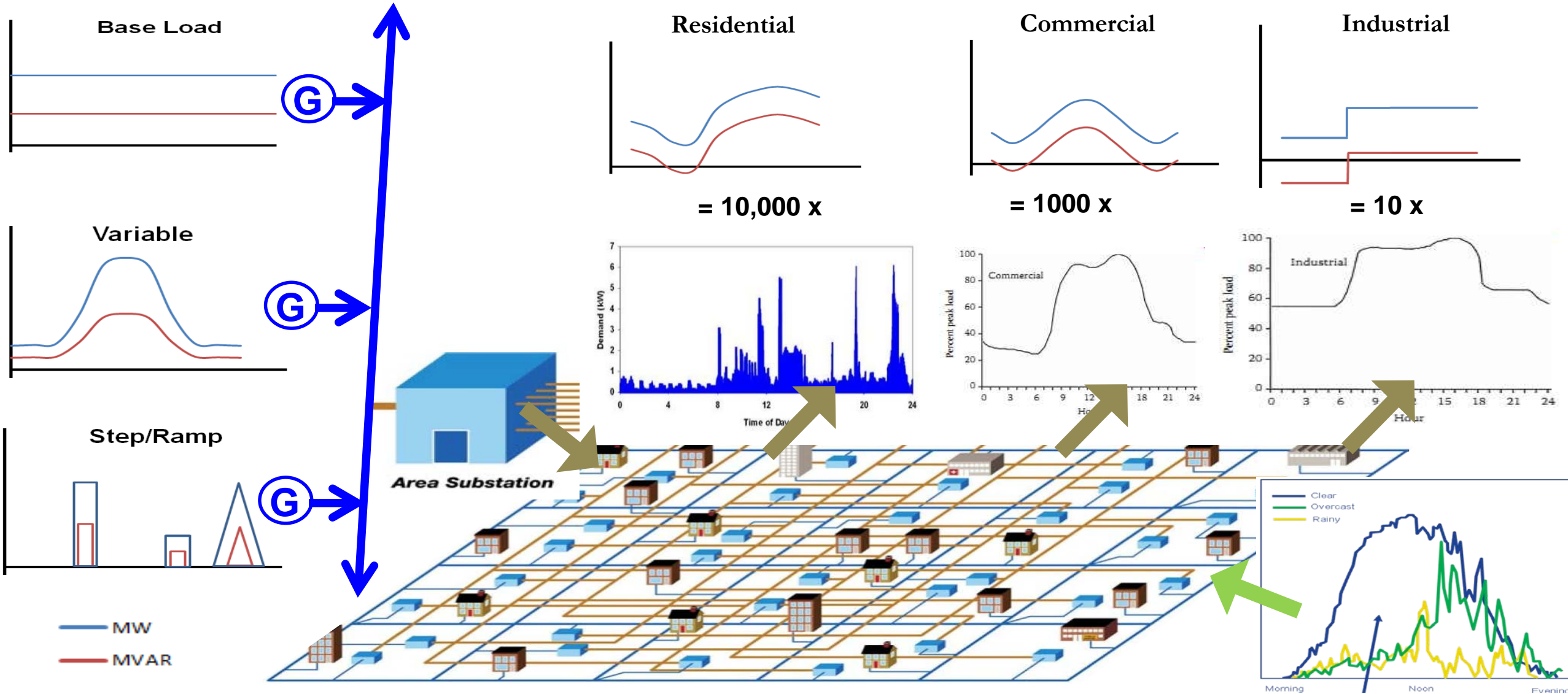
Customer usage patterns are also challenging

- Customers also have limited energy storage options
- Appliances have become low cost and plentiful
- There are limited price signals to alter usage patterns
- Electricity is universally available and relatively affordable

These patterns are unlikely to change in the near future



Transitioning to DSP/DSO will be an evolution

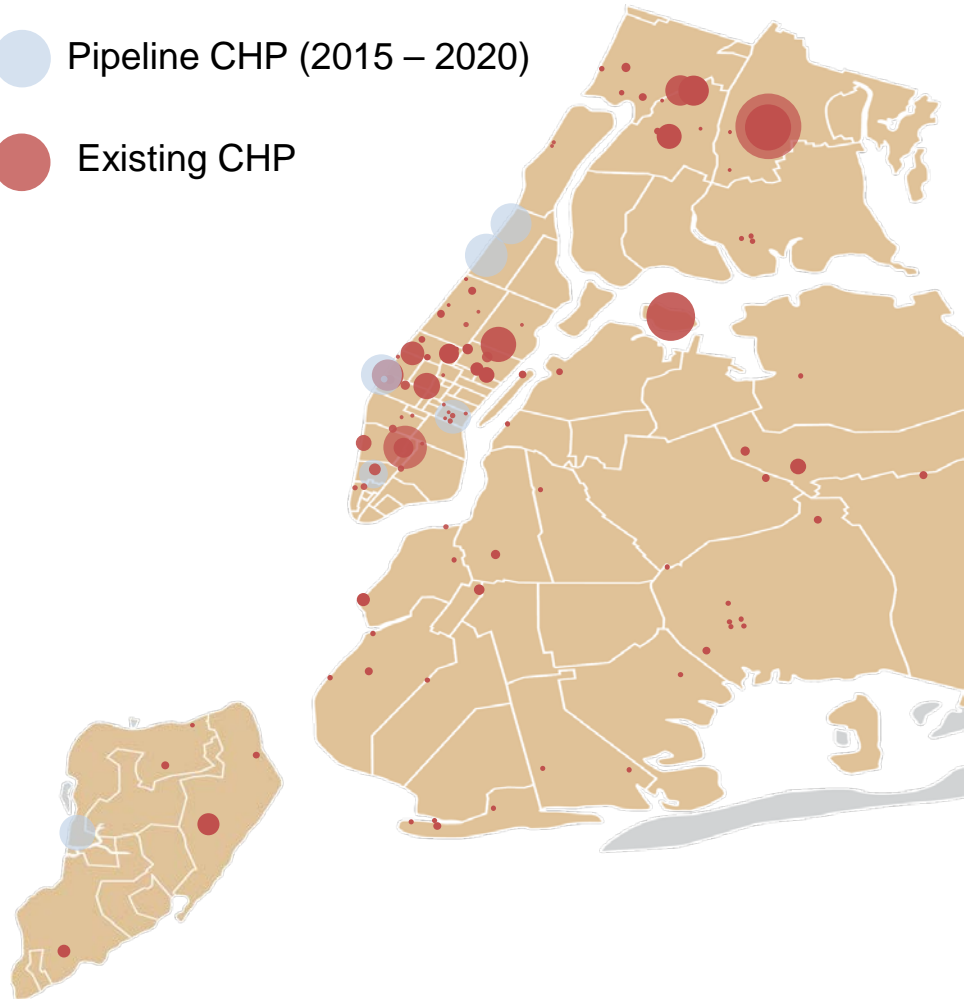


Dispatch & control moves from dozens to thousands

CHP Landscape

● Pipeline CHP (2015 – 2020)

● Existing CHP



Solar Landscape

Account Type

■ Commercial

■ Public Buildings

■ Residential

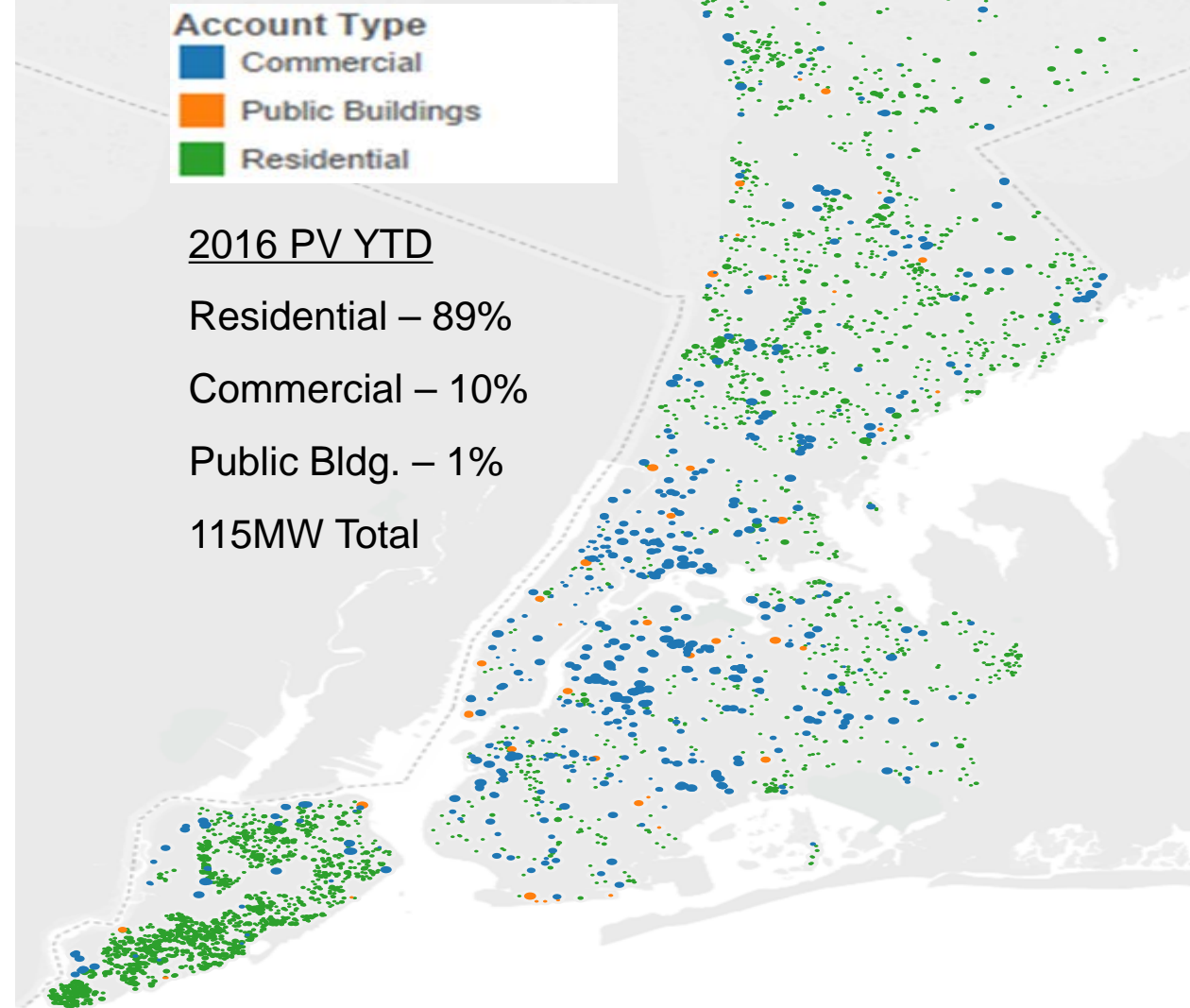
2016 PV YTD

Residential – 89%

Commercial – 10%

Public Bldg. – 1%

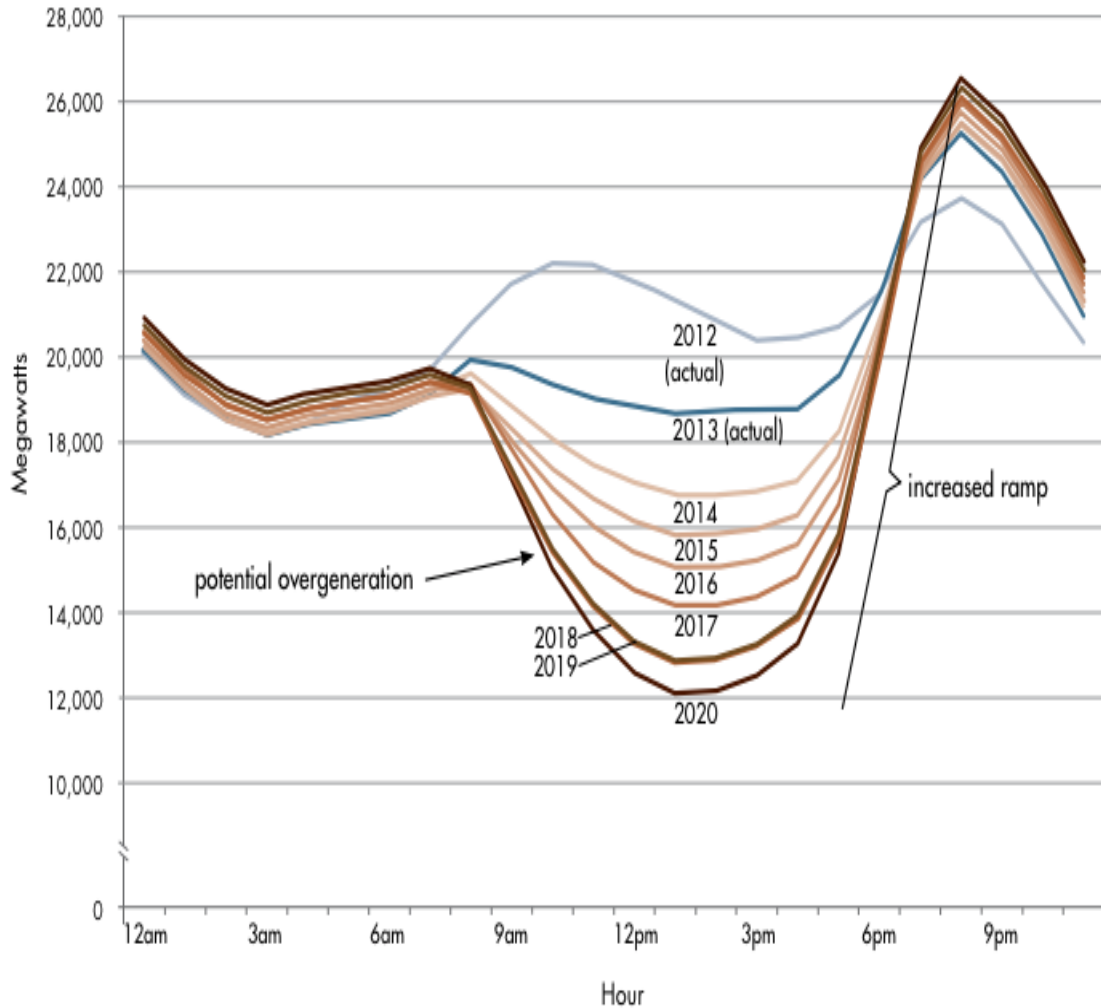
115MW Total



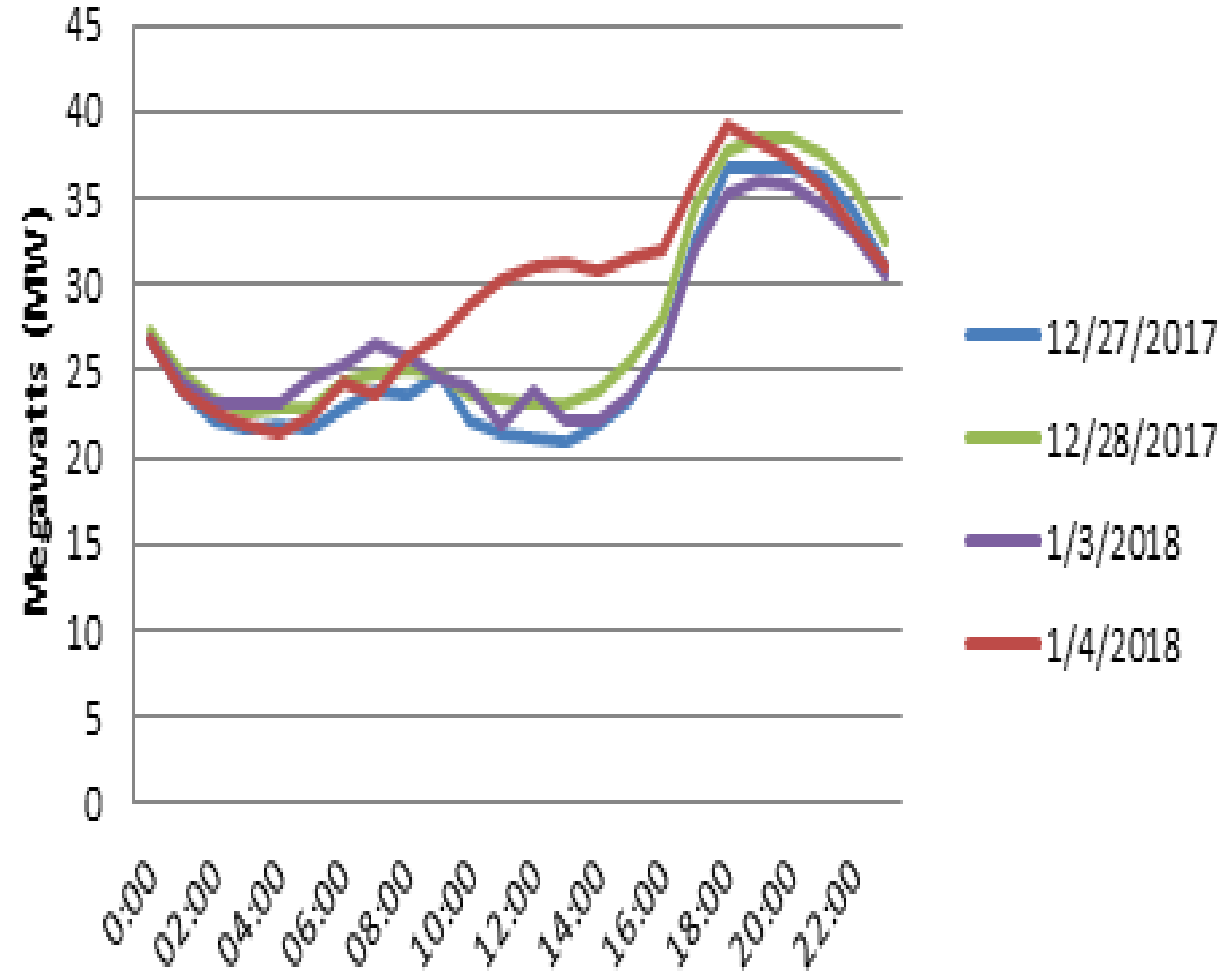
DERMS will help enable this

Energy storage will be a key enabler

California System – March 31st



Staten Island, NY Network



<http://www.consumeraffairs.com/solar-energy/solarcity.html>

Process Before and After DER

Forecasting

- Organic Growth
- New business
- EE/DR
- Electric Vehicles
- **DER**

Planning

- Transmission
- Area substation
- Distribution
- New business
- **Publicize needs**

Construction

- Solutions built
- **Market to build DER solution**

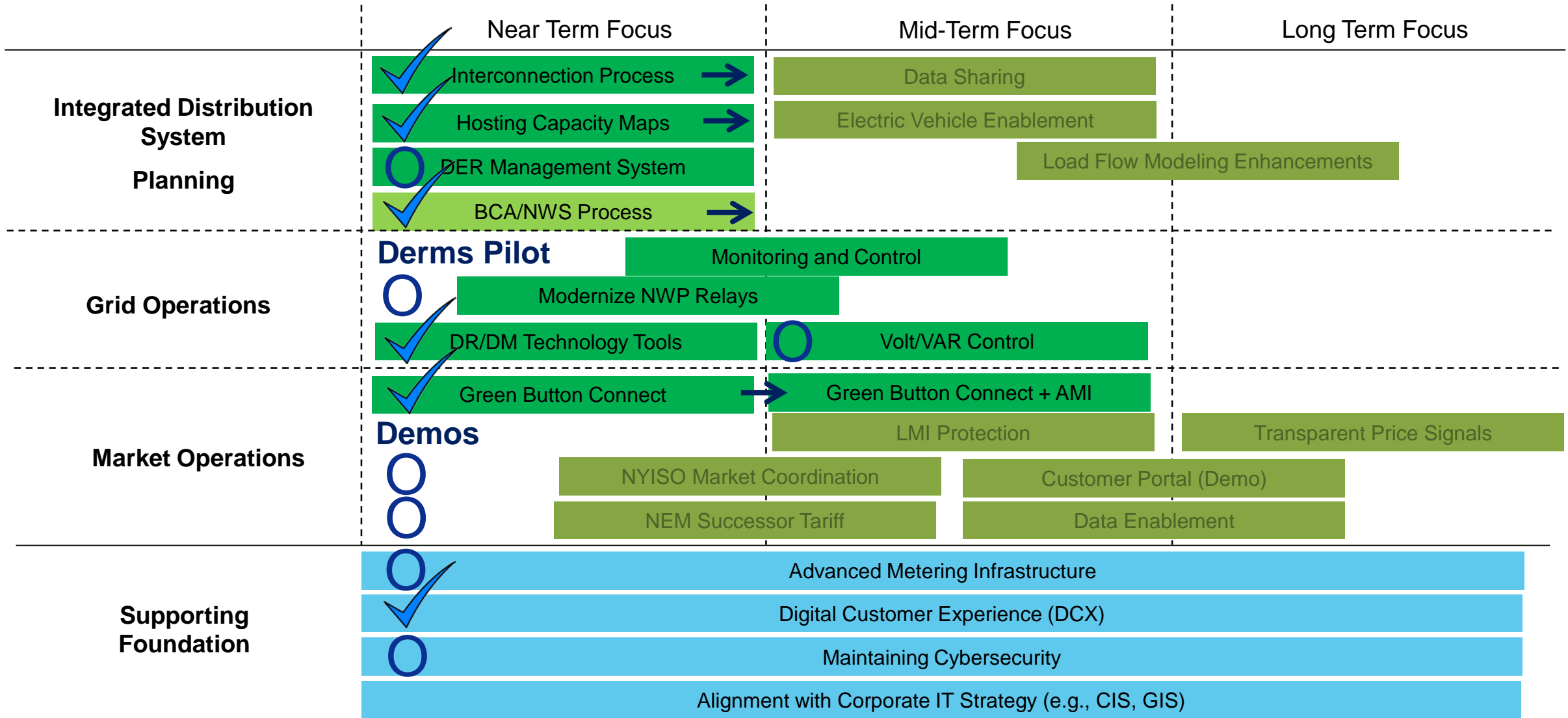
Operations

- Regional control centers
- Energy control center
- **DSP to map, measure, monitor, control DER**

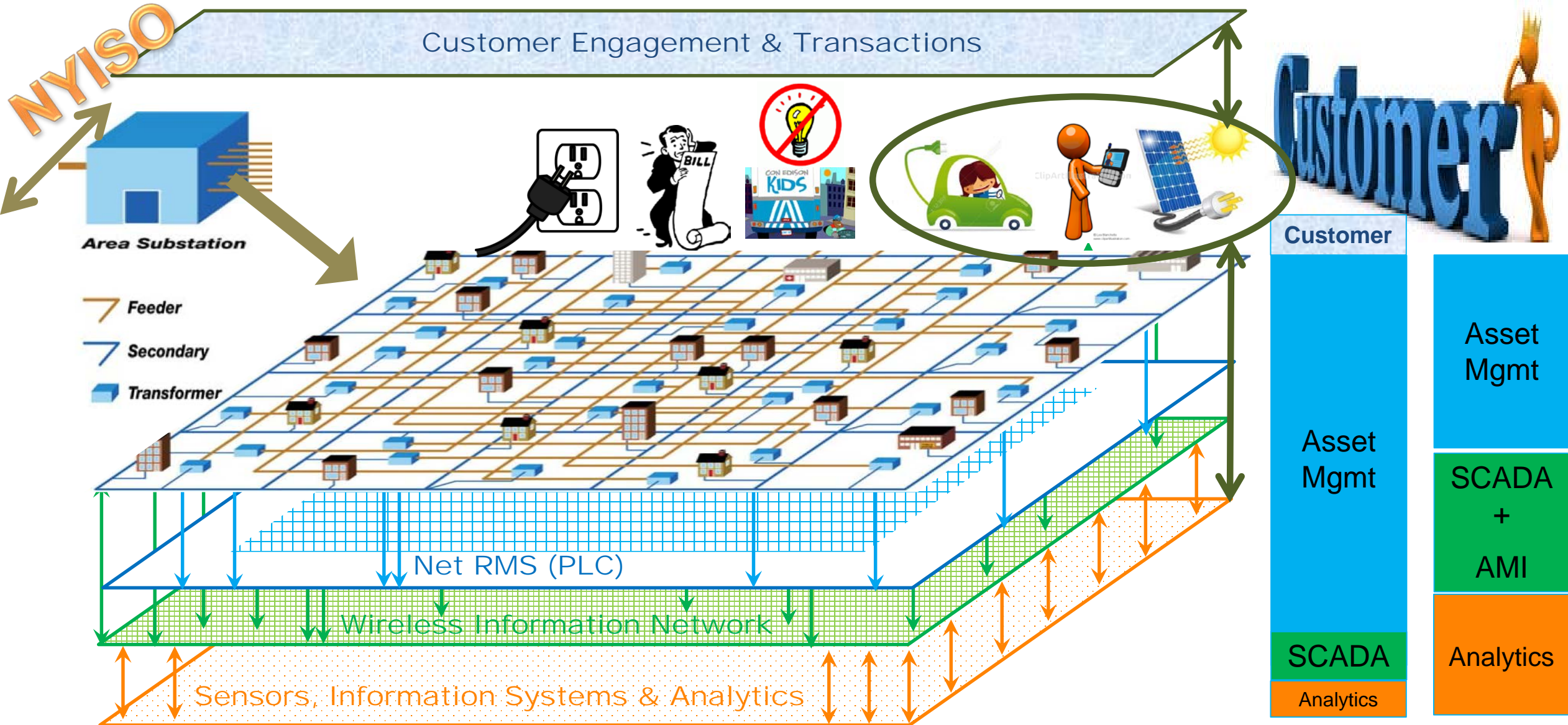


The Distributed System Platform (DSP) will enable this integration via people, process and technology

Capital investment progress going into 2018



Moving from delivering kWh to a platform of services

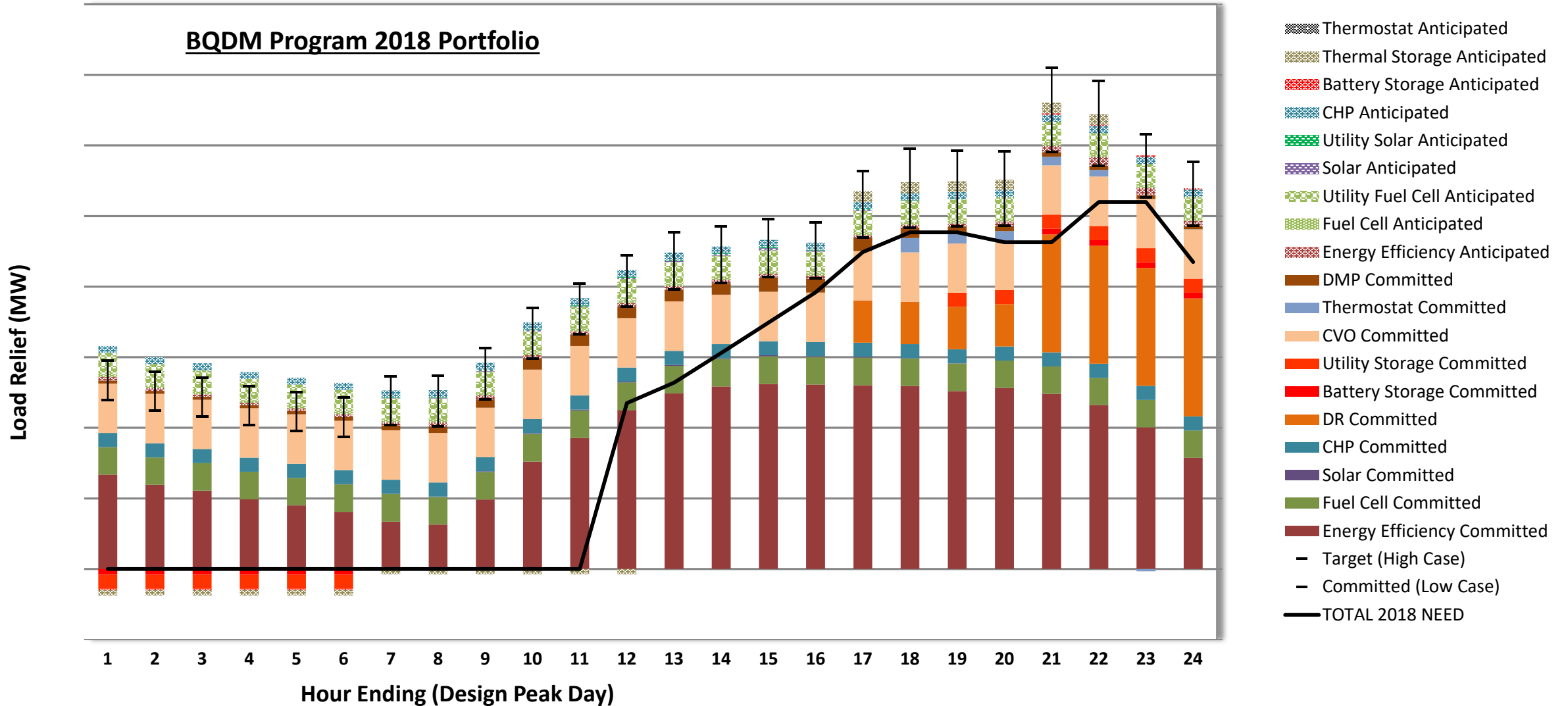


NWS provides a win-win-win proposition and helps expand the market


ACRONYMS

- DR – Demand Response
- CHP – Combined Heat and Power
- DMP – Demand Management Program
- CVO – Conservation Voltage Optimization
- C&I – Commercial and Industrial

BQDM Program 2018 Portfolio



NWS Solicitations from www.coned.com/nonwires:

					Contact Us Language		
		Account & Billing	Services & Outages	Save Energy & Money	Our Energy Future	<input type="text"/> Search	Log In or Register
Projects	Current Status	Documents					
Primary Feeder Relief - Columbus Circle	RFP closed. Under evaluation.	RFP Questionnaire					
Primary Feeder Relief - Hudson	RFP closed. Will not proceed.	RFP Questionnaire					
Water Street Cooling Project	RFP closed. Under evaluation.	RFP Questionnaire					
Primary Feeder Relief - Williamsburg	RFP closed. Under evaluation.	RFP Questionnaire					
Cable Crossings (Flushing)	RFP available	RFP Questionnaire					
Plymouth Street Cooling Project	RFP closed. Under evaluation.	RFP Questionnaire					
Load Transfer W 42st	RFP available	RFP Questionnaire					
W. 65th Street #1	Project deferred due to decrease in the projected load	Project Description					
Glendale Project	BQDM Auction rules available	2019 BQDM Program Extension Auction Requirements 2019 BQDM Program Agreement					

Demonstration Projects are helping to inform future DSP

Pilots vs. Demonstrations



DEMONSTRATIONS:
Demonstrations should validate the business case for moving from small-scale tests to fully integrated market deployment, and can test all topic areas in an integrated project

PILOTS:
Pilots should be focused on answering technical questions before moving on to more business-focused demonstrations

Current Demos:

- Customer Portals
- Electric Vehicles
- Energy Storage
- Lower Middle Income

Closing Thoughts

- The 2018 DSIP will describe our progress to date & future plans
- We believe NWS is a critical component of the DSP
- Demonstration programs will inform future plans

