

DER Management Systems Overview

Prepared for:



September 2014



RESEARCH



Agenda

1) About GTM

2) Understanding DER Management

- The Distribution Grid
- The DERMS Concept
- Vendor Ecosystem

3) An Overview of North American DERMS

- North American Deployments
- DERMS Market Size and Forecast

Company Overview

Greentech Media provides a fully integrated platform for news, research and events in the greentech business-to-business space. Greentechmedia.com has become the "go-to" source for independent content and analysis covering the end-to-end energy market.



News/Online



Research



Conferences

Our Audience:

Website Traffic:

- 800,000+ pageviews per month
- 250,000+ unique visitors per month

Registered Users:

- 38,000 Solar
- 29,000 Grid
- 6,000+ Efficiency
- 110,000+ Total Registered

Social Media:

- 6,000+ facebook
- 34,000 twitter
- 95,000 YouTube

iPhone App:

- 10,000+ visitors a month
- 150,000+ app pageviews
- Over 15,000 downloads

Greentech Media's content coverage, analysis and writers are considered a top source from all the mainstream media. Our stories have been featured in:



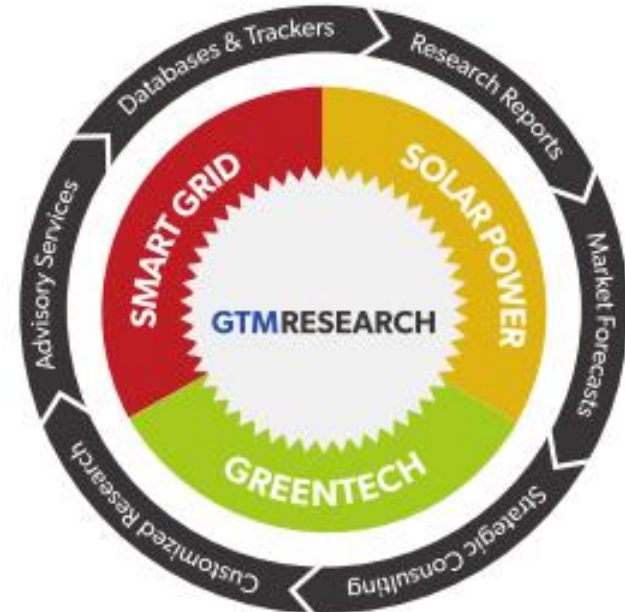
Company Overview

GTM Research, a Greentech Media company, provides critical and timely market analysis in the form of concise and long-form market research reports, monthly newsletters and strategic consulting services. Our analyst team combines diverse backgrounds in the solar, smart grid, energy, environmental, emerging technology, investment banking, information technology and strategic consulting sectors. Complementing decades of real world experience, the staff holds advanced degrees in finance, engineering, public policy, law and environmental management. GTM Research is situated in the major global markets for greentech innovation worldwide, with offices in San Francisco, Boston, and New York.

www.gtmresearch.com

- Provides economic and strategic analysis for the global renewable energy and electricity industries
- Delivers critical intelligence and advisory services
- Improves business operations and facilitates informed decision making
- Analyst team includes experts across the green technology value chain
- Valued for our objective stance, integrated economic analysis and flexibility
- Stands at the forefront of the clean energy industry with specific expertise in solar power, the Smart Grid, advanced transportation, and energy efficiency

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"Greentech Media has been a long-time supplier of market data and forecasts that we use to help keep our senior leadership informed. GTM's US state-level research in particular is unique in the marketplace. GTM's analysts are eager to help us maximize the value of their data, and their industry events are worth the trip."
 - GTM Research Client

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About Us



Omar Saadeh (saadeh@gtmresearch.com)

Senior Analyst, Grid Research

Omar Saadeh is a Senior Grid Analyst at GTM Research. He has completed the requirements for a Master of Engineering in power engineering at McGill University, where he was awarded a Graduate Excellence Fellowship and contributed as a staff writer to The McGill Daily. As a bilingual English and French speaker, Omar was a building efficiency sales associate at Johnson Controls in Montreal prior to grad school.

Omar holds a bachelor's degree in electrical engineering from McGill University with a concentration in power engineering and minor in economics. He has published research for the Institute of Electrical and Electronics Engineers (IEEE) and the Conseil International des Grands Réseaux Électriques (CIGRÉ), focusing on the advantages of plug-in electric vehicles and economic dispatch of distributed resources in microgrids respectively.

Client Snapshot

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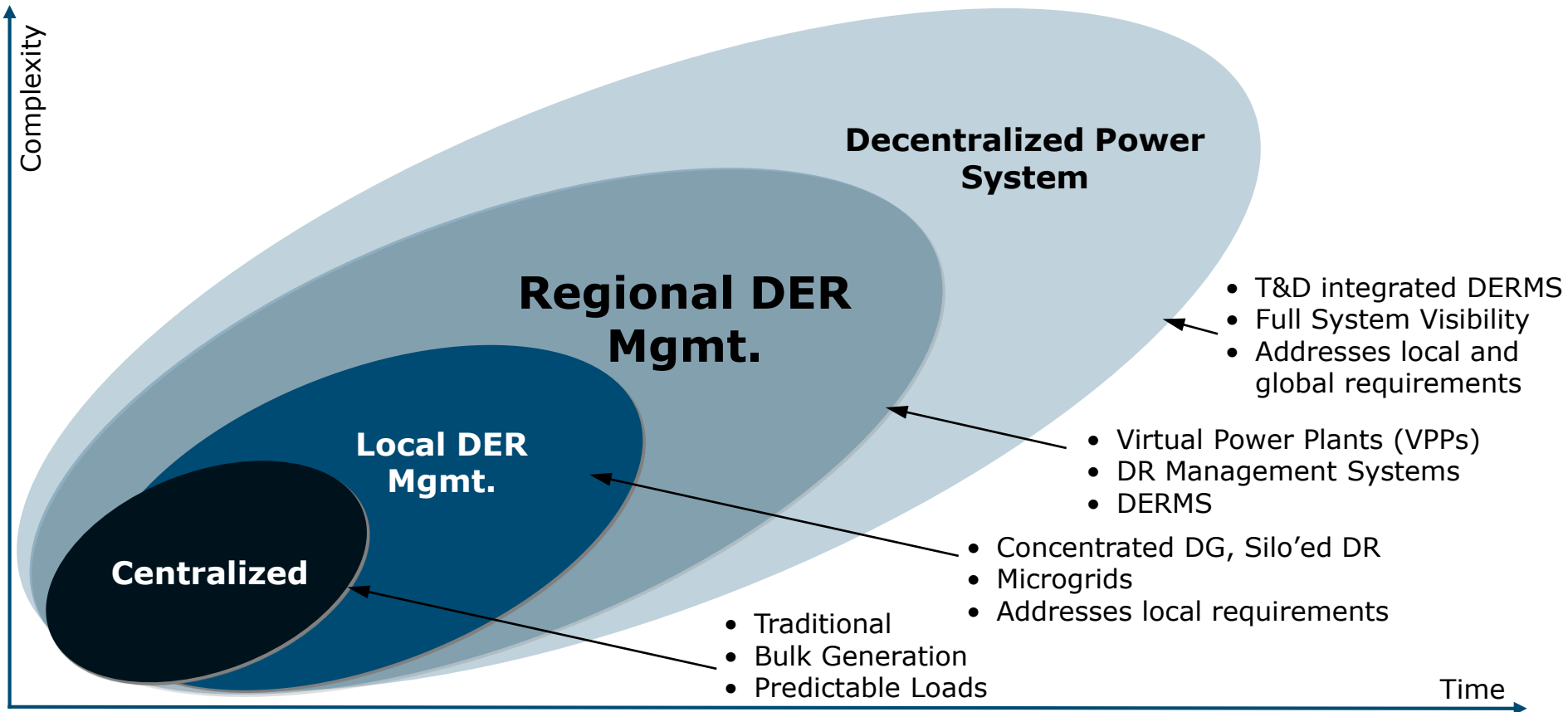


PRESS



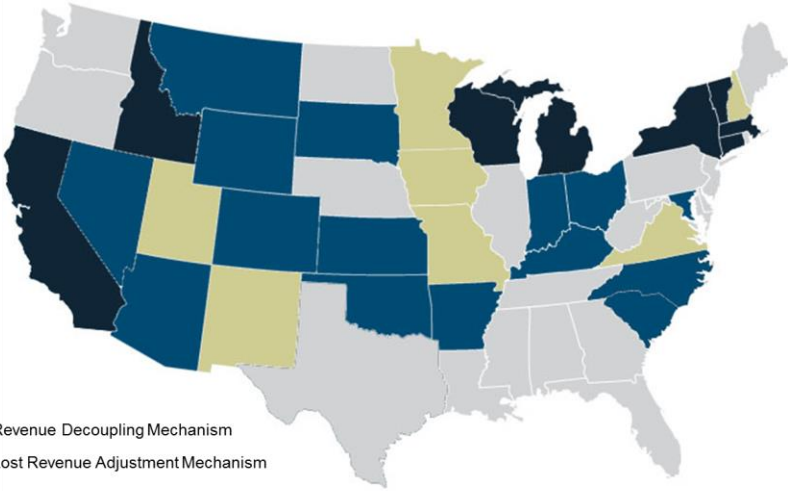
Understanding DER Management

Evolution of DER Management



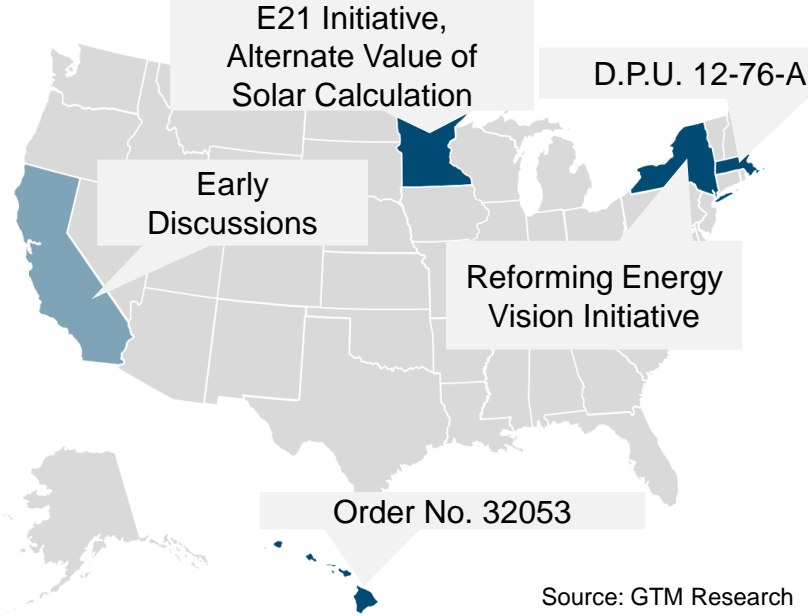
NY, HI, CA, and MA Lead Regulatory Overhaul

Popular “New” Regulatory Tools



Source: Edison Electric Institute

Laying the Ground Work for Revolution



Source: GTM Research

- Regulators are considering the effects of distributed energy resources on rates, reliability, revenue, and regulation
- New rate structures, deployment of technology by fiat, and the further extension of the energy and power market into the distribution grid are likely to follow.

Implementing DER Management Systems

Level 3

Mixed Asset DERMS

- Demand and Supply
- Locally Optimized DERs

Level 2

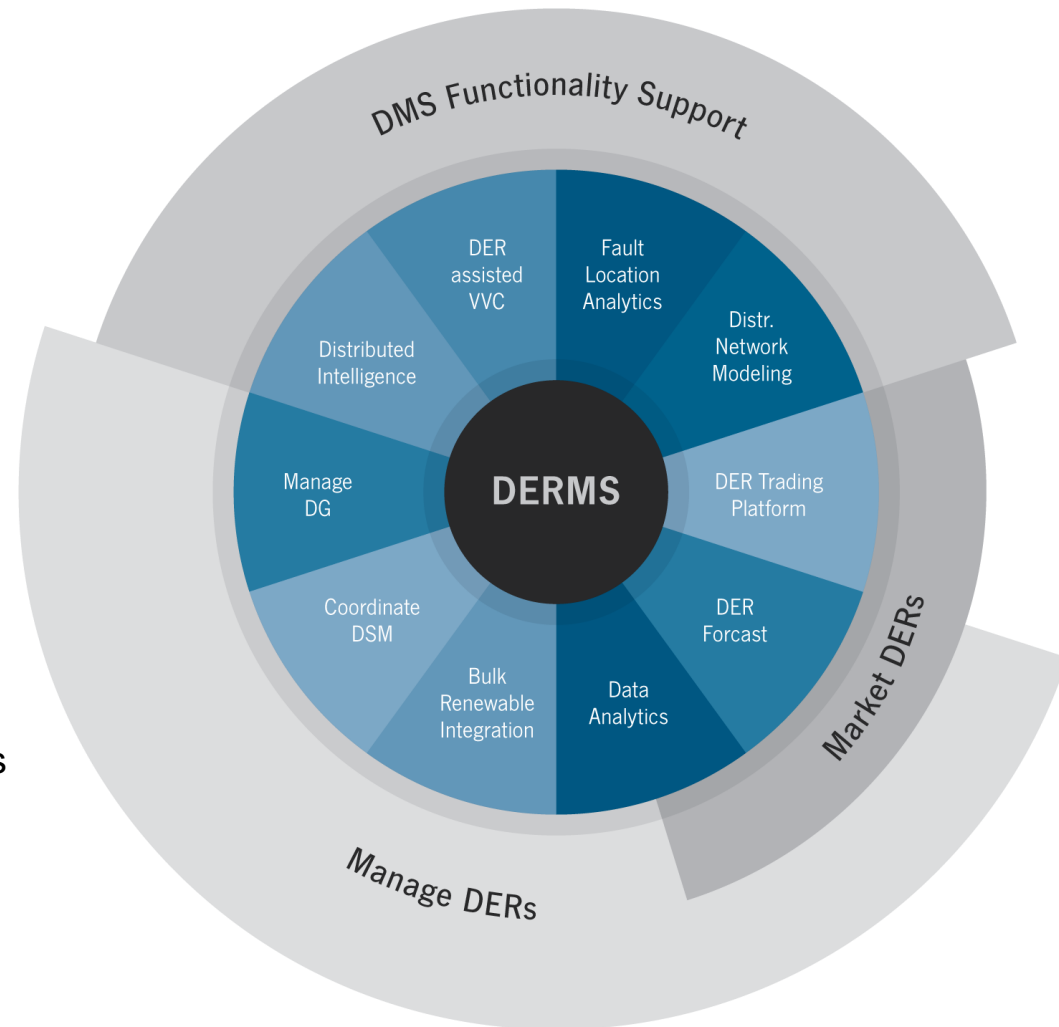
Supply-Driven DERMS

- Generation Assets
- Locally Optimized DERs

Level 1

DR-Driven DERMS

- Integrate Bulk Renewables
- DSM to “smooth out” intermittencies



Opportunities

- Enable DG Market Participation (VPP, DER Marketplace)
- Simple Interconnection Process

- Market DSM Up/Down Flexibility
- Economic Incentive Signals

- Dynamic Balancing
- Load/Gen. Following Resources

- Rapid Data Management
- Volt-VAR Support

DG ELECTRICITY SALES

1

DR REVENUES

1

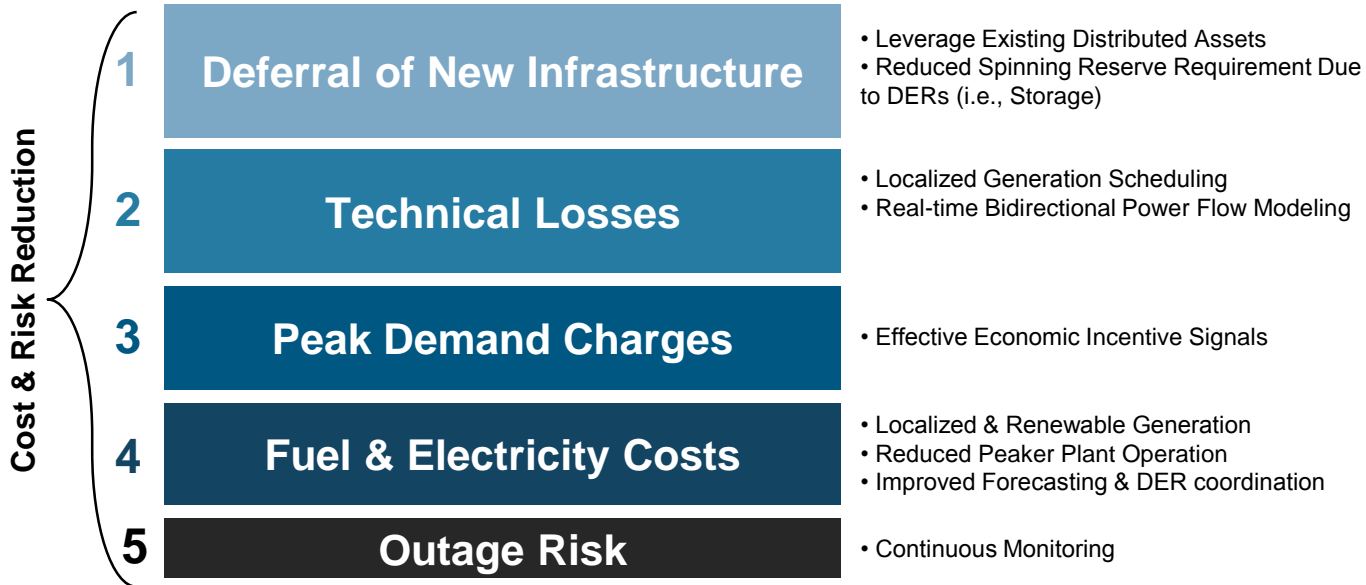
RENEWABLE SMOOTHING

2

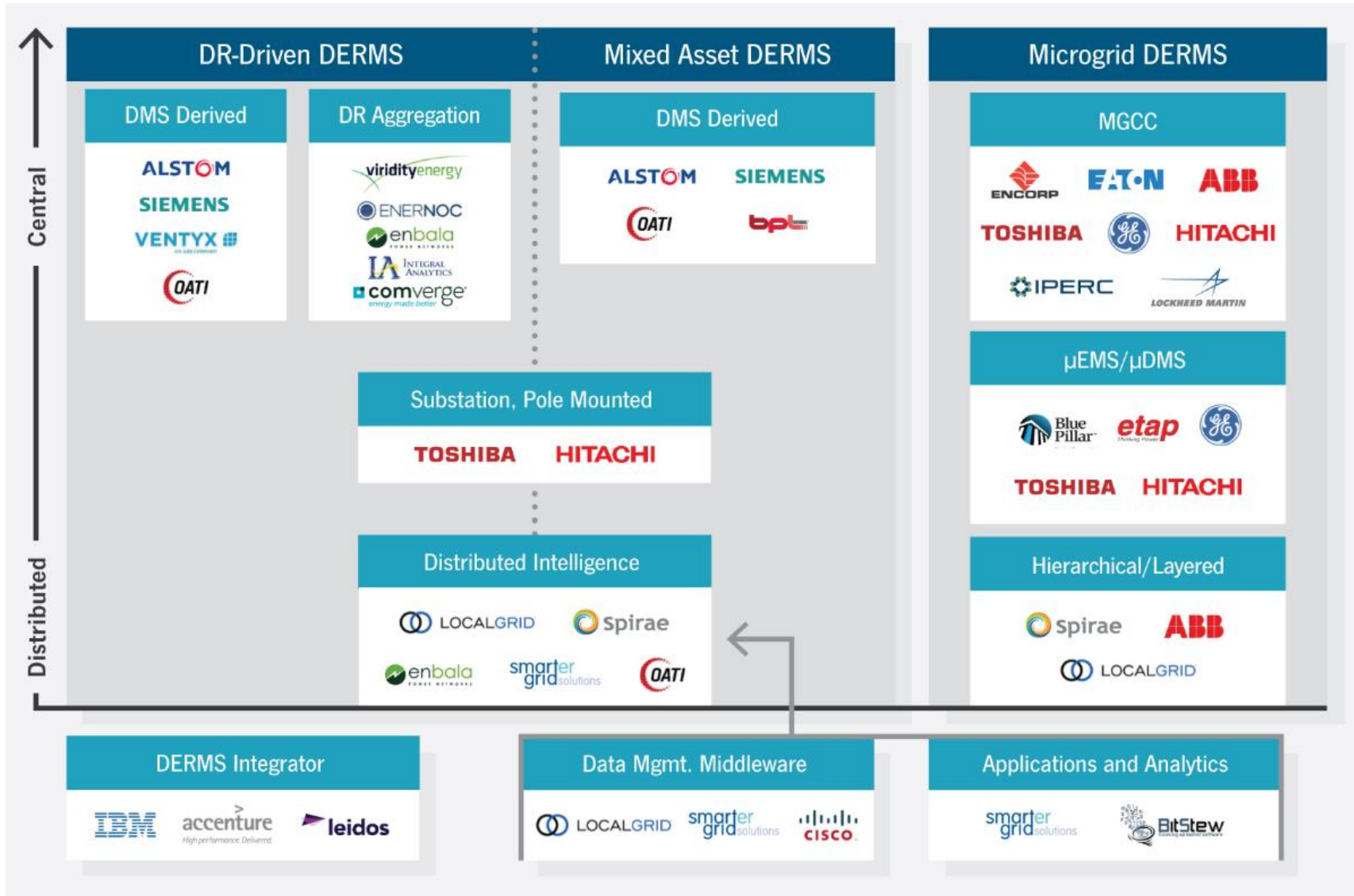
ANCILLARY SERVICES

3

Income Opportunity



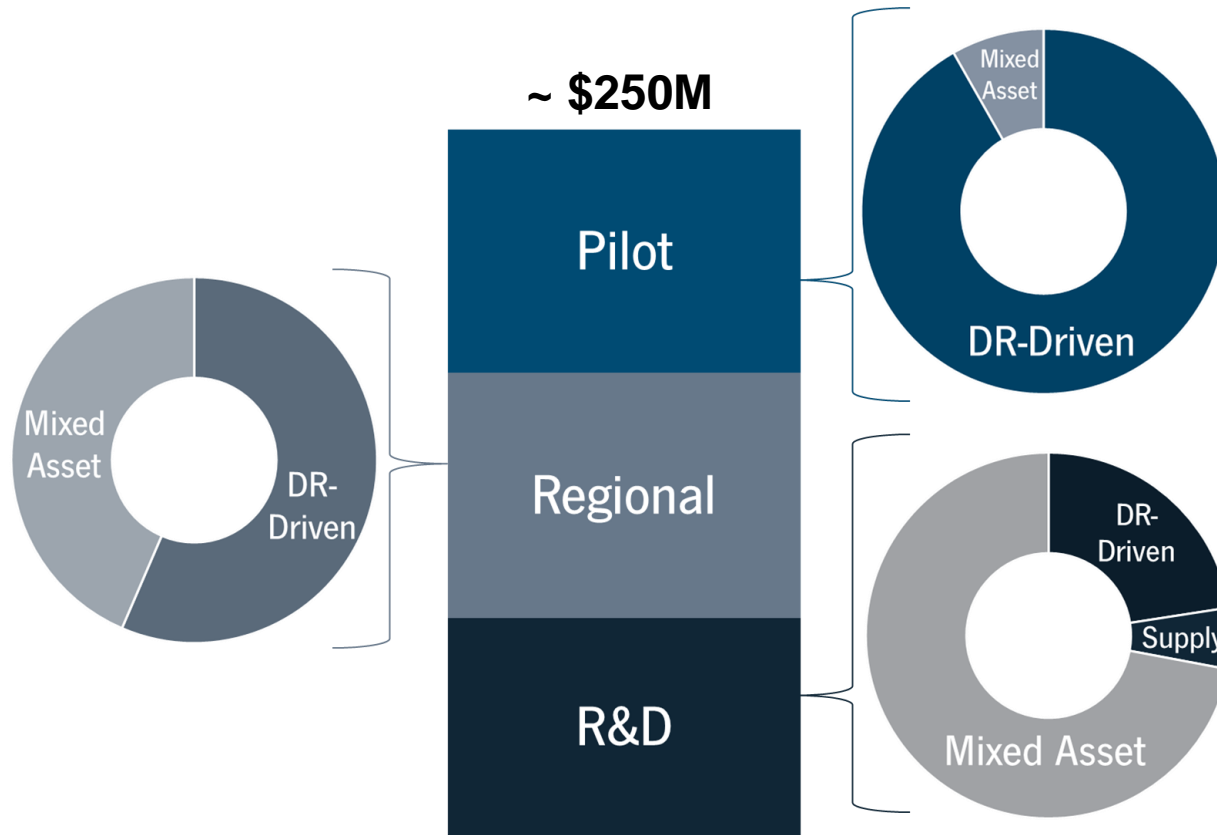
DERMS Vendor Ecosystem



An Overview of North American DERMS

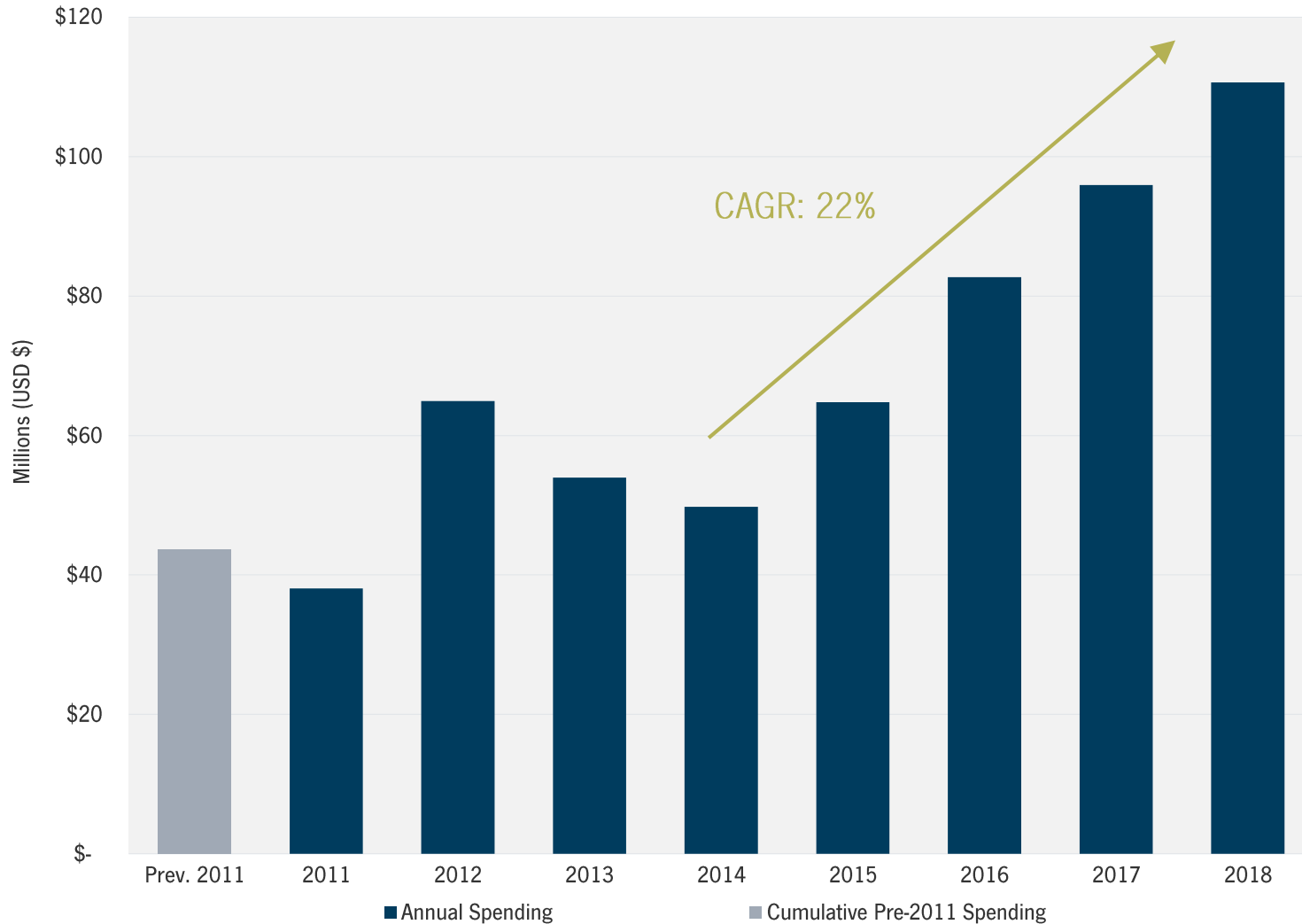
Current NA DERMS Market Size

The current NA DERMS Market Expenditure (2009 – Q3 2014) is approx. **\$250M**



- A majority of the projects have received stimulus funding, most notably from ARRA funding.
- The \$57.4M DERMS project with Spirae is the 1st NA deployment to be launched out of necessity and without stimulus support.

Current DERMS Market Size



Contact Us

Thank You

Questions?

Upcoming GTM Research (Sept. 30) –
**Distributed Energy Resource Management Systems 2014:
Technologies, Deployments and Opportunities**

<http://www.greentechmedia.com/research/report/distributed-energy-resource-management-systems-2014>

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