# Market Development

*Addressing market barriers through scaled deployments and strategic supply chain intervention*

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ACEEE Market Transformation Symposium

Nankoweap Granaries, Mile 53
Photo Credit: Amanda Gonzalez

**PRESENTED BY**

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# Why is it so difficult for promising technologies to cross ‘the Chasm’ and achieve scale?

Many proven technologies don’t achieve desired uptake in the market or utility programs.  How can we better support them crossing ‘the Chasm’?

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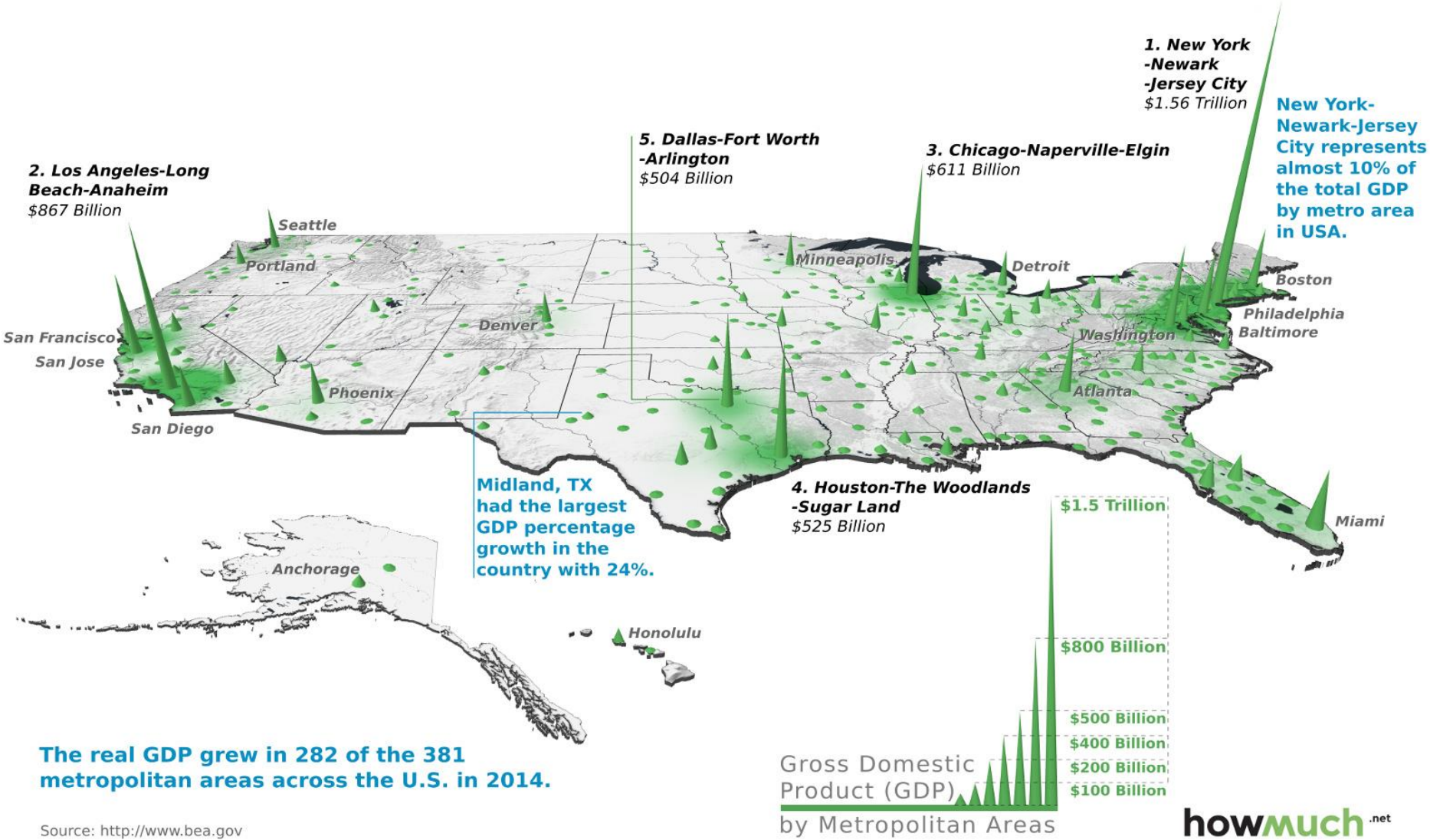
*The product company market perspective: Economic Activity*



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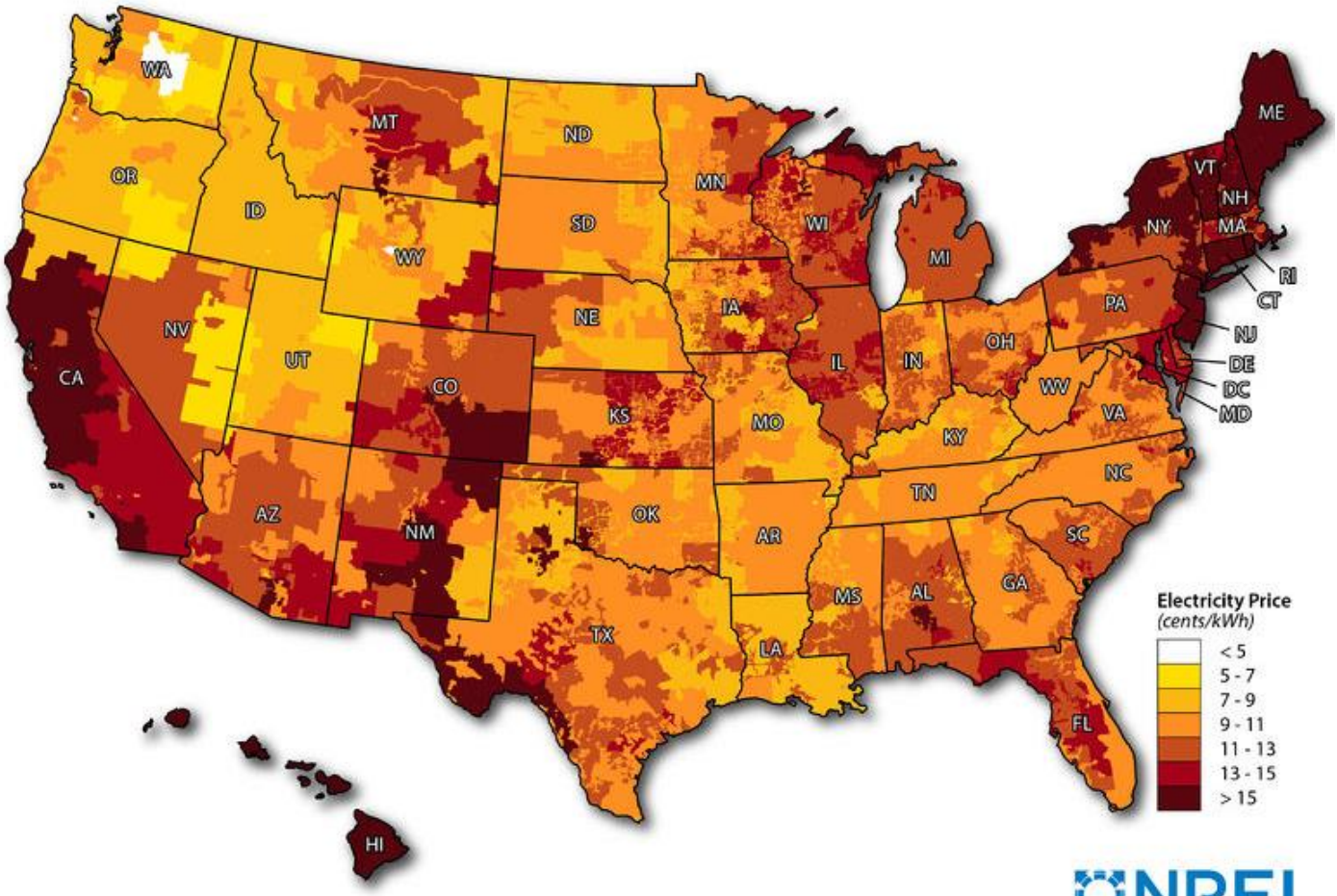
*The product company market perspective: Rates*



# Why is it so difficult for promising technologies to cross 'the Chasm' and achieve scale?

*The utility industry market perspective*

## 50 State Regulatory Environments

## Hundreds of Utility Territories

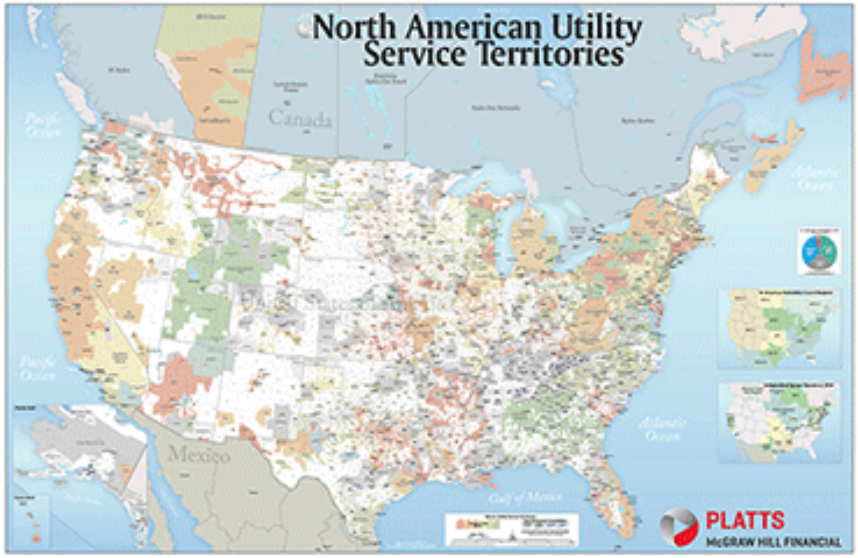



Image Credit: Platts

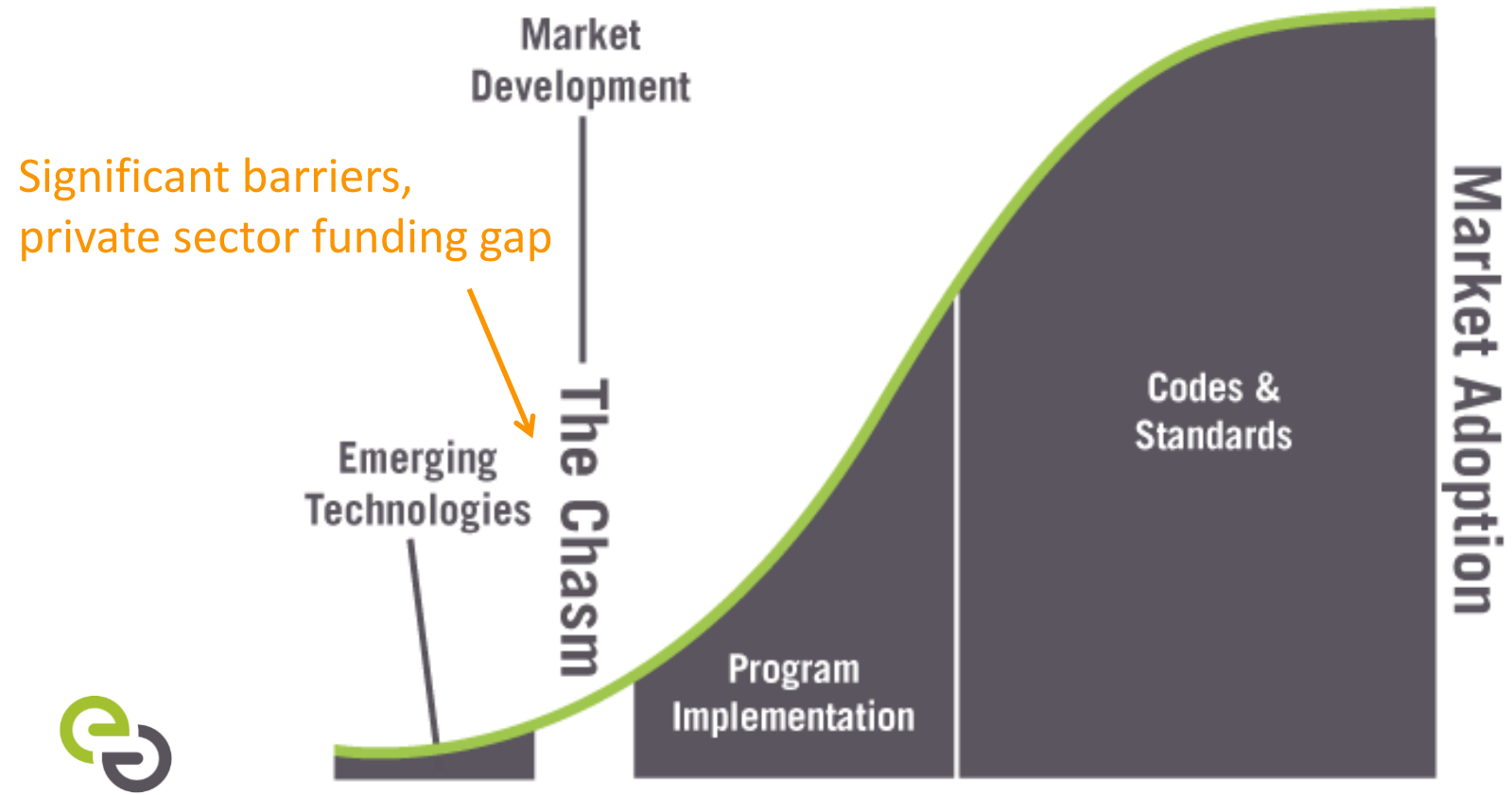
**How can we better support uptake and market development of promising DSM technologies?**

# MARKET DEVELOPMENT DEFINED

Upset Rapid, Mile 154
Photo Credit: Crate Inc.

# What is Market Development?

**Objective:** Address market barriers and transition proven technologies into program portfolios and the broader market.

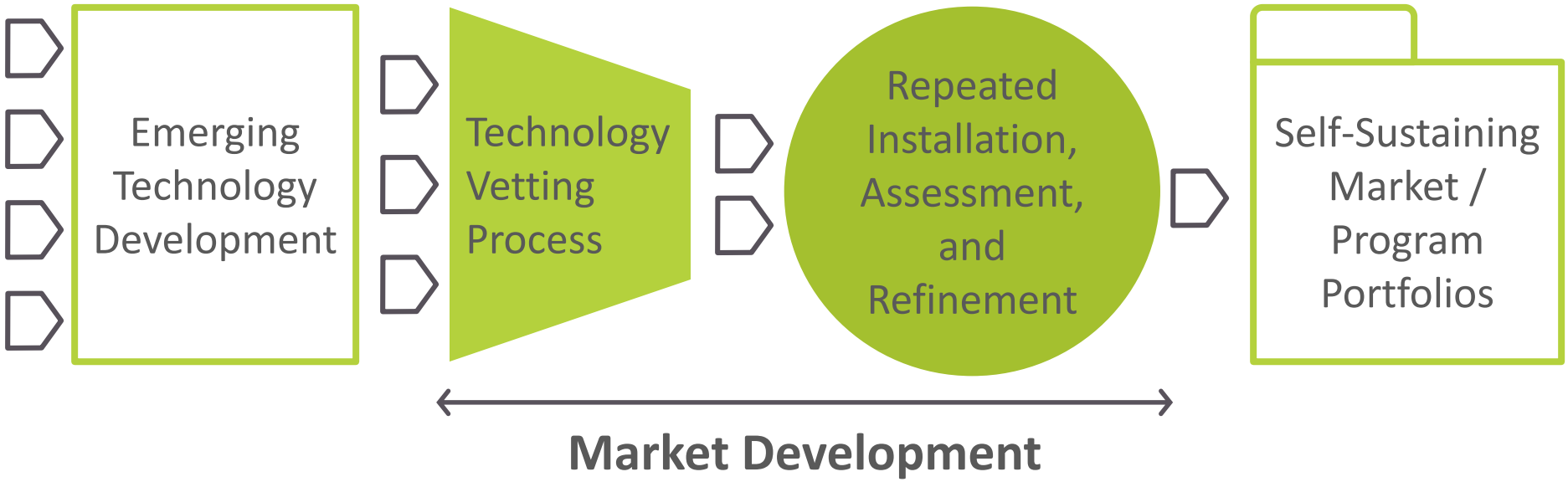


# ‘The Chasm’ in the Utility Program Context

Single projects, no savings

**10s to 1000s of projects, some savings**

1000s of projects, large savings




**Market development is substantially underfunded relative to ET and Resource Acquisition**

# Analyzing the Market Development Gap

| | Technical Readiness | Market Development | Resource Acquisition |
|---|---|---|---|
| **Objective** | Demonstrate technical viability | Establish market infrastructure and demonstrate viability at scale | Cost-effective Energy Savings |
| **Scale** | <10 installations | 10-1,000s installations | 1,000+ |
| **Workforce Development** | Not addressed | Prioritized | Not addressed |
| **Value Proposition / Business Model** | Limited opportunity for refinement | Iterative refinement of marketing, distribution, pricing, installation, and program design | Mature supply chain and business model |

# MARKET DEVELOPMENT EXAMPLES



Photo Credit: Pete McBride

# Crossing the Chasm: LEDs

A long, long time ago, when LEDs were beginning to cross 'The Chasm'…

## Disruptive Technology

- High energy savings
- Improved light quality
- Long lifetime
- Multiple form factors
- Improved controllability
- Significant non-energy benefits

## Market Barriers

- High First Cost
- Lack of awareness and trust
- High variation in product quality

# Market Development Examples:
# PG&E Supported LED Accelerator Program (2010-Present)

- Provide higher incentives for best-in-class products
- Engage large buyers and support multi-phase procurements at scale
- Provide technical assistance and implementation support
- Engage manufacturers to influence product development
- Evolve the program specification with the market
- Leverage program for pilots and case studies, transition to scale

# LEDA—Pilots that helped Scale Adoption

PG&E's Emerging Technologies Program ET12PGE3351

PG&E's Emerging Technologies Program ET12PGE1481

**A Comprehensive Store Retrofit to LED lighting in Common Lighting Applications**

*ET Project Number: ET12PGE1481*

Photo Credit: CREE, Inc.

PG&E's Emerging Technologies Program ET12PGE3361

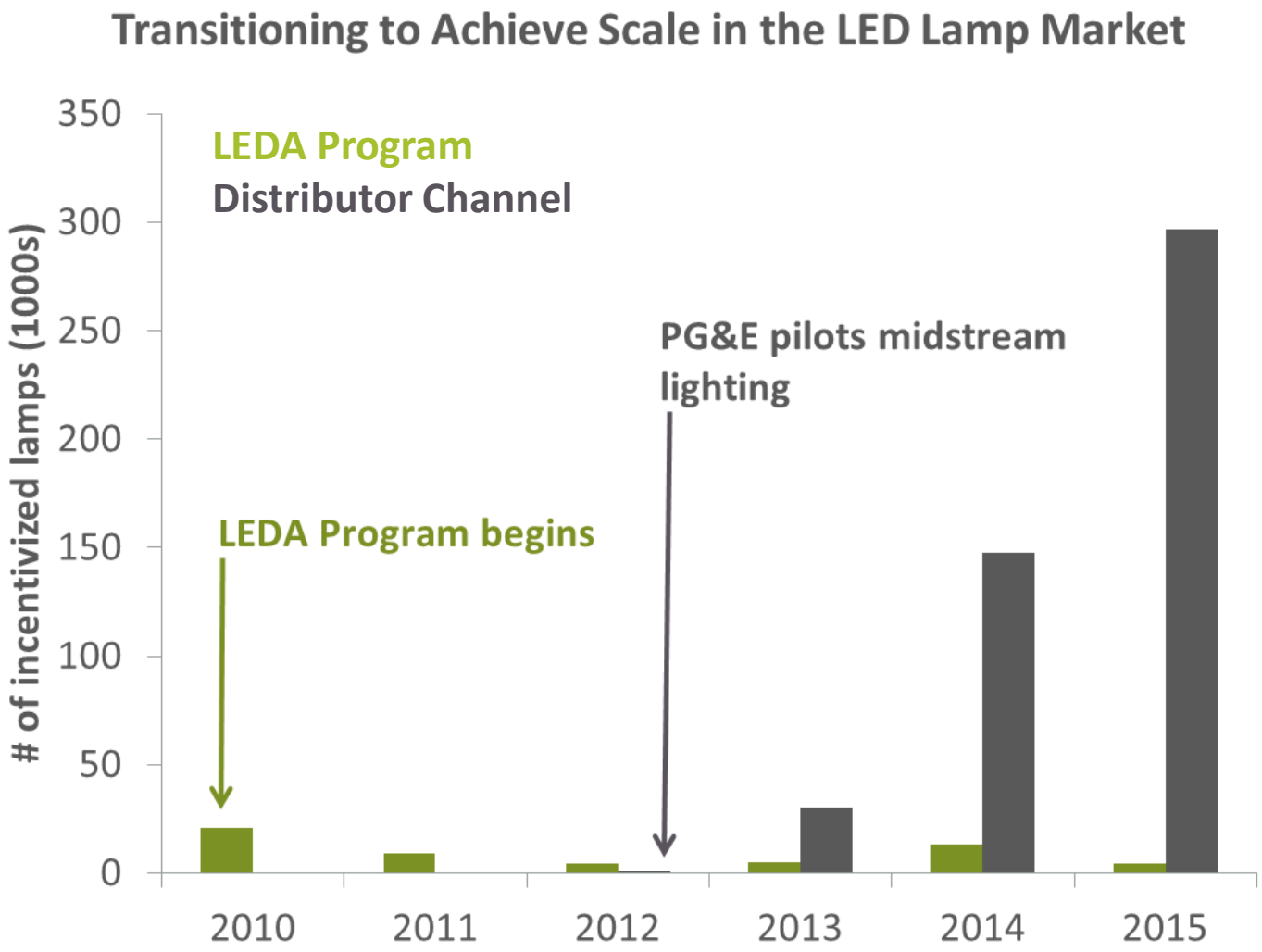
PG&E's Emerging Technologies Program ET 12PG3301

**Midstream Commercial Incentives for LED Replacement Lamps: Emerging Technology and Channel Assessment Project**

*ET Project Number: ET 12PG3301*

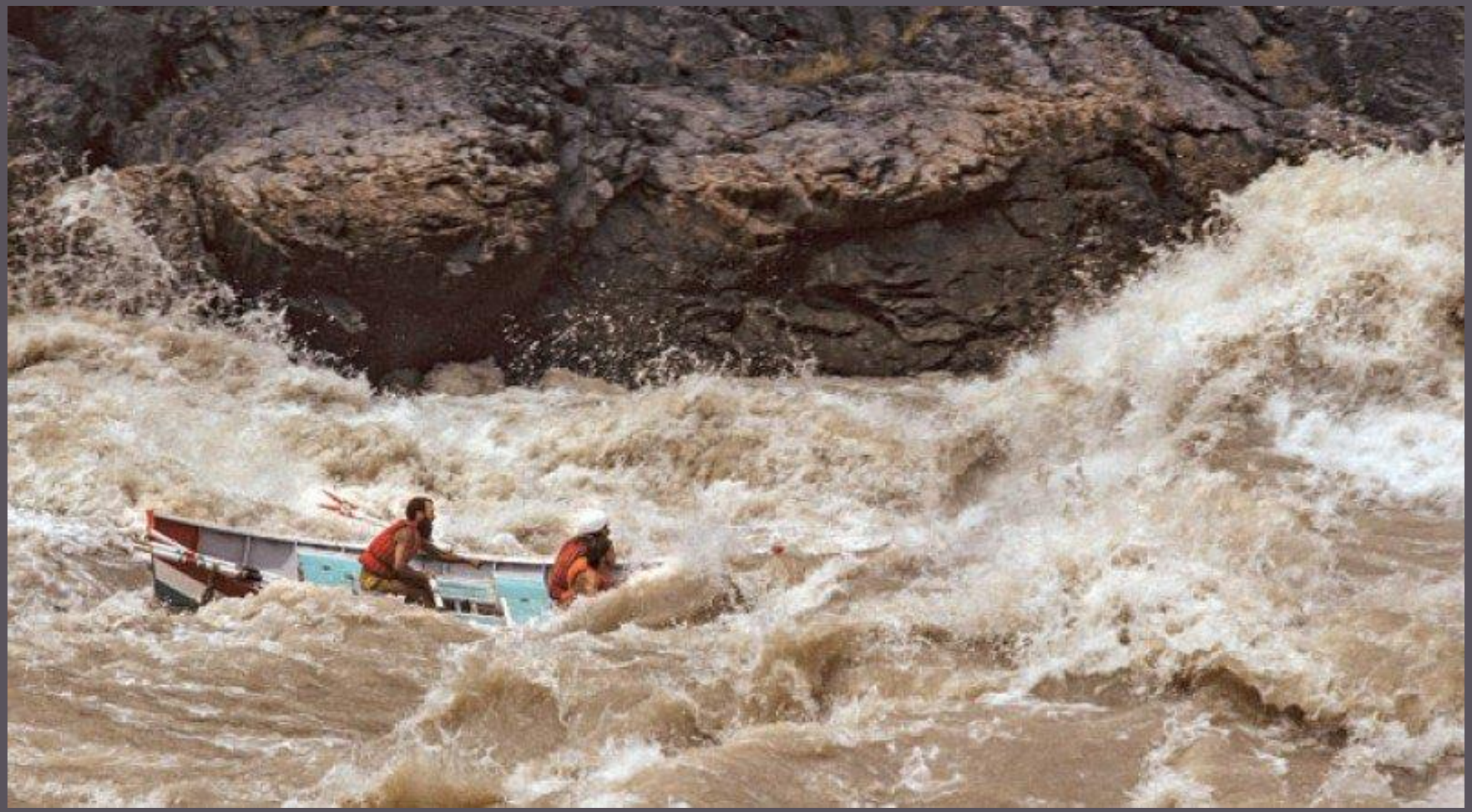
Midstream Pilot Results: Distributor channel achieved 2x more sales in roughly half the time, 3x more cost-effective than direct install.

# LEDA—Transitioning to Midstream




*Source: PG&E, 2015*

# MARKET DEVELOPMENT EXAMPLES: PART II





Crystal Rapid, Mile 99. 1983

# Market Development Examples: NYSERDA's ETAC Program

*ETAC = Emerging Technology & Accelerated Commercialization*

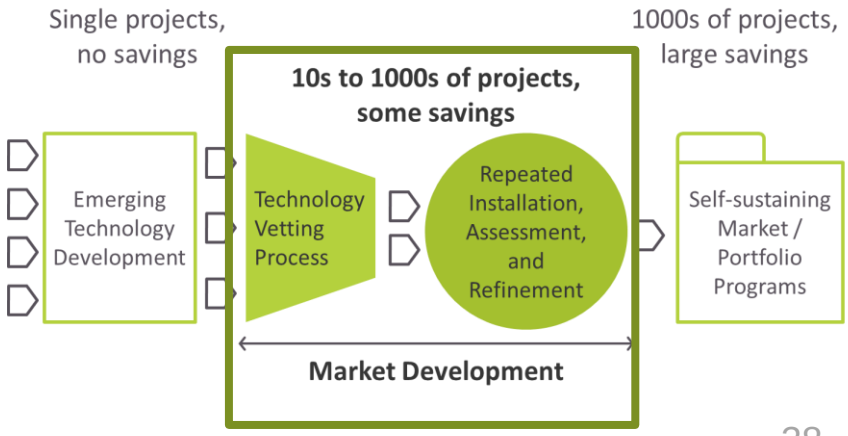
**Goal:** Accelerate adoption through demonstrated performance at scale and supply-chain development.

**Details:**

- $31 million budget
- Resource program
- No cost-effectiveness requirements
- Requires match funding

**Three Program Areas:**

- Savings Performance Validation
- Focused Demonstration
- Scaled Deployment



# Crossing the Chasm:
# Real-Time Energy Management (RTEM)

## Disruptive Technology

- Operational efficiency at scale
- Optimized performance based on need
- Significant non-energy benefits

## Market Barriers

- Awareness and lack of trust
- New energy savings paradigm
- Lack of standardization
- Business models

# Crossing the Chasm:
# NYSERDA's RTEM Scaled Deployment Pilot

**Goal:** 25 installations across New York State (7-10 million sq. ft.)

**Objectives:**

- Demonstrate broad market application
- Quantify energy and non-energy benefits
- Integrate value streams
- Develop the supply chain
- Build consumer awareness and confidence through case studies and data reporting

# THE NEXT STEP FOR MARKET DEVELOPMENT PROGRAMS

~ Mile 42 Photo Credit: O.A.R.S

# Market Development Program Structures: KPIs

**Product Development**

- Validated savings at scale
- Replication
- Warranty
- Standardization of key features

**Supply Chain Development**

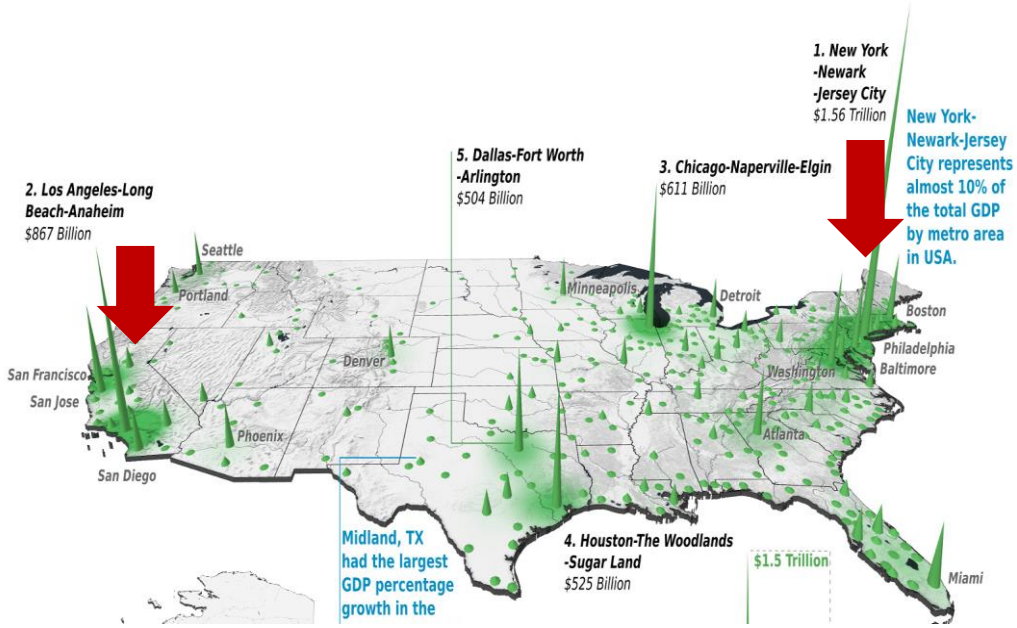
- Competition; presence of midstream market actors
- Evolution of the business model and value proposition

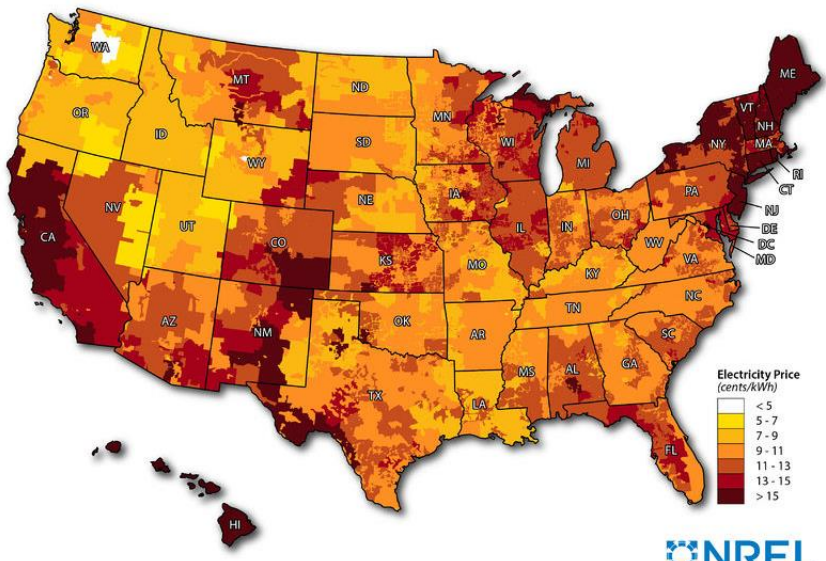
**Engaging the Broader Market**

- Increased market participation
- Match funding and private sector investment
- Improving cost effectiveness

# Market Development Program Structures: Where do we go from here?

- California and New York are rolling out 10-year regulatory cycles
- Together, they represent 22% of US GDP and $10+ billion dollars of clean energy investment
- Opportunity—create a harmonized, multi- state market development function to achieve necessary scale and bridge the ‘Chasm’



# THANK YOU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# Appendix

# Transitioning into Core Programs

## Rushing Technologies into Core Programs

- Insufficient outreach and support
- Faulty commissioning compromises consumer confidence
- Low net-to-gross ratio leads to low TRC
- Compromises core program cost-effectiveness

## Insufficient Funding and Short Program Cycles

- Low incentives do not attract early adaptors
- Do not have time to build a project pipeline
- Market actors do not support technology
- Successes are not replicated

# Regulatory Barriers

## Current Frameworks do not Support:

- Technologies needing market development
- Net-to-gross ratios that are reflective of market penetration
- Enhanced implementation and technical support
- Iterative refinement of deployment model
- Integrated value propositions and cost-effectiveness calculations