

POLL REGISTRATION INSTRUCTIONS

Get Ready to Poll!

1. Connect your smart phone or laptop to the WIFI:
Network: **IHG-Connect**
Use Access Code: **SANHB**
2. Navigate to www.slido.com and login:
Event Code: **#N067**

**MARKET & POLICY WORKSHOP:
TARIFFS, TAX INCENTIVES, RECS OR
SOMETHING ELSE? WHAT'S THE WAY
FORWARD FOR MICROGRIDS?**

**PRE-CONFERENCE WORKSHOP
MICROGRID 2019 CONFERENCE**

MONDAY, MAY 13, 2019

2:00 – 5:00 PM

SAN DIEGO INTERCONTINENTAL HOTEL

BALLROOM D

Microgrid 2019
CONFERENCE

NAVIGANT



Welcome and Introductions

Kevin Normandeau

Publisher,
Microgrid Knowledge

Ken Horne

Director, Navigant
Workshop Moderator

Welcome to Microgrid 2019 Market & Policy Pre-Conference Workshop:

Tariffs, Tax Incentives, RECs or Something Else? What's the (Incentive) Way Forward for Microgrids?

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Q: What word or phrase best describes the biggest constraint to the monetization of resiliency?

(multiple responses are allowed)

WHY ARE WE HERE?

- Law makers, regulators, policy makers (“Incentive and Constraint Makers”) across many jurisdictions are contemplating the next round of strategies to accelerate US microgrid adoption.
- Incentive and Constraint Makers need to hear and consider the microgrid industry’s voice.
- Today’s Action: Gather together microgrid thought leaders and policy makers in one room to consider today’s opportunities and challenges for microgrid incentives across US (and other) jurisdictions.
- Tomorrow’s Outcome: publication of a synthesis of the ideas, recommendations, and best thinking from today in order to influence future microgrid incentive making across the US.

WORKSHOP OBJECTIVE AND SCOPE

Goal: “Produce guiding principles for microgrid incentives and tariffs and next steps to incent microgrid adoption.”

Method: Problem-solving teams producing ideas on flip charts with subsequent down-select voting by peers.

Guiding Questions:

- What public benefits can microgrids offer in exchange for public funds?
- Who should incentives be offered to — specific customer groups that clearly serve the public, such as communities or hospitals, or everyone?
- What incentives now support microgrids?
- What other incentive options should be considered?

TODAY'S AGENDA

- 2:00 – 2:15 pm **Welcome and Introductions**
Kevin Normandeau, Publisher, Microgrid Knowledge
Ken Horne, Director, Navigant and Workshop Moderator
- 2:15 – 2:30 pm **Background: The Microgrid Incentive Landscape**
Peter Asmus, Associate Director, Navigant Research
Brian Levite, Regulatory Affairs Director, S&C Electric
- 2:30 – 3:45 pm **Small Team Problem Solving (includes break)**
- 3:45 – 4:35 pm **Small Team Brief Presentation of Ideas and Participant Voting**
- 4:35 – 4:50 pm **Voting Results Announced**
- 4:50 – 5:00 pm **Synthesis and Closing**

Networking Reception To Follow!

Framing the Problem of Incentives

**Microgrid
Project**

Framing the Problem of Incentives

Project Customers

Capital Provider

Community Members

Microgrid Project

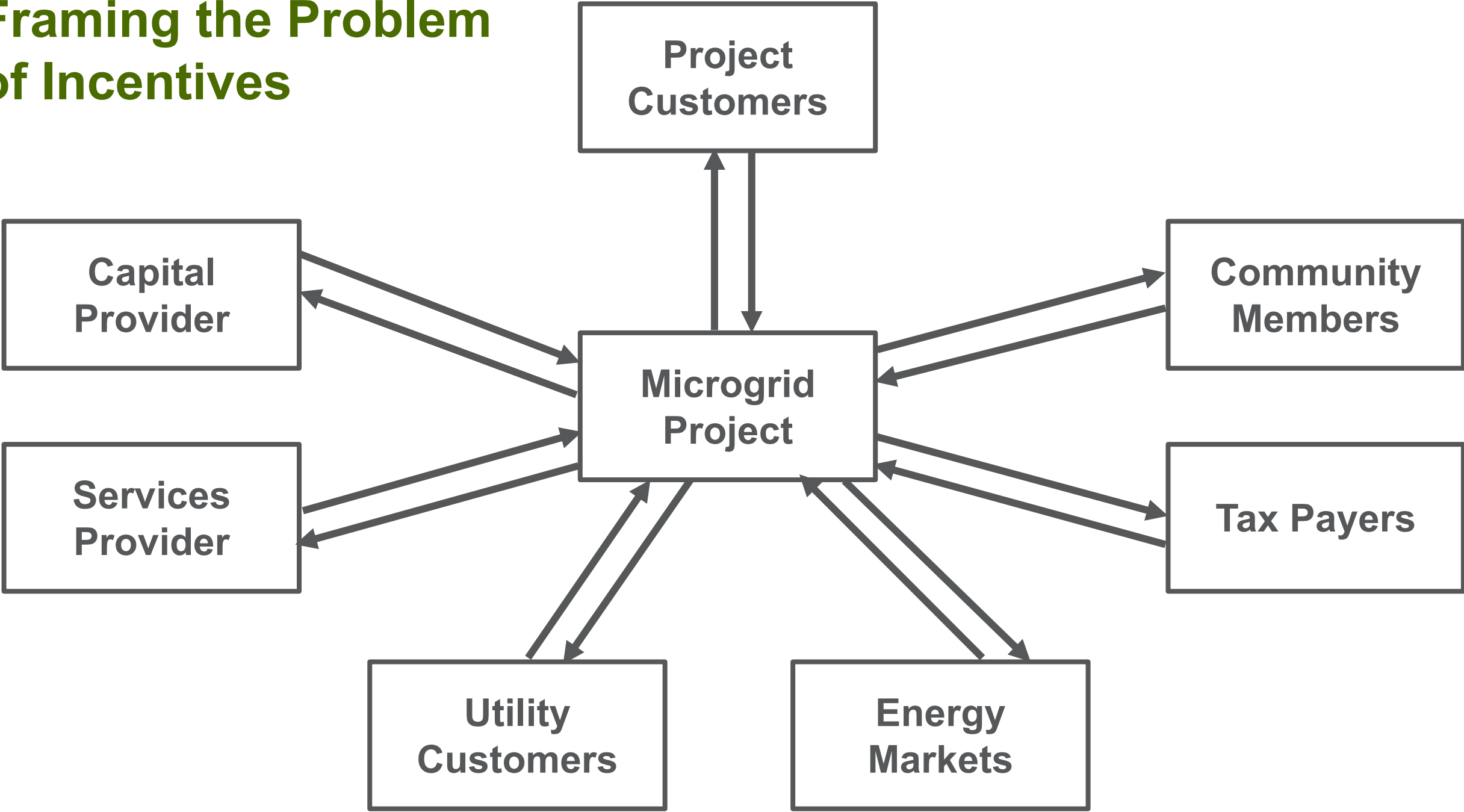
Services Provider

Tax Payers

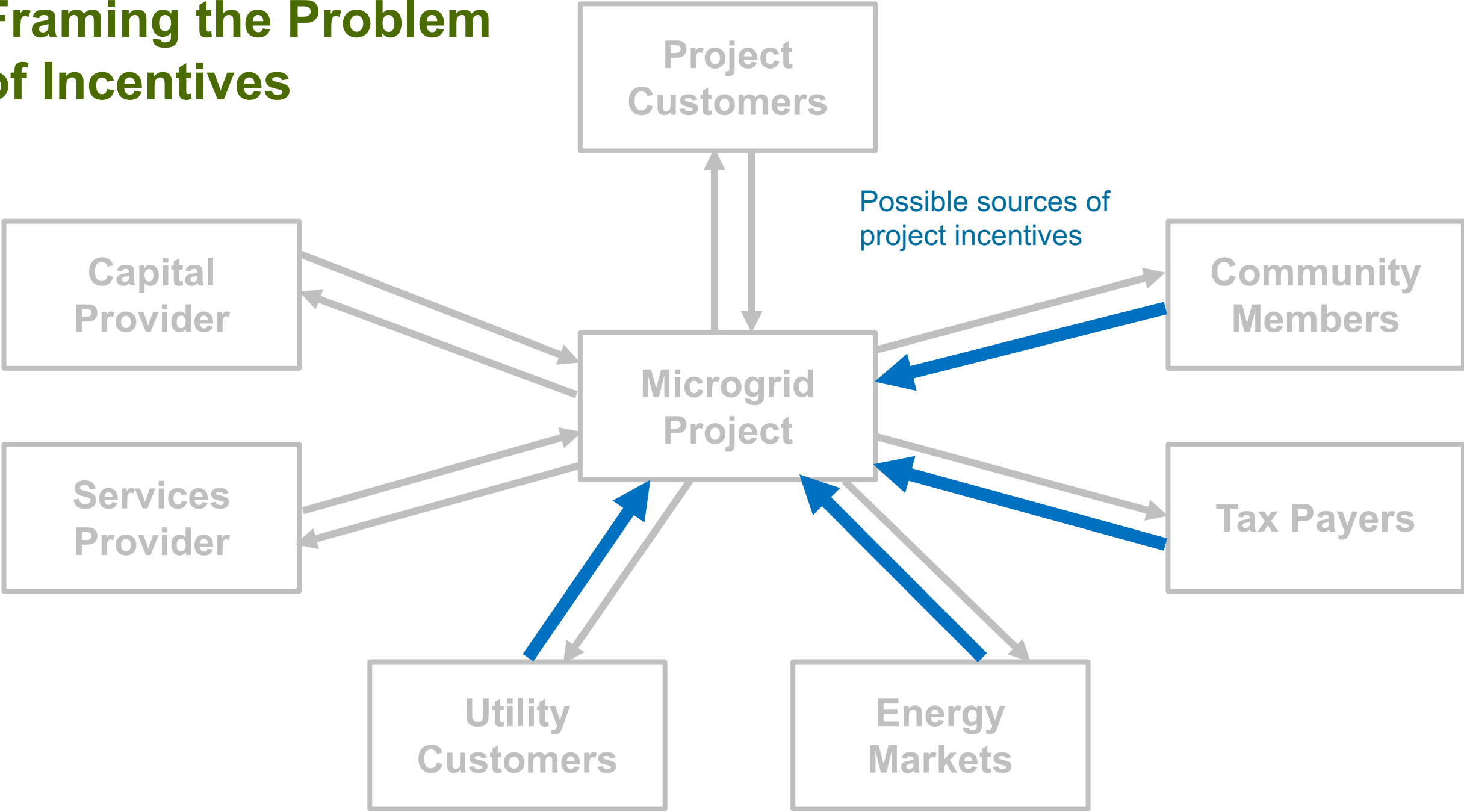
Utility Customers

Energy Markets

Framing the Problem of Incentives



Framing the Problem of Incentives



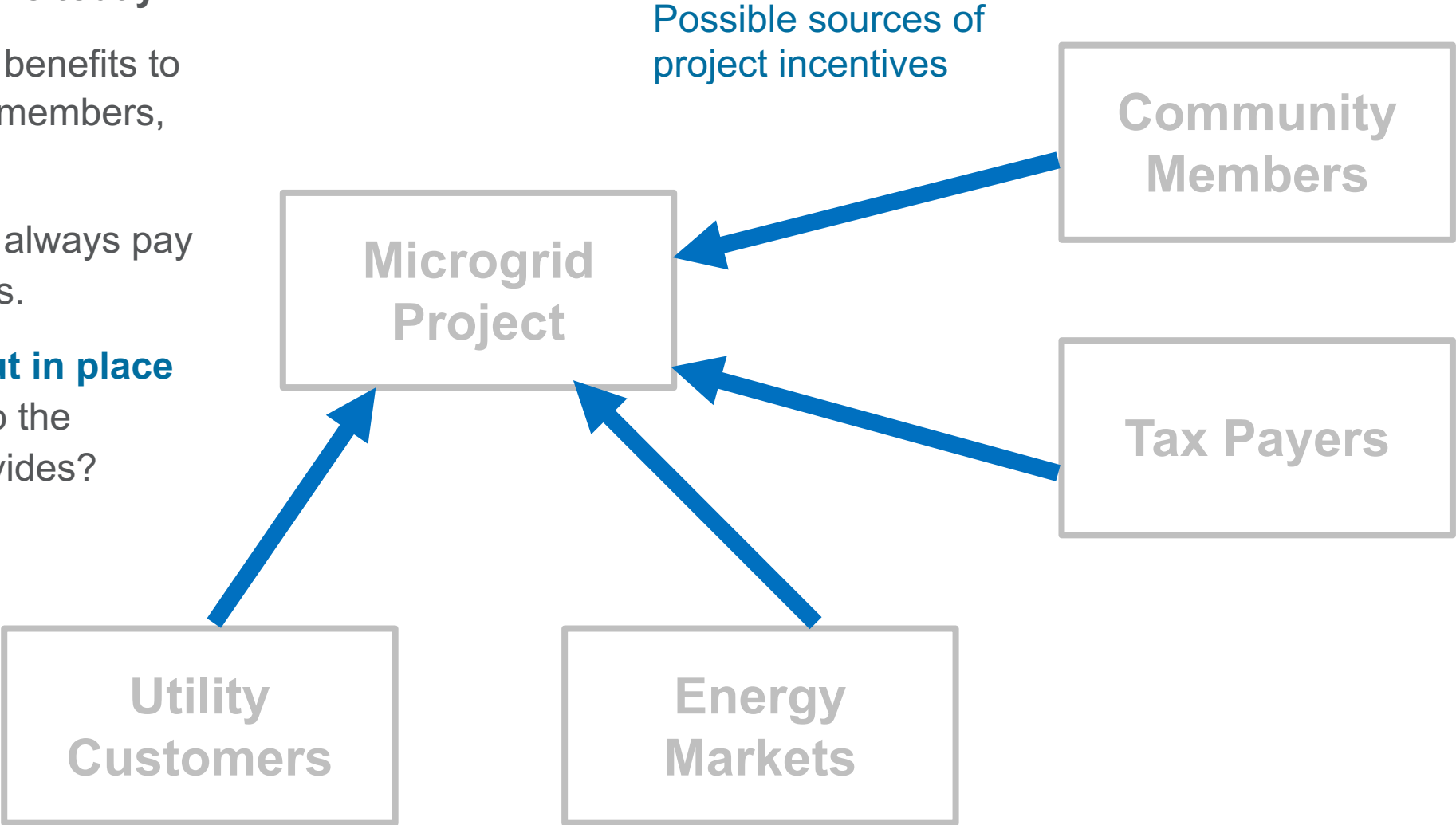
Framing the Problem of Incentives


Problem we are trying to solve today:

Microgrids may or will provide benefits to utility rate payers, community members, and jurisdiction tax payers.

But these beneficiaries do not always pay the microgrid for these benefits.

What incentives might be put in place to effect such fair payments so the microgrid receives what it provides?





Background: The Microgrid Incentive Landscape

Peter Asmus

Associate Director,
Navigant Research

Brian Levite

Regulatory Affairs Director,
S&C Electric

HOW CAN POLICYMAKERS BEST GROW THE MICROGRID MARKET TODAY?

MICROGRID KNOWLEDGE

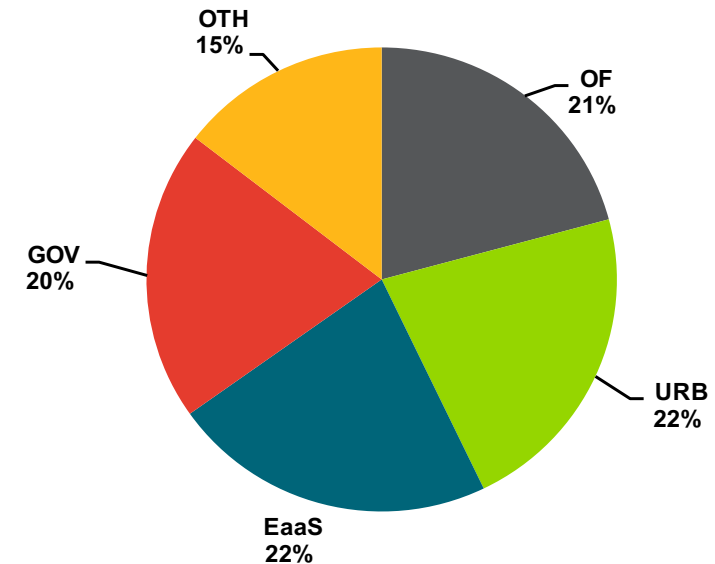
MAY 13, 2019

NAVIGANT

MICROGRIDS ARE A GLOBAL PHENOMENON

- Navigant Research just completed its 16th edition of its *Microgrid Deployment Tracker*, the only global data set on identified microgrid capacity published in the world
- The report lists available project details on 4,442 microgrids operating or being developed around the world representing 26,315 MW in total capacity.
- This microgrid market is comprised of a diverse ecosystem of vendors and, increasingly, utilities.
- Along with distributed energy resources (DER) details for each microgrid, this report also lists vendors involved, market segment, location and – when possible – business model deployed.
- A stunning 81% of microgrids deployed globally rely upon an “energy-as-a-service” business model
 - On a capacity basis, however, the business model market shares are fairly remarkably evenly divided (see Chart on this slide)

**Microgrid Business Models,
World Markets: 2Q 2019**

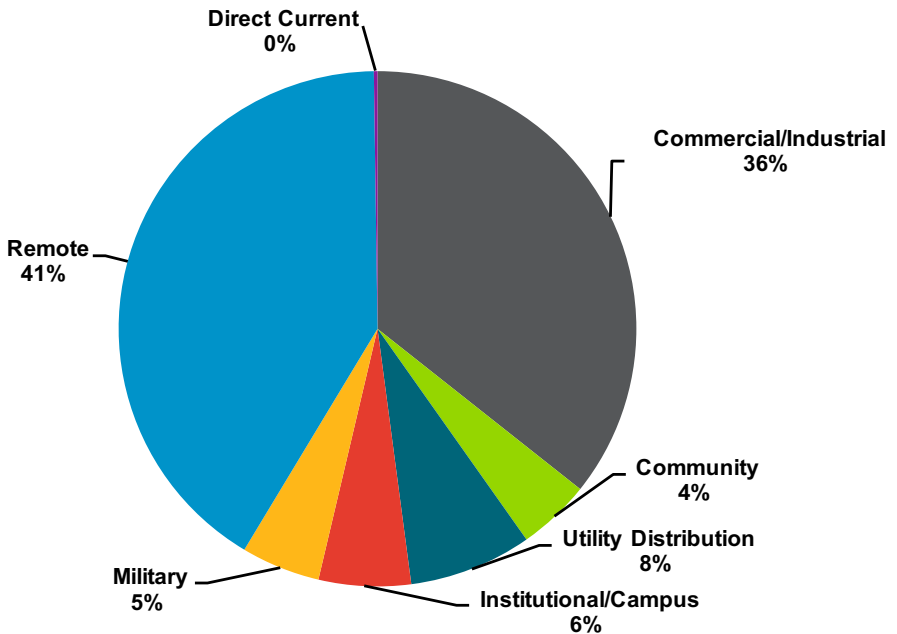
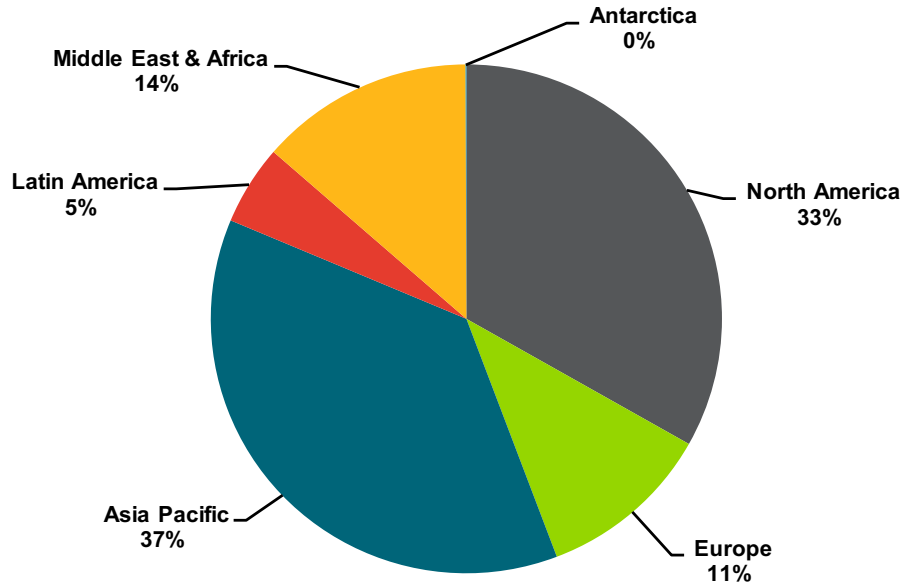


(Source: Navigant Research)

GLOBAL MICROGRID MARKETS: REGION AND SEGMENT MARKET SHARES

Total Microgrid Power Capacity Market Share by Region, World Markets: 2Q 2019

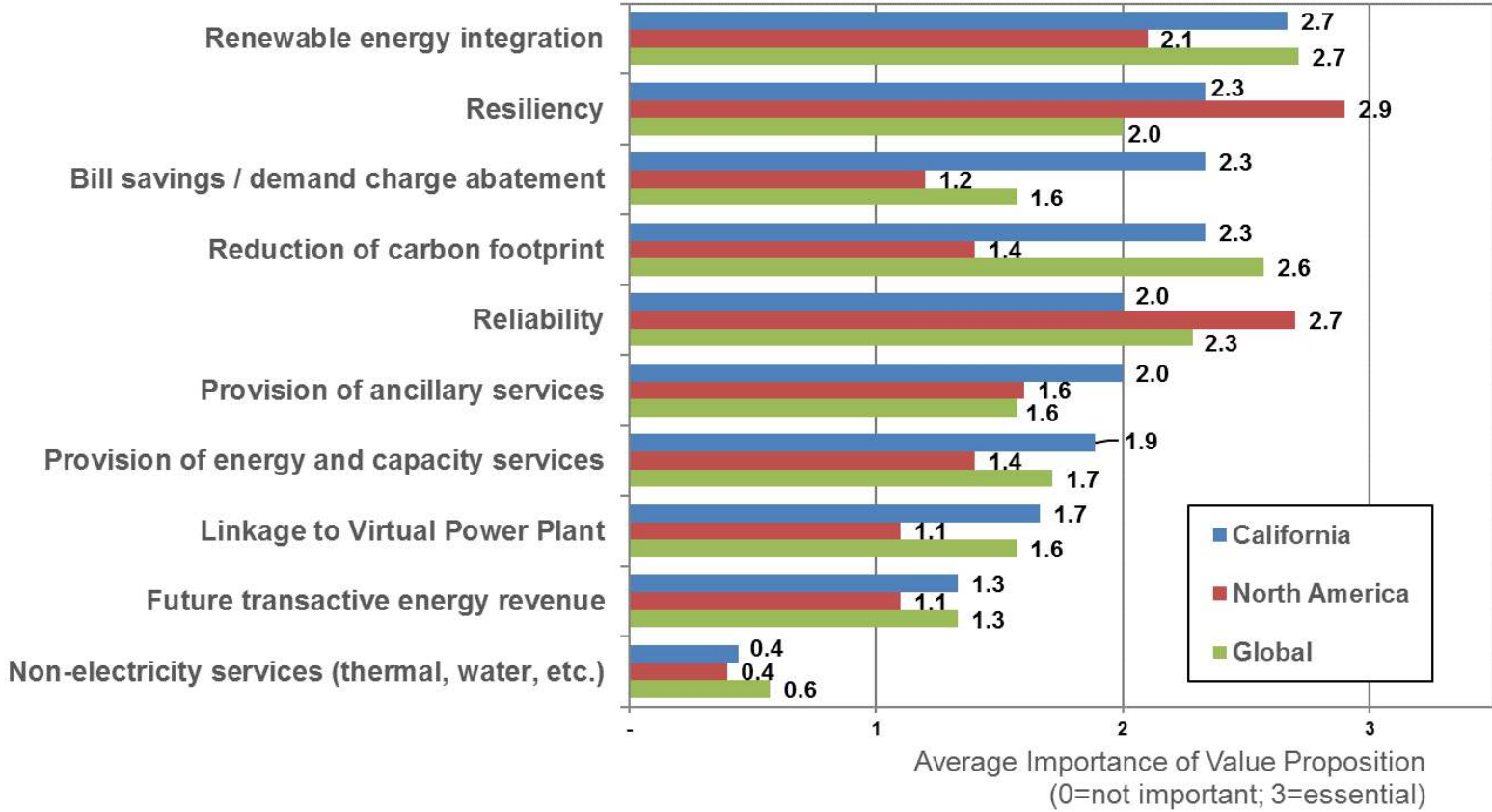
Total Microgrid Power Capacity Market Share by Segment, World Markets: 2Q 2019



(Source: Navigant Research)

VALUE PROPOSITIONS DRIVING MICROGRIDS TODAY

Case Study Value Proposition Rankings – All Regions



(Source: Navigant)

WHAT POLICIES HAVE BEEN DEPLOYED TO SUPPORT MICROGRIDS IN U.S.?

The menu of options available to policymakers and government regulators to accelerate microgrid adoption is long, yet the jury is out as to what is the most cost effective approach.

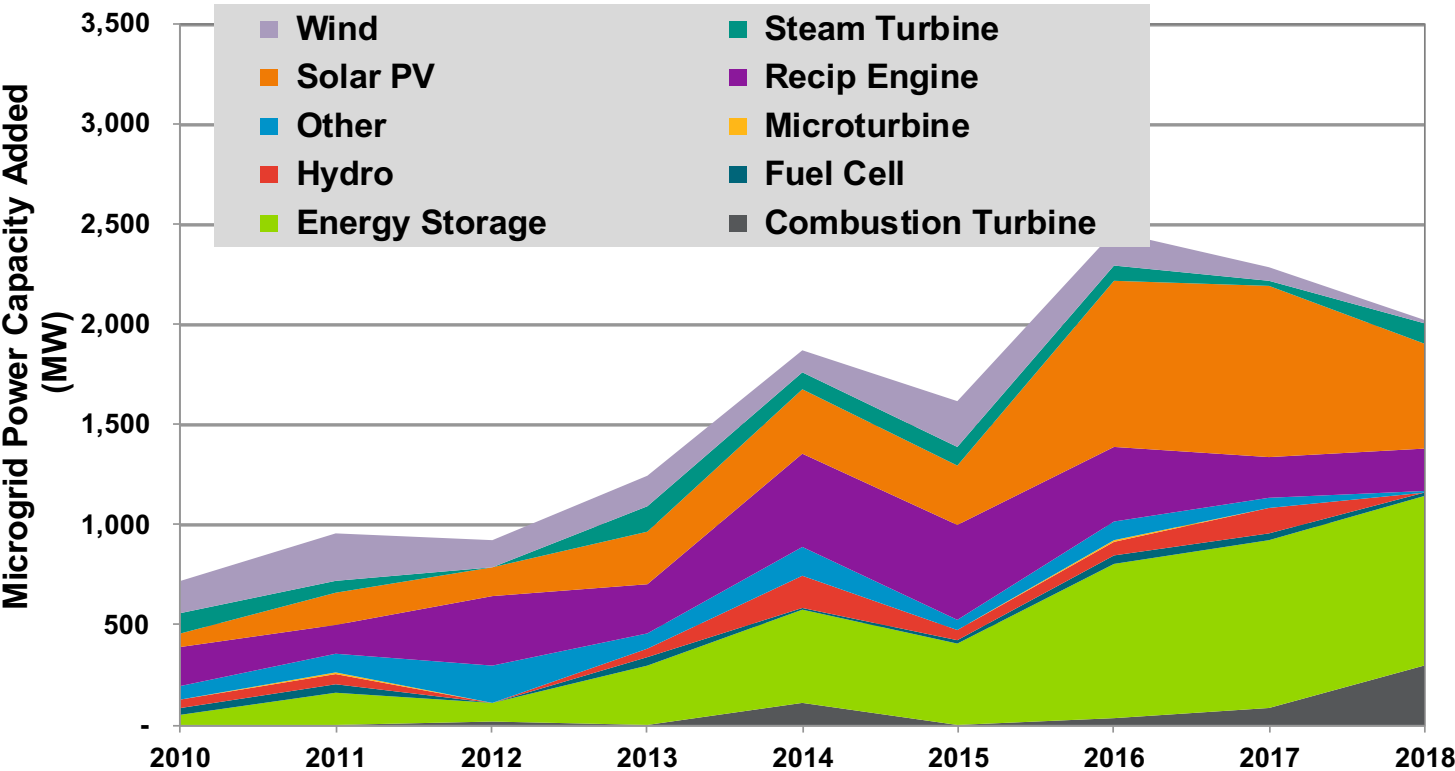
- Among the long list of options available to spur microgrid developments are the following:
 - Direct government grants for microgrid deployments
 - Government authorized solicitations for microgrids (often meeting specific state policy criteria)
 - Mandates and targets for DER, renewables, or carbon reduction
 - Specific financing vehicles that steer public or private dollars (or both) toward microgrids
 - Utility regulatory reforms addressing existing barriers to microgrid deployments (i.e. interconnection)
 - Technology commercialization roadmaps
 - Approval of utility rate-basing of microgrids

LESSONS LEARNED (AND QUESTIONS RAISED) FROM 6 U.S. STATES

- **California:** Standardized interconnection and approval process by utilities for third-party microgrids.
- *Should government funding be provided to traditional fossil fuel generation technologies integrated into microgrids?*
- **Connecticut:** Allows microgrids to send electricity over public rights-of-way during power outages.
- *Should the government require a longer-term islanding capability (i.e., 2 weeks) for microgrids that receive government funding?*
- **Hawaii:** Creates utility tariffs for microgrids services including the provision of grid services such as frequency regulation.
- *Should the government view microgrids as vehicles to reach aggressive renewable energy goals?*
- **Maryland:** Focuses initial deployment efforts on utility-owned community microgrids while also simultaneously reducing barriers to third parties also developing community microgrids.
- *Should government specifically authorize the selling of microgrid services to both wholesale markets and retail customers?*
- **Massachusetts:** Provides free technical assistance for communities contemplating microgrids with a special focus on municipal governments.
- *Is it better to focus initially on single-building islandable systems (i.e., nanogrids) in the near term rather than more challenging community microgrids?*
- **New York:** Reform utility–customer relationship to provide platforms for DER services including microgrids.
- *Should governments focus on feasibility studies to plant seeds for a large pool of projects rather than funding a few select microgrids over the entire development cycle?*

WHAT DO DER TRENDS TELL US ABOUT FUTURE MICROGRIDS?

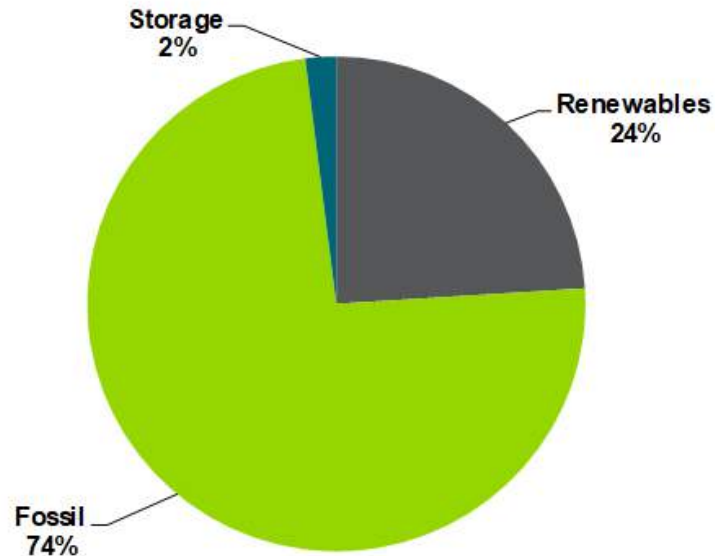
Microgrid Power Capacity Added by Generator Type (2010-2018)



(Source: Navigant Research)

KEY QUESTION: IS THERE A PREFERRED RESOURCE MIX FOR MICROGRIDS?

DER Mix for State-Supported Microgrids in Six US States



- Majority of microgrids today are retrofits
 - They therefore incorporate legacy assets, more often than not diesel generators and CHP systems
- Future microgrids also likely to be retrofits
 - But legacy assets will increasingly be solar PV and advanced batteries
- Proportion of greenfield microgrids will increase as this platform becomes more widely commercialized
 - Growing interest among premium real-estate developers
 - Many greenfield projects likely to be C&I projects, the fastest growing microgrid segment in U.S. and globally
- How to incentivize community microgrids to incorporate low-carbon DER portfolios ?
 - Should there be a DER portfolio standard for microgrids if funded by state governments?

(Source: Navigant Research)

FIVE KEY RECOMMENDATIONS FOR SUSTAINABLE MICROGRID GROWTH


The single most important public policy driver for microgrids would be to create a flexible framework for determining the value of resiliency that a microgrid provides.

- **Create Metrics That Capture the Value of Resiliency**
 - Whether calculated on state, utility, or perhaps transmission system operator control area basis, a simple way to accelerate microgrid development would be to establish values for resiliency that could be factored into pricing of such services.
- **Shift from Grants to Market-Based Incentives**
 - Should government steer or push the market forward? Do specific segments still require state grants – and for how long?
- **Target Funds toward New Clean and Smart Technologies**
 - Government funds earmarked for technology advancement may be best spent on emerging DER options not supported by robust private sector investments and/or technologies the boost overall performance through integration, automation and controls
- **Choose Projects That Foster New Business Models**
 - Ideally, government funding could help create a replicable financing approach that could then be embraced by the private sector yet be adequately supported by complementary government policies such as tax credits, standards, and tariffs.
- **Allow for Flexibility and Midcourse Corrections**
 - Nothing ever goes as planned; peg subsidy levels to data indicators that reflect shifting market conditions.

Remarks from Brian Levite

Regulatory Affairs Director

S&C Electric



Small Team Problem Solving

SMALL TEAM WORKING SESSION - GOAL

- **Objective:** Develop and briefly present your team's best idea on a new (or modified) incentive that is responsive to the Guiding Questions:
 - What public benefits can microgrids offer in exchange for public funds?
 - Who should incentives be offered to — specific customer groups that clearly serve the public, such as communities or hospitals, or everyone?
 - What incentives now support microgrids?
 - What other incentive options should be considered?
- **Criteria:** Each Team's idea will be evaluated by participants to identify the idea that BEST balances:
 - Compensating the microgrid fairly for benefit(s) it can or will provide to specific stakeholders.
 - Burdening the people (rate payers, taxpayers, etc.) fairly who bear the cost of paying these incentives.
 - Practically able to be adopted given current political, economic, policy, and technical considerations.

SMALL TEAM WORKING SESSION - LOGISTICS

- Your assigned table is your team.
- Each team will select a presenter, a time keeper, and a flip chart creator.
- Each team's designated presenter will have three (3) minutes to present their idea to the room.
- Team facilitators will be available to help coach and challenge your thinking.
 - Peter Asmus, Associate Director, Navigant Research
 - Adam Forni, Associate Director, Navigant Research
 - Matt Roberts, Managing Director, Prospect Hill
- Following all team presentations, all participants will vote to select the best incentive idea considering the evaluation criteria (compensation, burden, practicality).
- The winning team will receive prize: Each winning team member will receive a **\$100 Cash Gift Card**
- A synthesis of today's outcomes will be shared with the conference attendees via a panel session tomorrow AND published on MGK.
- Team sessions begin now and conclude at **3:40p.** You may also take a break during this time.

SMALL TEAM WORKING SESSION - GOAL

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STOP AT 3:40P



Small Team Brief Presentation of Ideas

TEAM IDEA PRESENTATIONS

Team	Idea Title
TABLE 1	
TABLE 2	
TABLE 3	
TABLE 4	
TABLE 5	
TABLE 6	
TABLE 7	
TABLE 8	

Evaluation Criteria:

- Compensating the microgrid fairly for benefit(s) it can or will provide to specific stakeholders.
- Burdening the people (rate payers, taxpayers, etc.) fairly who bear the cost of paying these incentives.
- Practically able to be adopted given current political, economic, policy, and technical considerations.



Participant Voting

Q: Considering both the goals of the workshop and the solution evaluation criteria, which team presented the most practical and compelling solution for microgrid incentives and tariffs?

(multi-voting: each participant gets 3 votes)

Evaluation Criteria: Each Team's idea will be evaluated by participants to identify the idea that BEST balances:

- Compensating the microgrid fairly for benefit(s) it can or will provide to specific stakeholders.
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Voting Results

IDEA EVALUATION RESULTS

• And the Winner Is....

Team	Idea Title
TABLE 1	
TABLE 2	
TABLE 3	
TABLE 4	
TABLE 5	
TABLE 6	
TABLE 7	
TABLE 8	





Synthesis and Closing

SYNTHESIS AND CLOSING

- TBD



END

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