

THE ACCELERATE GROUP | LLC

PIPA Identification Kickoff and PIPA Framework

Policy+Innovation Coordination Group

Date of Meeting: March 23, 2020

March 24, 2020

PICG Status

Kick-Off Meeting



Workplan Development



PIPA Identification Process



PIPA Selection



3-5 PIPA Meetings



Database/Results Transparency



Policy+Innovation Forum



Next Steps



Meeting Agenda:

1. Welcome and Introductions
2. PICG Process to Date
3. Policy+Innovation Partnership Area Identification
4. Review of PIPA Framework
5. PIPA Input
6. Public Comment
7. Next Steps

This was a public meeting and all PICG Members participated.

- 1) Formal Comment on Partnership Area Framework due 3/30
- 2) Partnership Area Meeting 4/15 to present the 5-10 narrowed Partnership Areas

Policy+Innovation Partnership Area Framework:

Using the Regulatory Assessment, Background Materials Analysis, and Interview Responses, the Project Coordinator created a Partnership Area Framework mapping challenges and/or obstacle to strategies and policy goals. The initial Partnership Area Framework consists of 400+ identified obstacles and/or challenges.

The Project Coordinator presented the DRAFT Partnership Area Framework on a webinar on March 23, 2020. This was an open meeting that was publicly-noticed.

1. **Welcome and Introductions.** The Project Coordinator provided an overview of the creation of the Policy+Innovation Coordination Group, and its mission.
2. **PICG Progress to Date.** The Project Coordinator reviewed the work of the PICG, outlining the meetings the PICG and work the PICG has done to date, the background research and interviews conducted by the Project Coordinator, the development of the Partnership Area Framework, and the process going forward to identify and narrow possible partnership areas into the top 3-5 for 2020.
3. **Partnership Area Identification.** The Project Coordinator reiterated the definition of Policy+Innovation Partnership Areas as “issue areas of common interest and substantive opportunity, around which the PICG will engage in targeted coordination. Further, the Project Coordinator identified the criteria for selecting Partnership Areas, what the PICG will do with Partnership Areas, and the process by which the CPUC would be selecting Partnership Areas.
 - a. **Criteria:** Three top-level questions will be asked of all the obstacles, challenges and strategies in the Partnership Area Framework to help identify possible Partnership Areas:
Where are timely opportunities to connect RD&D to Policy?,
Where can enhanced coordination accelerate outcomes?,
and what are the most critical challenges.
 - b. **What the PICG will do with Partnership Areas:** The Project Coordinator described how the 3-5 selected Partnership Areas will become workstreams around which coordination

and policy feedback can occur. This will include public meetings around which lessons learned and data from EPIC projects could be considered as input into policy-making efforts, as well as work plans to support collaboration and coordination among stakeholders. Further, the Project Coordinator described the use of a database for tracking project lessons learned and results to the obstacles and challenges identified in the Partnership Areas framework.

- c. Identification. Third, the Project Coordinator presented the process for identifying and narrowing Partnership Areas, which would follow the following overall steps: 1) developing the Partnership Area Framework as a landscape analysis of state energy policy goals, strategies, and obstacles and challenges; 2) Mapping EPIC projects onto the obstacles and challenges in the Partnership Area Framework; 3) Identifying Possible Partnership areas; and 4) Narrowing the Partnership Areas into the top 3-5 for 2020. Further, the Project Coordinator described that the CPUC will have a chance to consider alternative Partnership Areas for 2021 at an end-of-year forum to be held in late Fall 2020.

4. **Review of Partnership Area Framework.** The Project Coordinator then walked through the Draft Partnership Area Framework, including a discussion of its structure, and the topline goals, strategies and obstacles.

Draft Partnership Area Framework walk-through:

The Project Coordinator provided the following walk-through summary of the background research and interviews conducted as part of the Regulatory Assessment.

The goal of the Partnership Area Framework is to establish a common understanding of challenges and obstacles to achieving the state's energy goals.

The Project Coordinator noted that if there is disagreement with anything described, it is important to note that this is a collection of opinions. It is not about right and wrong. There are opposing viewpoints collected, but it is important to capture them.

Also, there are areas where there may not be a lot of obstacles or challenges listed. That doesn't mean they are less important – it may mean that there are less unknowns. Less areas where we don't know the path ahead.

EMMISSIONS REDUCTIONS

Renewable Energy Development (p. 24)

- Intermittency, and seasonal variation
- Interconnection time and cost
- New ramp needs
- The role of inverters and smart inverters
- Communication and coordination with millions of resources

Transportation Electrification (p.26)

- Lack of medium-heavy duty standardization of charging
- Unknown local impacts to electric system
- Unclear role of vehicles in DR and Grid services
- Lack of vehicle-grid communication challenges
- When should charging be optimized for
- How do you coordinate that charging
- Getting car companies, chargers, customers, and utilities to work together

Hydrogen (p. 28)

- On the vehicle side – standardization and costs of fueling
- On the grid side, uncertainty of whether hydrogen is viable, and/or when hydrogen would be viable

Building Electrification (p.29)

- Existing infrastructure, such as gas pipes and hookups in buildings
- Industrial sector relies on gas for high-heat processes
- What happens to the existing gas distribution system
- Complexities of whole-home retrofits

Energy Efficiency (p.31)

- Lack of an energy efficiency baseline for electric conversions
- Need to focus on health/safety

Low-Carbon Fuels (p.32)

- Limited access to low-carbon fuels
- Upfront costs of low-carbon fuels

AFFORDABILITY

Integrated Resource Planning (p. 34)

- Shifting peaks, and impact of electrification on load shape
- Uncertainty on where last 20% of decarbonization comes from
- Continued reliance on gas plants for flexible supply
- Potential and cost of offshore wind

Demand-side management (p.35)

- The role of demand-response: as a capacity resource or for daily ramps
- The potential for systems, such as energy storage, to counteract grid needs when serving customer schedule
- Lack of granular data collection on device behavior and needs

System Cost Reduction (p.36) – covers a range of issues where overall system costs can be reduced

- Unclear opportunity/ability for storage to displace T&D
- Lack of connection between utility capital investment expenditure and GIS data
- Lack of data on performance of DERs as now-wires alternatives

Rates and Rate Design (p.37)

- How do consumers respond to different rates and structures

SAFETY

Wildfire Mitigation (p.40) – a lot of obstacles and challenges

- Many to do with managing the risk of ignition, from existing utility infrastructure failure, and lack of situational awareness, to the costs and prioritization of system hardening
- Many to do with the risk of spread, where modeling is lacking in understanding fire risk or fire spread, or models and data are outdated and inaccurate.
- Some discussion here on how climate change is increasing resiliency needs, making impacts worse. And also how inaccurate local weather forecasting creates challenges.
- There is difficulty as well in identifying the best solutions, and dealing with the changing workforce needs

Public Safety Power Shutoffs (p. 43) – then we look at the impacts of wildfire prevention on customers through Public Safety Power Shutoffs

- There are challenges understanding and coordinating impacts on communities – public safety services, residents and businesses

- There are challenges to assessing conditions to be able to quickly restore power
- There have been discussions on the need to understand community risk at different time thresholds, and that reliability means different things to different customers

Cybersecurity (p. 44)

- There emerged a recognition of the growing threat of cybersecurity and consumer privacy with the proliferation of millions of new devices
- That there exists a tension between ensuring more rigorous cybersecurity protocols on smart home and building devices while bringing the costs of those devices down

Vegetation Management (p.45)

- Both inside and outside of the wildfire threat, there are challenges to implementing more significant vegetation management strategies to avoid vegetation disruption of equipment
- These emerged in discussions of the workforce availability and cost, and customer opposition, but also touched on prioritization, where data is needed

RELIABILITY AND RESILIENCY

Microgrid Development (p.46)

- There was significant discussion over the challenges and obstacles to microgrid development, not surprising since the development of microgrids can touch on many of the strategies we are discussing today
- There was consistent concern about the lack of standardization, or plug-and-play capability, of microgrid resources
- Given their custom nature, there are unclear perception, generally, about their value to customers, and their value to the grid.
- There are challenges with communication with the utility to enable and return from islanding
- And there is misalignment with interconnection procedures for these more complex set-ups
- There was a strong desire to understand what models can work, and how can the microgrid development process be streamlined for consumers

Energy Storage (p. 49)

- Over and over again, we heard about the need to ensure the cost-effective development of long-duration energy storage
- That California will have to look beyond lithium – ion
- And determine what the role battery electric vehicles can play

- When deployed, there is concern over the interaction between a customer's use of storage for their own needs, vs. the needs of the broader grid
- Repeatedly, we heard the need for better ensuring energy storage could take advantage of “value stacking” – providing grid services and gaining associated revenue

Fault detection and restoration (p.51)

- We heard the need for better sensor technology and better fault data in order to design quicker-reacting equipment and protocols

Resource Adequacy (p. 52)

- We heard of many challenges related to the multiple buyers of capacity in the market, and the obstacles in coordinating those purchases
- Further, there is uncertainty on the value of customer DR and energy storage in providing capacity services

Daily Balancing (p. 53)

- We heard about the new ramp needs, and the challenges of meeting those needs without flexible generation
- But also the need for better forecasting tools to better leverage renewable resources

Grid modernization (p.54)

- Much overlap here with wildfire mitigation challenges – specifically on the costs to enhance system controls, and to sectionalize and re-route circuits around faults
- There was also discussion here, though, of leveraging distributed resources to provided enhance power quality and voltage support

Distribution Resource Planning (p.55)

- Which was the context for the distribution resource planning section as well
- How can we use distributed energy resources to enhance reliability and power quality on the grid?
- There was further discussion on the need for more complex protection, and managing things such as reverse power flow

Forest Biomass (p.56) was added as a specific strategy in support of microgrid development

- Yet, there still seems to be challenges with interconnection and overall project costs and economics

Climate Adaptation (p. 57)

- One of the biggest concerns we heard in this topic was the gaps in climate impact modeling on the energy system
- That includes the increased need for cooling, because of electrification, or otherwise

- It also impacts the availability of hydro resources
- And could impact thermal overload of equipment and... workers

EQUITY

One of the most consistent things we heard was a need for us to consider equity impacts and challenges throughout the broader goals, and have reflected such obstacles and challenges in each section. However, there were also challenges and obstacles we specifically accounted for in the equity goal category.

The first was Inclusive Energy Program Design (p. 58)

- Challenges we heard here were the current lack of private investment in disadvantaged and low-income communities
- The high upfront cost of new consumer technology
- The lack of understanding of Disadvantaged community needs, and strengths
- And the need to understand the risks inherent in new technology

Wealth-building and ownership (p.59)

- One thing to note, is that ensuring equitable access to the clean energy economy isn't just about program participation – it is also about economic development and wealthy-building. The other kind of equity.
- Challenges identified there included limited financing options, access to capital and credit, tax credits and incentives, and high upfront costs
- Many projects require multiple financing mechanisms, which is difficult for new entrants to piece together

Public Outreach and Education (p. 60)

- And ensuring consumers know about these programs and initiatives is an effort unto itself.
- But there are significant obstacles there as well – a lack of outreach or data on outreach efforts.
- Uncertainty or unclear communication of benefits
- Limited resources among community-based organizations and residents to participate
- Language barriers to communication
- And a long-term commitment to communities that persist

Partnership Area Input:

The meeting participants provided the following feedback on additional challenges or obstacles which should be added to the PIPA Framework.

- Strategy: Renewable Energy Development
 - Challenge: PV panel efficiency improvements are slow
- Strategy: Energy Storage
 - Challenge: Battery efficiency and capacity improvements are slow
- Strategy: Wildfire Mitigation
 - Challenge: Optimized asset risk management strategies
 - Challenge: Future grid topology is unknown
- Strategy: Grid Modernization
 - Challenge: Future grid topology is unknown
 - Challenge: Limited access to capital for grid devices and grid technologies
 - Challenge: advanced distribution automation – how to network in different new resources
 - Challenge: How do you communicate with, control, and strategically optimize new resources
 - Challenge: How do you coordinate capacitor banks with DER for Volt/Var support
 - Challenge: How do you incorporate advanced operations to manage risk, improve safety, and achieve a good customer experience
- Strategy: Fault Detection and Restoration
 - Challenge: How do you use new fault indicators to better identify fault location
- Strategy: Distribution Resource Planning
 - Challenge: Optimized asset risk management strategies
 - Challenge: Future grid topology is unknown
 - Challenge: Flexibility of grid architecture with population changes, climate change, and wildfire risk
 - Challenge: If we were rebuilding the grid from scratch, what would it look like?
- Strategy: Climate Adaptation
 - Challenge: Identifying impacts of population trends
 - Challenge: How does flexible grid architecture help adapt to changing climate impacts?
- Strategy: Transportation Electrification
 - Challenge: How to educate fleet managers on opportunity to electrify

- Challenge: How to reduce education gap through dealerships
- Challenge: Cost of insurance for charging infrastructure

Prioritization and Proposed Rubric:

The Project Coordinator presented a draft rubric to help narrow the obstacles and/or challenges into 5-10 potential PIPA areas. The draft rubric prioritizes based on the following:

1. Timely Opportunities
2. Enhanced Coordination Accelerates Outcomes
3. Critical Challenges

The meeting participants provided additional feedback around prioritization and narrowing of obstacle and/or challenges to 5-10 potential PIPAs.

- Critical areas should be defined by areas that PICG members identified in interviews as priorities for their respective organizations
- Partnership Areas should be focused on areas where RD&D can have an impact
- Focus around Disadvantaged Communities and Equity
- Focus on what has been done in EPIC
- Focus on technology-focused obstacles
- Make sure Partnership Areas align with constraints of the EPIC program
- Ensuring we capture RD&D work that may touch many strategies.
- Ensure we recognize that as the world changes, so will the need in the research arena.

The PICG members also provided in the meeting some examples of high priority areas for their organizations. This is not a complete list, and the PICG will have opportunities to provide further input and feedback during the formal comment period.

- Wildfire mitigation
- PSPS and mitigation of PSPS impacts
- Asset management
- Microgrids and resiliency
- Pricing that sends correct signals to DERs, including flexible load

- and customer-controlled demand
- Clean generation as it relates to local resiliency needs
 - Equity – lack of understanding of customer needs
 - Equity – the need to do outreach to disadvantaged communities, and the challenges of such outreach
 - Decarbonization
 - Integrated Resource Planning

Next Steps

The Project Coordinator is looking for continued feedback in the form of formal comments, due 3/30. These comments should be focused on:

- Obstacles or challenges not identified in the draft PIPA Framework
- Timely policy decisions to be made in the next 12-18 months
- Identification of most critical issues
- And any previous work which has been done to date to help map EPIC projects

PICG Members are also asked to nominate their top proposed Partnership Area topic ideas by the 3/30 deadline as well.

**Please send formal comments to the Project Coordinator at:
andrew@theaccelerategroup.com**

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For general inquiries, please email:
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