



Request for Proposals
Energy Markets and Planning program (E-MAP)
Assisting States in Developing Comprehensive Roadmaps to Address
Energy Infrastructure Modernization
Webinar Date: Monday, August 17, 2015
Questions Due: Wednesday, September 30, 2015
Responses Due: Thursday, October 15, 2015

Program Background and Important Information

A. Program Purpose, Goal, and Context

The National Association of State Energy Officials (NASEO) and the U.S. Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability (DOE-OE) have increasingly heard from states and private sector stakeholders about the need to address a growing range of interdependent electricity system issues, such as the following: the need to modernize the electric grid and distribution system and related energy infrastructure; dramatic advances in and increased use of demand-side and supply-side energy efficiency, renewable energy, distributed energy, and smart grid technologies; improvements in energy storage and two-way power flow opportunities; and greater public and private focus on resilience, reliability, and affordability. To assist State Energy Offices in addressing this complex set of interrelated energy challenges and economic opportunities, NASEO, with support from DOE-OE, created the Energy Markets and Planning (E-MAP) program.

The goal of the E-MAP program is to help states develop comprehensive approaches to advancing electric system and related energy infrastructure modernization, resilience, and affordability. To achieve this, the program will provide assistance to 2-3 State Energy Offices (the pilot states), selected under this request for proposals, in developing a state-led electric system modernization roadmap that takes a comprehensive view across the electric system to include advances in renewable energy, distributed generation, energy storage, ancillary services, and energy efficiency with the aim of fostering market innovation and ensuring a reliable, affordable, and environmentally sustainable electric system. The practices, lessons learned, and resources developed through working with these pilot states will be made available to help other states pursue goals and undertake their own roadmapping and system planning efforts.

The E-MAP program comprises three phases and will be implemented over approximately 12-18 months. Phase 1 of the program was launched in November 2014. NASEO researched existing state policies, new market trends, and emerging energy infrastructure issues to inform the overall program, gauge state interest, and form a basis for the Program Selection Criteria (see Section F). NASEO also developed an example case study¹ to illustrate a state's *initial* efforts in examining its energy system and market needs on a more comprehensive basis (Attachment A). This case study presents an ongoing scenario in which a state has identified emerging energy system interdependencies, opportunities, and challenges, undergone a roadmapping process, and implemented an action plan for holistically addressing these converging

¹ This case study presents an illustrative example only, and does not preclude this or any other state from applying under E-MAP.

energy sector and system issues. The study is included as a reference to provide applicants with an overview of one state's approach to the road mapping process and illustrates the ongoing transformative impacts such a process can have on a state's electric system.

Phase 2 of the program includes the selection of 2-3 pilot states from responses to this request for proposals. Selected applicants will lead a roadmapping process in their respective state to establish a baseline analysis of market design, policy incentives, technical requirements, grid reliability, resilience, and opportunities across the electricity sector. More information regarding the roadmapping process and expectations can be found in Section D.

During Phase 3, NASEO, with input from the pilot states, will design and create a toolkit and training module for other states to consider in addressing similar challenges and opportunities. Given the level of national attention to these important issues (e.g., Quadrennial Energy Review), NASEO anticipates ongoing opportunities for state-federal cooperation in support of grid modernization throughout and following the E-MAP program.

B. State Proposals and Commitments Sought

This NASEO E-MAP program request for proposals seeks State Energy Offices² interested in committing to a 12-18 month state-led electric system modernization roadmap process which takes a comprehensive view across the electric system. The effort would include, but not be limited to, advances in renewable energy, advanced metering, infrastructure, demand response, distributed generation, energy storage, energy efficiency, and other energy system considerations with the aim of fostering market innovation and ensuring a reliable, affordable, and environmentally sustainable electric system. The proposal and process must be led by the State Energy Office.

Proposals must be for a single state roadmapping process and should be state-defined in accordance with the E-MAP guidelines discussed in Section D of this document. Multi-state proposals will not be considered. In addition, while proposed roadmapping processes may address environmental impacts, the focus and purpose of E-MAP is not to directly support related environmental compliance activities.

Selected State Energy Offices are expected to lead the roadmapping process with the explicit support of their governors. The selected 2-3 pilot states will receive limited financial assistance and extensive technical assistance from both NASEO and DOE.³

Additional information for proposal submissions and NASEO's selection of the 2-3 pilot states is provided in the sections that follow.

Please note: Proposals will be publically available on NASEO's website and should not contain any confidential or proprietary information.

C. Eligibility

Only a State Energy Office⁴ with support from its governor is eligible to apply under this request for proposals. The State Energy Office must be willing to commit to, and lead or co-lead, the 12-18 month roadmapping process and commit staff resources to the process.

² 10 CFR 420 and 42 U.S.C. § 6321 defines "State Energy Office" as the state agency responsible for administering the U.S. State Energy Program.

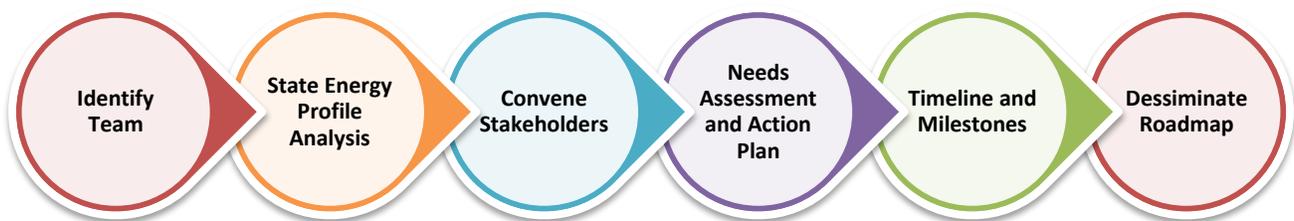
³ DOE Technical Assistance will be provided based on resources available.

⁴ See Footnote 2.

Governor support must be included with the proposal submission and may be demonstrated in one of the following ways: (1) a letter of support from the governor’s office affirming the state’s commitment or (2) a clear statement indicating the governor’s support for the E-MAP roadmapping activity. The governor’s commitment to this effort is important since State Energy Offices will be in a leadership role of convening stakeholder discussions to construct the roadmap. Further, the governor’s support reinforces the significance and value of the roadmapping effort and can effectively facilitate convening of the parties necessary to achieve success.

D. Roadmapping Process Overview

Selected pilot states will engage in a state-defined roadmapping process that presents a comprehensive view of the state’s electric system by assessing the current energy landscape and identifying interdependencies, opportunities, and challenges to energy infrastructure modernization. While participating states will have complete autonomy over roadmap design and approach, the process must act as a focusing device that marshals efforts toward identifying energy system goals and implementing critical success strategies. States will participate in monthly calls with NASEO staff to provide updates regarding process status, milestone achievement, work product development, etc. The visual below represents suggested expectations and key steps that states could incorporate into a roadmapping process.



1. **Identify Participants/Roadmap Team** (2 months) – identify key stakeholders to participate in building/informing the roadmap (state energy office staff, state and local government agency staff, utilities, industry, non-profits, regulatory commissioners, etc)
2. **State Energy Profile Analysis** – (6-8 months) analyze and identify key energy sectors, trends, emerging technologies, and system interdependencies to create a comprehensive profile of the state energy landscape (e.g., renewable energy, distributed generation, storage, services, resiliency efforts, policies, regulations, laws, state energy planning efforts).
3. **Convene Stakeholders** – (2-4 months) once an analytical foundation is established, stakeholders can convene to inform the roadmapping process by identifying areas of interest, gaps in research, or emerging trends in the state energy profile analysis.
4. **Needs Assessment and Action Planning** – (2 months) once the state energy profile analysis has been conducted, modernization needs can be estimated, interdependencies identified, and the state can set goals/targets to achieve and strategies to accomplish those goals.
5. **Timeline and Milestones** – (2 months) based on these roadmapping efforts, stakeholders will create a timeline associated with the action planning and achievement of core milestones.
6. **Roadmap Dissemination** – (Ongoing) data, work products, and successes will be tracked throughout the roadmapping process and made available to NASEO and, on an as needed basis, to other participating states. This information will be used to inform the ongoing roadmapping process and will aid NASEO in the development of an E-MAP roadmapping toolkit .

E. Financial and Technical Assistance Provided to Selected States

NASEO, with support from DOE-OE, will provide up to \$20,000 in direct financial assistance to each pilot states selected under this request for proposals. These funds are to be used to offset state's logistical and meeting costs (e.g., materials, room rental, audio visual) associated with the roadmapping. The primary resource provided to selected states is ongoing technical assistance from NASEO as described below. Applicants must include a proposed budget that illustrates how the requested financial assistance will be used. Please refer to Attachment C for the Proposal Budget Template.

NASEO and the selected states will develop a brief anticipated technical assistance needs document that identifies potential data, analytical, policy, and other assistance that would help the states in conducting their roadmapping processes. This initial information will be shared with DOE-OE. As the pilot states move forward with their roadmapping processes, technical assistance needs will be communicated by the states to NASEO – the primary technical assistance provider – for coordination with DOE-OE and other potential assistance providers.

NASEO staff, external advisors, and DOE-OE experts will provide technical assistance, which could include:

1) NASEO Technical Assistance

NASEO will be engaged with the pilot states throughout the roadmapping process and can provide the following technical assistance:

- **Energy Data and Market Research.** Assist with baseline analysis efforts, such as preparing research and summaries of relevant energy data, technology, and market trends; obtaining and summarizing existing energy data and analysis from public- and private-sector sources of a wide range of electricity related infrastructure, market and technology topics; consideration of other, related state efforts (e.g., state energy assurance plans) to assess the need for developing new and/or refining existing plans for consistency with roadmapping results; and research on and assistance with energy planning processes, assistance in identifying summaries, and preparing briefing reports (e.g., energy storage, ZNE buildings, distribution level efficiency opportunities) for each pilot state.
- **Roadmapping Process Development and Implementation.** Assist states in developing and implementing the roadmapping process. The approach can be drawn, in part, from NASEO's State Energy Planning Guidelines⁵ and best practices and refined through expert, volunteer input facilitated by NASEO. In addition, NASEO can provide assistance on meeting agenda development, preparation of draft summaries, and analysis of stakeholder input. NASEO can also assist in convening external, private sector advisory groups to assist the state in reviewing approaches and in providing roadmap input.
- **Roadmap Execution and Policy Development and Adoption.** Facilitate input (e.g., conference calls and webinars) from other states that have previously (or are currently) involved in similar activities in support of peer exchange. Facilitate ongoing technical assistance from DOE, as requested by pilot states, as well as input and assistance from private sector non-profit educational associations/organizations (e.g., conduct monthly coordination calls and arrange appropriate technical assistance).

⁵ <http://www.naseo.org/data/sites/1/documents/publications/NASEO-State-Energy-Planning-Guidelines.pdf>

2) *DOE Technical Assistance*

DOE can provide⁶ the following technical assistance to selected pilot states throughout the roadmapping process:

- **Electricity Policy Technical Assistance.** DOE-OE offers independent and unbiased technical support to states, regions, and Tribes on their electricity-related policies through its Electricity Policy Technical Assistance Program. Types of assistance offered and activities supported include:
 - **Analysis** assistance consisting of data collection and assessment activities to determine impacts and evaluate policy options and technology and market strategies
 - **Stakeholder-Convended Discussions** by organizing task forces, working groups, and collaborative processes to tackle key issues and build consensus for preferred courses of action
 - **Education and Training** through workshops and webinars to raise knowledge levels and better equip policy makers to address local and regional needs
 - **Consultations** for quick-turnaround assignments involving technical experts advising policy makers on specific matters of interest
- **DOE Experts.** Provide access to DOE's technical electricity system experts, including DOE program managers, national lab staff and other experts, for advice and technical assistance.
- **Energy Assurance Plans.** Assess the relevant short- and long-term energy assurance plans to look for opportunities to update and/or refine aspects such as energy assurance planning, energy data analysis, long-term risk and hazard identification and mitigation, and inclusion of new energy portfolios (e.g., smart grid, micro-grid, and distributed energy technologies)

F. Selection Criteria

The selection criteria were developed based on input from NASEO's Fuels and Grid Integration Committee, NASEO's Board of Directors, private sector experts, and DOE-OE.

The selection criteria should guide state responses to the request for proposals.

1) *Governor's Commitment (required)*

Demonstrate commitment by the governor to the proposed roadmapping process. This is a requirement for selection and may be demonstrated in one of the following ways: (1) a letter of support from the governor's office affirming the state's commitment: or, (2) a clear statement indicating the governor's support for the E-MAP roadmapping activity.

2) *Status of Electricity System, Related Infrastructure and Market Needs and Opportunities within the State*

Describe and demonstrate the necessary (now or in the foreseeable future) investments in electricity system and related energy infrastructure modernization in the state. For example, the need for system modernization could be the result of the addition of time-of-use rates or other new rate structures, new energy storage, renewable energy, or other distributed generation technologies, changes in electric generation and distribution, environmental

⁶ DOE technical assistance is provided based on resources available.

requirements, economic opportunities, reliability and affordability gaps, or changes in energy flows and interdependencies among various fuel types and electricity. It may also be the result of a need to integrate and optimize energy use in the electricity and transportation sectors. Proposals should address the technological and market advances that may necessitate changes to the state's approach to utility business models. In addition, proposals should address, where appropriate, the unique needs of various utility types (i.e. investor owned, public power, cooperatives).

3) *Status of Infrastructure and Electricity System Resilience*

Describe the status of electricity system and related infrastructure resilience in the state, and identify opportunities (e.g., policies, projects, programs) for improving resiliency. For example, improved planning, hardening of infrastructure, cyber security improvements, and mitigation actions (e.g., distributed generation and supply- and demand-side energy efficiency) to prepare for projected increases in extreme weather events and other large-scale disruptions to energy reliability delivery.

4) *Status of Statewide Planning Processes*

Describe and demonstrate evidence of comprehensive energy planning and/or integrated resource planning, including any emergency or energy assurance planning, in the state. If such planning has been deemed problematic by the relevant oversight agencies, explain how the State Energy Office intends to address energy planning in this project.

5) *Status of Non-Traditional Electricity Supply, Distribution, and Demand Response*

Describe the status of non-traditional supply (including demand response) and distribution in the state and demonstrate evidence of increased renewable energy production and consumption trends which suggest current need to address foreseeable distributed energy integration technical, regulatory, and policy challenges. Address new opportunities in demand response, customer enabled energy demand reduction, and pricing structures and the technologies necessary to effectuate the efficiency improvements, such as storage and advanced metering infrastructure.

6) *Availability of Resources*

Describe and demonstrate the willingness and ability of the state to provide state staff labor or other resources in support of the roadmapping process.

7) *Availability of Outside Resources*

Describe and demonstrate ability of the state to leverage other electricity and grid related resources including those in the transportation sector related to e-drive vehicles and associated charging infrastructure and/or technical assistance the state is receiving from other sources (e.g., private sector, DOE).

8) *Stakeholders' Support*

Demonstrate an interest from partners (e.g., utilities, energy efficiency and renewable energy companies, trade associations, local governments) to the roadmapping process as an ability to leverage outside resources and support.

9) *Peer Exchange Commitment*

Demonstrate willingness to share roadmapping information with NASEO and DOE throughout the process for inclusion on the NASEO E-MAP program website (to be developed). Also, demonstrate the state's commitment to assist NASEO in our efforts to share program results with other states through NASEO's completion of a roadmapping final

report. Pilot states must be willing to share best practice experiences through NASEO meetings and conference calls and assist NASEO's development of an E-MAP roadmapping toolkit and training modules under the program.

G. Proposal Review and Scoring

NASEO, in consultation with a set of external advisors and DOE-OE, will select 2-3 states to participate in E-MAP based on the selection criteria (defined under "*F. Selection Criteria*"). **Proposals should be no more than five pages** and will be reviewed and scored based on the following:

1) *Knowledge and Impact (30%)*

Proposals should provide sufficient detail for reviewers to assess level of knowledge about the state's current electric system/infrastructure landscape (challenges, barriers, opportunities, etc.) and extent to which the proposal offers a significant impact to guide future electric system modernization policies and investments. Key considerations are described under "*F. Selection Criteria*" of this request for proposals.

2) *Workplan, Selection Criteria, and Milestones (35%)*

Proposals should clearly describe the project approach and provide a concise discussion of the selection criteria (defined under "*F. Selection Criteria*") effecting the state, and extent to which the proposed tasks include clearly defined metrics, milestones, and deliverables.

3) *Team Capabilities, Contributions, and Resources (30%)*

Proposals should clearly describe the capability and readiness of the state to conduct the pilot, the contributions and commitments from key partners, as well as how the financial technical assistance from NASEO will be leveraged. The proposal must include either a letter of support from the governor's office for the project or a clear statement within the proposal demonstrating the governor's support for the roadmapping effort.

4) *Geographic Representation (5%)*

To accurately represent the range of emerging opportunities and electricity system challenges faced by states across the nation, the final pilot state(s) selection will be partially weighted to ensure adequate geographic, electric system, and related energy infrastructure diversity.

H. Application and Submission Procedure

Responses to this request for **proposals are limited to no more than five pages**, excluding those items indicated as "not included in page limit" in the Proposal Structure Checklist (Attachment D). Proposals must be formatted to fit on 8.5 x 11 inch paper with margins not less than one inch on each side using black, Times New Roman 11 point font. Proposals should be structured following the Proposal Checklist included in Attachment D.

Proposals should be submitted via email to Stephen Goss, NASEO Program Manager, at sgoss@naseo.org by **6:00 p.m. EST on Thursday, October 15, 2015**. Submitting State Energy Offices will receive a confirmation email from NASEO verifying the receipt of the proposal. Any State Energy Office that does not receive confirmation within two hours of the deadline should contact Stephen Goss immediately at 703-299-8800.

Important: Proposals will be publically available on NASEO's website and should not contain any confidential or proprietary information.

Attachment A

Attachment A: Case Study - Hawaii

Introduction

In 2014, the U.S. Energy Information Administration reported that the average retail price of electricity in Hawaii reached \$0.37 per kilowatt-hour (kWh); three times the national average.⁷ The State's history of having the highest electricity costs in the nation is underpinned by its geographic isolation and subsequent dependence on petroleum fuels. Hawaii relies on imported petroleum products to supply nearly 80% of its energy needs, resulting in nearly 10% of the state's gross domestic product (GDP) being directed towards meeting these energy costs. However, Hawaii has taken an impressive array of actions to overcome these challenges and create new economic opportunities that draw on the state's indigenous resources.

With strengthening political and regulatory support, growing consumer and investor confidence, and emerging smart energy technologies, Hawaii is now leading the nation in the development of local, clean energy resources. The state has an abundance of all forms of renewable energy, including solar, wind, biomass, and geothermal, and in recent years has experienced a rapid uptake in renewable market penetration, particularly in residential distributed solar. While the shift to diversify energy supply through the integration of renewable resources presents a sustainable option in the electricity sector for Hawaii,, an increased reliance on variable generation sources also creates new challenges in the form of concerns about grid stability, more complex integrated resource planning, constraining utility business models, a need for new policy and regulatory frameworks, and ongoing affordability issues. Moving forward, Hawaii's successful state energy vision incorporates the strengths, challenges, and interdependencies of the state's traditional energy and electric system with the mounting potential of variable generation resources, enhanced energy efficiency, and new electric system technologies.

Case Study

In order to provide a mechanism to overcome the above energy system challenges and create a clean energy strategy that could support the state's economic development goals, Hawaii signed a Memorandum of Understanding (MOU) with the U.S. Department of Energy (DOE) in 2008 to create the Hawaii Clean Energy Initiative (HCEI). The core mission of HCEI is to coordinate with stakeholders in Hawaii across all energy sectors to identify and evaluate energy system challenges, opportunities, and interdependencies in order to devise a comprehensive strategy for addressing these issues. In successive legislative sessions in 2009 and 2010, the State Legislature formally recognized the contributions of HCEI by strengthening its renewable portfolio standard, establishing an energy efficiency portfolio standard, and ratifying its role in leading Hawaii's clean energy efforts. In 2011 an HCEI Road Map was completed to serve as an integrated framework that supports each energy sector independently while simultaneously coordinating across all sectors to provide a holistic approach to energy planning. With guidance by the HCEI Management Team and Steering Committee, the HCEI Road Map was developed with technical support of the National Renewable Energy Laboratory and identified four key sectors of the Hawaiian energy economy: electricity generation, end-use energy efficiency, transportation, and, fuels. Once acknowledging these priority energy sectors, the Road Map systematically established goals for each and created short and mid-term "multi-faceted strategies for success" to develop a comprehensive strategy in which all sectors of the energy economy are aligned with the goal of reaching 70% clean energy by 2030.

⁷ http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_6_a

Clean Energy and Energy Efficiency

In order to realize the goal of a 70% clean energy economy by 2030, Hawaii has undertaken a host of initiatives aimed at facilitating the deployment of renewable energy and increasing energy efficiency. The cornerstone of HCEI is the Hawaii Renewable Portfolio Standard (RPS) that mandates “renewable electric energy” sales to be 40% of the net electricity sales of each electric utility in the state by the year 2030⁸. This target is preceded by a graduated set of RPS goals that require 15% and 25% renewable electric energy sales by 2015 and 2020, respectively. By the end of 2013, the Hawaii Public Utility Commission had acknowledged that the state had exceeded its 2015 RPS target of 15%.⁹ In 2015, the Hawaii Legislature established the nation’s first 100% RPS when it upgraded the interim 2020 RPS to 30% and set new targets for 2040 and 2045 at 70% and 100%, respectively.

Until January 1, 2015, Hawaii’s RPS was complimented by an Energy Efficiency Portfolio Standard (EEPS), which aims to reduce electricity use by 30%, or 4,300 gigawatt-hours (GWh), by 2030. As of this year, the EEPS has been separated from the RPS to become a standalone policy under which energy efficiency measures and displacement or offset technologies will no longer count towards fulfilling the state’s RPS.¹⁰

Infrastructure Analysis and Planning

To create an integrated strategy capable of coordinating all energy sector processes in a holistic fashion, the HCEI Steering Committee incorporated a thorough analysis of Hawaii’s energy infrastructure into the roadmapping process. These analyses involved coordination between local, state, and federal government agencies, the private sector, non-governmental organizations, trade associations, and universities to identify core sectors of the energy economy and develop comprehensive strategies to address energy system challenges. To examine how the integration of variable resources would impact the state’s infrastructure, wind and solar power grid integration and modeling studies were conducted across the state to identify opportunities and challenges for meeting future clean energy goals. In addition, smart grid demonstration projects have been commissioned by several utilities, including Maui Electric and Kaua’i Island Utility Cooperative (KIUC), to examine the potential role emerging technology will play in mitigating threats to infrastructure and boosting grid resiliency.

The Hawaiian Electric Companies’ Integrated Resource Plan (IRP) was an initial step in demonstrating how generators can meet the needs of Hawaiians while ensuring the integrity of energy infrastructure. This group, comprised of the Hawaiian Electric Company, Maui Electric Company, and Hawaii Electric Light Company, proposed in its 2014 IRP to make strides to accelerate the decommissioning of old oil-fired steam generators, procure or develop low-cost utility scale renewable resources, and convert existing generating units to cost effective renewable and lower carbon fuels.¹¹ Taking into consideration comments and recommendations by the Hawaii State Energy Office, Consumer Advocate and other intervenors, the Hawaii PUC rejected Hawaiian Electric Companies’ IRP and associated action plans and ordered the utilities to prepare new plans (i.e., a Power Supply Improvement Plan (PSIP) and a Distributed Generation Interconnection Plan (DGIP)) to better achieve Hawaii’s clean energy future.

⁸ <http://energy.gov/savings/renewable-portfolio-standard>

⁹ <http://www.utilitydive.com/news/hawaii-provides-us-utilities-a-glimpse-of-the-future/272824/>

¹⁰ <http://programs.dsireusa.org/system/program/detail/4511>

¹¹ <http://www.hawaiianelectric.com/vcmcontent/IntegratedResource/IRP/PDF/IRP-2013-Report-Filed.pdf>

Although the Hawaii PUC has yet to rule on the PSIP, DGIP and other associated plans, the updated process is regarded as a turning point in State–utility cooperation and reflects the central role in the HCEI model and Road Map in driving the State’s clean energy vision.

Energy System Activity

Since the implementation of the HCEI Road Map in 2011, the State of Hawaii and relevant stakeholders have made significant efforts toward reaching the 70% clean energy economy target. These efforts can most readily be seen in the ongoing investments and commitments that partners are making in the electricity, end-use efficiency, transportation, and fuel sectors. A clear indicator of stakeholder consensus and commitment to realizing the state’s energy goals was the formal Energy Agreement between the HECO Companies and the State of Hawaii in 2008. Through this agreement, HECO Companies pledged to advance HCEI objectives in the regulated electricity sector by accelerating renewable energy, promoting measures to increase energy efficiency, and investing in grid operation and infrastructure.¹² Since this agreement, HECO investments alone in solar PV have led to an increase from 850 PV systems in 2008 to over 43,000 systems in 2014.¹³ Today, 12% of the state’s residential homes have distributed rooftop PV, with a total of 600,000 installed systems across the state and an estimated 3.3 million installations by 2020.¹⁴ Similar activity to expand wind production, bring online new biomass facilities, and deploy advanced metering infrastructure are underway across the state as utilities are driven by the RPS, EEPS, and PUC to reduce electricity consumption and improve end-use efficiency. These efforts have also been supported by stakeholder interest in promoting grid resiliency through next generation technologies and multiple awards for smart grid projects from the Department of Energy.

The Hawaii State Energy Office has also taken an innovative approach to pursuing HCEI goals and assisting potential investors, policy makers, and other energy stakeholders by designing a website that presents an integrated resource hub that catalogues information on the state’s energy portfolio. Through the website, stakeholders have access to GIS systems for resource siting and planning, streamlined permitting services and information, and ease of access to key programs such as the Green Energy Market Securitization and Energy Savings Performance Contracts programs. The resources presented through this online suite of self-help tools overlay every energy sector to create an innovative and transparent platform to facilitate project development and strengthen investor confidence.¹⁵

Analysis

While Hawaii is unique in many ways, it presents a familiar case in which growing electricity costs and a staggering reliance on imported petroleum, coupled with the steady emergence of variable generation technologies, threatens grid reliability and applies pressure to the prevailing utility business model. Despite the efforts of the HECO Companies, the Hawaii PUC maintains that the companies’ utility business models lack strategic focus and fail to provide a clear connection between energy sector interdependencies and HCEI clean energy goals.¹⁶ According to a white paper issued by the Hawaii PUC after rejecting HECO’s 2014 updated IRP, HECO companies failed to develop a sustainable business

¹² <http://www.hawaiianelectric.com/vcmcontent/StaticFiles/pdf/HCEI.pdf>

¹³ <http://www.utilitydive.com/news/hawaii-provides-us-utilities-a-glimpse-of-the-future/272824/>

¹⁴ <http://www.nytimes.com/2015/04/19/business/energy-environment/solar-power-battle-puts-hawaii-at-forefront-of-worldwide-changes.html>

¹⁵ <http://energy.hawaii.gov/>

¹⁶ <http://www.greentechmedia.com/articles/read/hawaii-crosses-the-energy-rubicon>

model that will ensure customer service and affordability while maintaining reliable and innovative energy services.¹⁷ The PUC contends that while HECO Companies are capable of aligning utility investment and development strategies with the holistic energy vision of the HCEI Roadmap, utilities are slow and in some cases unwilling to adapt to the changing energy landscape. Since 2013 the number of PV permits awarded annually for rooftop solar has dropped significantly. This can be attributed to the interconnection challenges associated with rapid solar penetration, but many suggest it is also a result of the threat distributed energy resources pose to utility revenue streams.

Outcome

While these challenges can be seen across the country, the HECO Energy Agreement signed by then Governor Linda Lingle and the Hawaii-DOE MOU in support of the HCEI in 2008 was the catalyst that signaled to the public, potential investors, stakeholders, and the nation that a clear, clean, and comprehensively designed energy pathway would be a permanent fixture in the state's energy future. These agreements identified the interdependent nature of emerging energy sector concerns and were established to holistically approach the challenges of ongoing state supply restrictions, growing electricity costs, increasing variable resource deployment, and transitioning to a modern electricity infrastructure. While the goal of reaching a 70% clean energy economy is a long term prospect, confidence in the strategy has been repeatedly reaffirmed. In September 2014, Governor Abercrombie and DOE Secretary Moniz signed a new MOU to support a renewed HCEI 2.0.¹⁸ In a resounding endorsement of HCEI's progress to date, the Hawaii State Legislature voted in May of 2015 to make electricity generation 100% renewable in the state by 2045.¹⁹ Building on the statutory, regulatory and incentive structures established by the initial phase of HCEI, HCEI 2.0 intends to meet this lofty generation goal and maintain the state's status as a clean energy leader while making additional efforts to maximize stakeholder collaboration and engagement, identify new key areas and energy sector interdependencies, and facilitate the sharing of resources and solutions.

¹⁷ <http://puc.hawaii.gov/wp-content/uploads/2014/04/Commissions-Inclinations.pdf>

¹⁸ <http://energy.hawaii.gov/testbeds-initiatives/hcei>

¹⁹ <http://www.hawaiicleanenergyinitiative.org/hawaiian-lawmakers-say-aloha-to-100-renewable-energy-by-2045/>

Attachment B

Attachment B: Proposal Cover Page Template

**Energy Market and Planning program (E-MAP)
Assisting States in Developing Comprehensive Roadmaps to Address
Energy Infrastructure Modernization**

Project Title: _____

Primary Applicant Organization
(State Energy Office): _____

Mailing Address: _____

Technical Point of Contact: _____ Telephone: _____

Email Address: _____

Business Point of Contact: _____ Telephone: _____

Email Address: _____

- Please check the box on the left to affirm your understanding that proposals will be publically available on NASEO's website and should not contain any confidential or proprietary information.**

Proposals should be submitted via email to Stephen Goss, NASEO Program Manager, at sgoss@naseo.org by 6:00 p.m. EST on Thursday, October 15, 2015.

Attachment C

Attachment C: Proposal Budget Template

Energy Market and Planning program (E-MAP)
Assisting States in Developing Comprehensive Roadmaps to Address
Energy Infrastructure Modernization

**Proposed
Budget**

Primary Applicant: _____

Project Title: _____

Point of Contact: _____

Telephone/Email: _____

	Requested from NASEO	State Cost Share (not required)	Total
Labor (fully loaded)			
Travel/Meetings			
Other (Please describe below)			
Total:			

Attachment D

Attachment D: Proposal Structure Checklist

- 1) *Cover Page* (not included in page limit: see Attachment B)
- 2) *Project Overview* (included in 5 page limit)
 - a. Provide background, goals, relevance, and potential impact (include description of economic and policy drivers)
- 3) *Project Workplan* (included in 5 page limit)
 - a. Project objectives, scope of work, milestones, and project schedule (include description of proposed approach and process, types of assistance sought, and approach to sharing pilot best practices and results)
- 4) *Qualifications and Resources* (not included in page limit)
 - a. Qualifications of key personnel and partners
- 5) *Appendices* (not included in page limit)
 - a. Governor's commitment letter OR inclusions of a statement within the body of the proposal that the process and proposed goals of the roadmapping are supported by the governor of the state
 - b. Proposed budget that illustrates how the requested financial assistance will be used (*see attachment C*)
 - c. Resume for the project's lead State Energy Office staff member
 - d. Letters of support from public and private sector partners
 - e. List of citations for relevant state policies, regulations, programs, etc. that are germane to the project proposal