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May 1, 2015

Hon. Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Re: Cases 14-E-0318, 14-G-0319, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Electric Service; Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Gas Service* (Central Hudson's Report Regarding the REV Collaborative and Developing Demonstration Projects)

Dear Secretary Burgess,

Central Hudson Gas & Electric Corporation ("Central Hudson") filed the above referenced cases ("Rate Case") on July 25, 2014 to amend its gas and electric delivery rates. When Central Hudson filed its Rate Case it was aware of, and participating in, Case 14-M-0101 concerning Reforming the Energy Vision ("REV"). As part of its Rate Case filing Central Hudson proposed four projects consistent with the New York State Public Service Commission's policy goals expressed in the REV proceeding.

Central Hudson served a Notice of Impending Settlement Negotiations with all Parties to the Rate Case on November 25, 2014. On February 6, 2015, Central Hudson, Staff, Multiple Intervenors ("MI"), and other Parties to the Rate Case filed and recommended that the Commission approve a Joint Proposal resolving all issues in the Rate Case.

Pursuant to the Joint Proposal ("JP") the parties agreed to convene an open transparent process in the form of a Collaborative and within the Collaborative, referred

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to in the JP as the "REV Working Group," to develop REV Demonstration Projects to recommend to the Commission for approval as part of the Commission's Rate Case Order. Collaborative discussions remain subject to the Commission's settlement confidentiality rules. The JP provides that Central Hudson will file a report detailing the REV demonstration projects developed within the Collaborative for the Commission's consideration no later than May 1, 2015.[1]

Since the JP was filed the Commission has, in Case 14-M-0101, issued its Order Adopting Regulatory Policy Framework and Implementation Plan, Issued and Effective February 26, 2015 ("REV Order"). The Commission set forth its criteria and principles regarding Demonstration Projects in REV in its Memorandum and Resolution on Demonstration Projects issued and effective December 12, 2014 and further addressed Demonstration Projects as part of the REV Order. The REV Order requires utilities to "file initial demonstration projects…, not later than July 1, 2015, unless demonstration projects have already been proposed within a rate filing."[2] Because Central Hudson proposed Demonstration Projects as part of its rate filing this REV Demonstration Project Report ("Report") from Central Hudson, developed cooperatively with the participants in the REV Demonstration Project Collaborative ("Collaborative") agreed to as part of the Rate Case, Central Hudson is not required to file a July 1, 2015 Report, although Central Hudson may file an update of its Demonstration Projects or additional Demonstration Projects on July 1, 2015. Further, the Joint Proposal ("JP") pending before the Commission in the Rate Case recommends that, to the extent not otherwise addressed or superseded by subsequent Commission orders, the Commission authorize Central Hudson:

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[1] *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Electric Service; Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Central Hudson Gas & Electric Corporation for Gas Service*, Cases 14-E-0318, 14-G-0319, (JP at 42) (February 6, 2015) (The Joint Proposal also provides that parties may file comments on the Report no later than May 15, 2015, in which they may support or object to any project or aspect thereof described in the Report. [JP at 42-43]) (Herinafter Referred to as Case 14-M-0318 et al., (Document at ___) (Date).

[2] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, Case 14-M-0101 (Order Adopting Regulatory Policy Framework and Implementation Plan at 115-116) (Issued and Effective February 26, 2015) (Hereinafter cited as "REV Order at___).

> to defer for future recovery the incremental revenue requirement effect, net of revenues of the Company's share of Reforming the Energy Vision ("REV") Demonstration Project capital expenditures up to $10 million including recovery of related operations and maintenance costs associated with any REV Demonstration Project not paid by the project participants or a third party that is authorized by the Commission in these proceedings,...[3]

Similarly, the REV Order states that the "[u]tilities will be permitted to defer the revenue requirement impacts of the incremental costs of demonstration projects…"[4] The REV Order also provides for Staff review, rather than Commission approval, of utility demonstration projects, but does not provide for Staff approval or authorization of the Demonstration Projects.[5]

Because Central Hudson cannot defer costs associated with Demonstration Projects absent express authorization of each Demonstration Project and the related deferral, Central Hudson respectfully requests that, consistent with the REV Order, as part of the Order in these proceedings, the Commission clarify the REV Order and grant to Central Hudson deferral and cost recovery accounting treatment for each Demonstration Project for which Staff provides written authorization to proceed. Central Hudson requests that the Commission authorize the continuation of deferral and cost recovery authority until the Commission issues its next Rate Case Order applicable to Central Hudson wherein Demonstration Project costs shall be addressed. Absent express approval of the requested deferral and cost recovery process described herein Central Hudson will not be able to defer and recover the costs associated with Demonstration Projects and will not be able to proceed with the proposed Demonstration Projects.

Attached hereto is the Report recommending that the Staff review and authorize the development of specified REV Demonstration Projects subject to deferral and cost recovery. The Demonstration Projects recommended included:

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[3] Case 14-M-0318 et al.. (JP at 22) (February 6, 2015).
[4] REV Order at 116.
[5] *Id*.

1. Central Hudson's Community Solar;
2. SolarCity's Community Solar;
3. Central Hudson's Demand Response;[6]
4. Central Hudson's Microgrid;
5. Central Hudson's Behind the Meter Services; and
6. Citizens for Local Power's Community Choice Aggregation.

The description of each Demonstration Project was prepared by the sponsoring entity. Additional demonstration projects and concepts discussed and considered by the Collaborative, include but have not been limited to: Consolidated Edison Solutions' proposal for a third party owned community solar project where the financial purchase is set equal to the plant's output; Duchess County's proposal for permitting customers to purchase ownership shares in a utility owned community solar project; and MI's proposal for a large commercial and industrial Self-Direct energy efficiency project.

The Report includes a description of the Collaborative process and the participating Parties, each Demonstration Project, Demonstration Project business case, a recommendation for Staff review and development of Demonstration Projects, and the Collaborative's next steps.

Please contact the undersigned at (845)486-5831 or pcolbert@cenhud.com with any questions regarding this matter.

Respectfully submitted,

Paul A. Colbert
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[6] As part of the REV Order the Commission required utilities to file a potential non-wires alternative by May 1, 2015. Rev Order at 130. Central Hudson's Demand Response Demonstration Project is also its non-wire alternative and fulfills the requirement set forth in the REV Order. Central Hudson will file a letter in REV on May 1, 2015 expressly offering its Demand Response Demonstration Project initially filed in Central Hudson's Rate Case as its non-wire alternative.

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INTRODUCTION

Central Hudson included four Demonstration Projects as part of its Rate Case filing because it recognized the importance of the REV proceeding initiated by the New York State Public Service Commission ("Commission") and wanted to work with the Commission and Staff to realize REV's goals. Central Hudson started the Demonstration Project development process and worked with Staff and the Rate Case Parties to identify and refine goals and objectives so that it could develop and present Demonstration Projects consistent with the criteria and goals enunciated by the Commission and that would inform Central Hudson, Parties, Staff and the Commission regarding issues raised by REV.

The Rate Case settlement proceeding afforded Central Hudson, Staff and the Parties an opportunity to define a cooperative process by which all of the Rate Case participants could propose and develop Demonstration Projects. The objective was not to discourage any Party from proposing a Demonstration Project, but rather to assist all Parties to develop Demonstration Projects that could be implemented and informative without bias toward a particular policy objective.

COLLABORATIVE PROCESS AND IDENTIFICATION OF PARTIES

The Collaborative process has been collegial. All Parties to the Rate Case were invited to participate in the Collaborative. Those actively participating include Central Hudson, Staff, Citizens for Local Power, SolarCity Corporation ("SolarCity"), NRG Energy, Inc. ("NRG"), Utility Intervention Unit ("UIU"), Retail Energy Supply Association ("RESA"), the Pace Energy and Climate Center (Pace"), Multiple Intervenors ("MI")., Dutchess County ("Dutchess"), Direct Energy ("DE") and Consolidated Edison Solutions ("CES").

The Parties have engaged in a free exchange of ideas, policies and projects. The discussions have been frank and productive. Central Hudson has met with Parties to help them prepare Demonstration Projects for inclusion in this Report. The Parties have committed to continue the REV Demonstration Project Collaborative beyond those Demonstration Projects included in this Report. Thus, additional waves of Demonstration Projects may arise for the Staff's consideration. Central Hudson may report such additional REV Demonstration Projects as part of a July 1, 2015 REV filing or in subsequent filings.

Central Hudson will file quarterly reports with the Secretary as specified in the Commission's REV Order and the JP.[7]

The Commission, in REV, set forth ten criteria and eight principles to guide the formation of Demonstration Projects.[8] The criteria are: (a) Flexibility; (b) Demonstrating Innovation; (c) Value Distribution; (d) Partnerships; (e) Customer Engagement; (f) Market Solutions; (g) Developing Competitive Markets; (h) Ensuring Cyber-security; (i) Scalability; and (j) Cost Recovery. The principles are: (a) Partnerships between utilities and third party providers; (b) Lessons Learned; (c) The division of economic value between customers, third party providers and the utility; (d) Competitive markets and the need, or lack of need, for utility ownership of distributed generation; (e) The development of the competitive markets, appropriate regulation to ensure safety, reliability and consumer protection; (f) Demonstrations should inform pricing and rate

[7] REV Order at 116-117,.
[8] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, Case 14-M-0101 (Memorandum and Resolution on Demonstration Projects) (Issued and Effective December 12, 2014).

design; (g) Deployment of advanced systems; and (h) Diversity of customers participating. The Collaborative believes that the Demonstration Projects contained herein meet all of the Commission's criteria and principles as further discussed in this Report. The report reflects a compromise of party viewpoints, and does not represent the unanimous view of all Collaborative participants.

DEMONSTRATION PROJECTS

I. Central Hudson Owned Community Solar

A. Project Description

The Central Hudson Community Solar Demonstration Project is designed to offer all Central Hudson customers, including those taking service from energy service companies ("ESCO"), the opportunity to participate in the solar energy market through a photo voltaic ("PV") solar generation facility located within Central Hudson's service territory. A significant goal of this Community Solar Demonstration Project is to provide customers who may not be able to install a customer sited PV solar facility with an opportunity to obtain a comparable product to that produced by a rooftop solar installation through solar energy generated at a facility located in a local community.

The Community Solar Demonstration Project is aligned with the stated goals of REV and will lead to: a reduction in carbon emissions; an increase of customer choice and engagement; a broader customer market for solar renewable products; a reduction to the subsidies necessary to support solar renewable products; a stimulation of local economies through jobs creation; and an increase to the local tax base where the solar facility is located. Customer participation in the Community Solar Demonstration Project is voluntary.

Central Hudson will own the proposed Community Solar Facility and already owns the land upon which it will be situated. Central Hudson's Community Solar Demonstration Project will be located in Ulster County at Kings Highway in the Town of Saugerties. Customers may participate in the Community Solar Demonstration Project by purchasing the financial equivalent of a minimum of one 100 kWh energy tranche each month. Customers may purchase the financial equivalent of 100 kWh energy tranches up to 100% of their average monthly usage. Central Hudson will charge

customers a fixed price per kWh for each financial equivalent purchased and the rate will not change for the period of the purchase agreement. Central Hudson will offer customers a twenty-five (25) year agreement. Customers will be required to pay an exit fee if they exit the contract within the first two years. The fixed price agreement will act as a hedge against potentially rising commodity costs. Each customer's purchase of a financial equivalent will displace a 100 kWh equivalent portion of energy from the commodity portion of the customer's bill.

Central Hudson has sought from New York State Energy Research and Development Authority ("NYSERDA") an allocation of the Renewable Portfolio Standard ("RPS") funds for the Community Solar Demonstration Project. Central Hudson will claim the Federal Investment Tax Credit ("ITC") to the extent that the Community Solar Demonstration Project is eligible. Central Hudson is seeking NYSERDA RPS funds and the ITC to place customers' costs of purchasing solar financial equivalents from the Community Solar Demonstration Project on a comparable basis with Central Hudson's current commodity costs. Ultimately, because a utility scale solar facility costs less to install on a dollar per watt basis than a rooftop solar facility, Central Hudson expects that the subsidy required by the Community Solar Demonstration Project, in an effort to compete with the price of traditional energy, will be similar to, but less than the accumulated subsidies required to support rooftop solar facilities.

Central Hudson will set aside five percent of the Community Solar Facility's energy output for low-income customers. It will offer low-income customers a discounted rate so that they may have a reasonable opportunity to participate in the Community Solar Demonstration Project. Funding to support the discounted rate for low-income customers will come from the "incremental revenue requirement effect, net of revenues of the Company's share of Reforming the Energy Vision ("REV") Demonstration Project capital expenditures up to $10 million including recovery of related operations and maintenance costs associated with any REV Demonstration Project," agreed upon at page 22 of the JP.

Central Hudson's Community Solar Demonstration Project will not be net-metered. Thus, it will not shift project costs from participating customers to non-

participating customers through the net metering mechanism. Customer participants, also known as subscribers, will pay for all of the costs associated with the Community Solar Demonstration Project, excluding subsidies required to make the project viable in the competitive energy market. Central Hudson will not proceed with construction of the Community Solar Demonstration Project until it is 70% subscribed and unless it receives a one-time subsidy from NYSERDA or elsewhere. Subscribers will be exempt from System Benefit Charges ("SBC") and RPS charges for each 100 kWh equivalent solar financial equivalent purchased from the Community Solar Facility. This exemption of charges, combined with the required subsidy, serve to place Community Solar Demonstration Project customers on an even footing with rooftop solar customers.

The fixed price per kWh charged for solar financial equivalents will include the annual cost of service on the asset. Cost components that make up the fixed price include: project installation, project material, labor, property taxes, insurance, operation and maintenance, interconnection, Central Hudson's cost of capital, environmental and permitting, site security, and IT programming. Central Hudson's capital investment may allow it to test new technologies such as storage and smart inverters.

Central Hudson's Community Solar Demonstration Project represents a financial, not a physical, transaction. While customers will support and get the benefit associated with the capacity and energy produced by the Community Solar Facility, Central Hudson's distribution system, not the subscription customers, will receive the actual energy output of the facility.

B. Central Hudson's Community Solar Demonstration Project is Consistent with REV Criteria and Principles

1. Criteria

a) Flexibility

Central Hudson's Community Solar Demonstration Project provides Central Hudson, third parties operating in the competitive markets and customers the flexibility to participate in the Community Solar Demonstration Project in the manner and at the cost that benefits them. Central Hudson can seek the services it requires to construct, maintain, and market the Community Solar Facility to subscribers. Third party providers may offer to provide all of the services set forth in the Request for Proposal ("RFP")

issued by Central Hudson, or only those services that they choose to offer. Customers may purchase solar financial equivalents that represent some or most of their energy needs from the Community Solar Facility. The Community Solar Demonstration Project provides all stakeholders with the flexibility they need to participate appropriately and provides the information needed to assess its criteria and principles.

b) Demonstrating Innovation

Currently, there are no community solar facilities in New York State, therefore, the Central Hudson Community Solar Demonstration Project in and of itself demonstrates a new business model for the state. Because the Demonstration Project is based upon a new business model it represents a new business opportunity for competitive third party service providers. Additionally, it provides an innovative approach to distributed solar energy through its utility ownership and customer subscription model, which significantly broadens and diversifies the participating customer segment compared to the existing competitive solar market. Further, the structure of the Central Hudson Community Solar Demonstration Project does not include a net-metering component, which many, if not all, other solar facilities have.

c) Value Distribution

This Community Solar Demonstration Project at a minimum provides:

- Customers with limited ability to access traditional solar resources with an opportunity to participate in the solar resources market;
- Customers with the ability to effectively hedge their commodity purchases for the next 25 years;
- A mechanism to enable customer choice;
- A facility that is funded solely by participants;
- Third party service providers with an opportunity to earn a return for providing services in the competitive market; and
- Central Hudson with the recovery of its cost of equity.

This Community Solar Demonstration Project provides Central Hudson with recovery of its cost of equity, third parties with an opportunity to earn a return for

providing services in the competitive market, and customers that have a limited ability to access traditional solar resources with an opportunity to participate in the solar resources market. Market providers may construct, maintain and market the solar facility to subscribers. The introduction of Community Solar Projects in the competitive solar market and the expansion of the customer base able to purchase solar financial equivalents as a result of the development of Community Solar Projects expand the competitive solar market. This represents a value proposition for all participants in the competitive solar market.

d) Partnerships

Central Hudson's Community Solar Demonstration Project represents a true partnership between Central Hudson, competitive providers, customers and government. Central Hudson issued an RFP seeking competitive providers to offer services providing for the engineering, procurement and construction and subsequent maintenance of a PV solar facility. Additionally the RFP solicits bids for a detailed plan to subscribe customers to the Community Solar Facility. The subscription model offers third parties an opportunity to directly interact with Central Hudson and its customers. New York State, in particular, provides a pivotal policy role because supporting the Central Hudson Community Solar Demonstration Project through appropriate subsidy grants demonstrates its commitment to furthering the REV initiative and its carbon reduction goal, in the most cost efficient manner.

e) Customer Engagement

Central Hudson's Community Solar Demonstration Project offers a significant opportunity to increase customer engagement. Central Hudson has determined that a primary goal for its Community Solar Demonstration Project is to provide customers who are unable to install a customer sited PV solar facility with an opportunity to participate in the competitive solar energy market without installing a rooftop solar facility. Customers may participate in the competitive solar energy market by purchasing a financial equivalent from a facility located in their community. Whether a customer is unable to afford a rooftop PV system, is a renter, has an obstructed rooftop,

or simply does not want to place PV solar panels on their property, they are able subscribe to the Community Solar Demonstration Project.

The subscription based model not only enables customer choice, but is also another mechanism to inform customers about their energy usage. Customers will also have the opportunity to share information among themselves through a virtual community created as part of the Community Solar Demonstration Project. Additionally, by reserving up to five (5%) percent of the solar financial equivalents from the Community Solar Facility to low-income customers at a discounted rate, Central Hudson is encouraging participation in renewable energy to a market segment that is not currently engaged.

f) Market Solutions

Central Hudson has issued a RFP that allows third parties to offer combinations of services from which Central Hudson may choose. This allows Central Hudson to select the most cost effective, technologically advanced, and market efficient combination of providers to construct, maintain and market the Community Solar Facility to subscribers. Central Hudson has received responses to its RFP from parties that propose to perform all phases of the project and some that propose to perform only a small portion of the project.

g) Developing Competitive Markets

There is currently nothing precluding third party service providers from pursuing a Community Solar project. Yet, as previously discussed, there are no Community Solar projects in New York. Under these circumstances, a Community Solar Demonstration Project owned by Central Hudson will help create a competitive market by increasing the number of customers with an opportunity to participate in the competitive solar market, the demand for solar energy and the third party providers available to meet the increased demand. Central Hudson's Community Solar Demonstration Project will test the ability of the competitive solar market to meet the needs of customers and increased demand evidenced by the purchase of subscriptions to the Project.

h) Ensuring Cyber-Security

Because Central Hudson will remain the owner of the Community Solar Demonstration Project and will retain the responsibility to bill customers such that they displace an equal portion of a customer's subscribed solar financial equivalents from their commodity bill, there are no cyber-security issues associated with this project that differ from the issues that Central Hudson faces every day. Central Hudson takes appropriate cyber-security precautions for its systems and maintains cyber-security insurance. To the extent that a third party service provider is selected to market subscriptions to the Community Solar Demonstration Project it will be contractually obligated to take the same precautions to protect customer information as does Central Hudson pursuant to the Commission's Order on Rehearing Granting Petition for Rehearing in Case 07-M-0548 Issued and Effective December 3, 2010. Central Hudson will also require a third party provider to maintain suitable cyber-security insurance.

i) Scalability

Central Hudson's Community Solar Demonstration Project includes the construction and operation of a 1.5 MW to 2.0 MW PV solar facility. Central Hudson will sell solar financial equivalents equivalent to 100 kWh tranches to residential customers. If every customer purchased one tranche the PV solar facility could accommodate approximately 2,263 customers each month. The Community Solar Facility is of a size and scale that is replicable in the market and has the ability to engage a number of customers who are not currently able to participate in the solar energy markets. Central Hudson has also identified other parcels of its land that may be suitable as Community Solar sites.

j) Cost Recovery

Central Hudson designed its proposed Community Solar Demonstration Project investment to be self-funded by the customers that subscribe to purchase energy from the Project. The concept is very simple; if the Community Solar Demonstration Project is fully subscribed it is fully funded, excluding subsidies required to make the project viable in the competitive energy market and to allow participation by low-income customers. In fact, to minimize the financial risk to customers that are not subscribers,

Central Hudson will not construct the PV Solar Facility unless customer subscriptions reach 70% of the expected output. In order to properly and fully account for the project, Central Hudson proposes that the traditional revenue requirement impact of the Project is deferred. This deferral will be offset through time by subscription revenues.

2. Principles

a) Partnerships Between Utilities and Third Party Providers

Central Hudson believes in partnerships with customers, vendors and third party competitive providers. Central Hudson has a history of such partnerships with the most robust solar installation practice of any New York electric distribution utility, the most successful energy efficiency programs in New York, and a successful gas expansion program working through third party providers to implement conversions to natural gas and partnering with customers and municipalities who choose to switch to natural gas. The Community Solar Demonstration Project offers the same opportunities to partner with government, third party providers and customers as does gas expansion.

See Part B(1)(d) of this Report's description of Central Hudson's Community Solar Demonstration Project for further discussion about partnership opportunities.

b) Lessons Learned

Renewable energy, and solar energy in particular, must ultimately compete with traditional sources of energy at market prices and without undue subsidies. Today, solar energy is more expensive than traditional energy sources and therefore, receives substantial subsidies to encourage the development of the competitive solar energy market.[9] Customers that install rooftop solar facilities receive direct grants, tax incentives, and rate subsidies through net metering. Central Hudson's Community Solar Demonstration Project allows all customers to purchase solar financial equivalents, including those that do not: own their home; have property with proper exposure to the sun; or have sufficient income to purchase solar facilities. These facts

[9] Central Hudson, Staff and the Collaborative Participants recognize that many products other than solar energy, including many energy products, receive subsidies. Many products also have externalities that are not included in the price of the product. This Report is not trying to address these issues, which may be considered in the REV proceeding.

allow us to learn a variety of lessons from a Community Solar Demonstration Project owned by Central Hudson.

Lesson's to learn include: (1) what subsidy is necessary to place a utility owned Community Solar Facility on a level playing field with rooftop solar and/or traditional energy such that customers will purchase energy equivalents in the form of solar financial equivalents from the Community Solar Facility; (2) comparison of customer engagement within a subscription based model to other product offerings such as ownership or leasing arrangements of customer-sited solar; (3) gaining a better understanding of customer segments in order to inform future community solar projects and other product offerings such as demand response and energy efficiency; (4) will customers purchase solar energy other than with a net metering rate subsidy; (5) testing the engagement and participation of Low Income customers within a community solar subscription program; (6) how does a large scale solar facility effect power quality and reliability on the interconnected distribution system; (7) what is the effect, effectiveness, reliability and cost of new technologies used in concert with PV solar facilities such as storage and smart inverter technology; and (8) customer interest in a fixed price commodity offering lasting up to twenty-five years.

c) The Division of Economic Value Between Customers, Third Party Providers and The Utility

See Part B(1)(c), (j) of this Report's description of Central Hudson's Community Solar Demonstration Project for discussion about the division of economic value.

d) Competitive Markets and the Need, or Lack of Need, for Utility Ownership of Distributed Generation

From a competitive market perspective customer choice should prevail. Customers should be able to purchase Distributed Energy Resources ("DER") and their energy output from the provider of their choice. The lack of development of the competitive markets has stymied the development of a community solar model that allows low-income customers, renters, and owners of property not suitable for customer-sited solar installation to participate in the solar market makes a utility owned Community Solar Demonstration Project, such as the one proposed herein, appropriate for consideration. Customers deserve choices while being provided reliable service.

Central Hudson's Community Solar Demonstration Project provides an opportunity to learn about the advantages and disadvantages of a utility ownership model in the competitive solar market. See Part B(1)(g) of this Report's description of Central Hudson's Community Solar Demonstration Project for further discussion about the development of the competitive solar market.

e) The Development of the Competitive Markets, Appropriate Regulation to Ensure Safety, Reliability and Consumer Protection

As previously mentioned, there is nothing precluding third party service providers from pursuing a Community Solar project. Because there have been no barriers to entry created by utilities or utility regulation there is no need to propose rules that will help create a competitive market because the opportunity to participate in the competitive market exists today. Additionally, there are no regulatory proposals required to ensure grid safety or reliability or consumer protection in order to implement the Central Hudson Community Solar Demonstration Project as it raises no new safety or reliability issues.

f) Demonstrations Should Inform Pricing and Rate Design

Central Hudson's Community Solar Demonstration Project will provide significant information regarding customer prices available in the competitive solar market and rate design. Customers subscribing to Central Hudson's Community Solar Demonstration Project will be able to purchase the solar financial equivalent of energy in increments of 100 kWh, up to their average monthly usage. Central Hudson will charge customers a fixed price per kWh for each solar financial equivalent purchased and the rate will not change for the period of the purchase agreement.

The fixed price per kWh will include the annual cost of the service on the asset. Components of the fixed price would include: project installation, project material, labor, property taxes, insurance, operation and maintenance, interconnection costs, Central Hudson's cost of capital, environmental and permitting, site security costs, and information technology programming costs.

Once Central Hudson has determined and fixed all of its capital and operating costs, it will be able to develop the revenue needed to support the project. Customers

who subscribe will pay the fixed costs necessary to support the project's revenue requirements. Further, subscribers to Central Hudson's Community Solar Demonstration Project need not pay SBC and RPS charges associated with the amount financial equivalent of energy that they purchase so they will be treated similarly to rooftop solar customers. The Company's cost recovery plan avoids the cost shifting to other customers that occurs through net metering with other solar systems being brought into the market today, but for SBC and RPS.

g) Deployment of Advanced Systems

Central Hudson's Community Solar Demonstration Project presents the opportunity to partner with third party service providers to test the deployment of system technologies, such as battery storage and "smart" inverters, which support awareness, flexibility, efficiency and cost effectiveness. It also presents the opportunity to learn from research and testing of advanced technologies allowing all stakeholders to gain an understanding of the impact that large-scale solar facilities have on the distribution grid, which may help enable a higher future penetration of DER.

h) Diversity of Customers Participating

Today, participation in the competitive solar markets is largely limited to commercial customers and residential homeowners with unobstructed land or rooftops. This is because of the significant up front cost or the necessity of a long term lease to the solar installer. Central Hudson's Community Solar Demonstration Project is available to all customers willing to pay the price per 100 kWh tranche. Whether a customer is low-income, a renter, has an obstructed rooftop, or simply does not want to place PV solar panels on their roof or property, they are eligible to subscribe to the Community Solar Demonstration Project. Customers participating in the Community Solar Demonstration Project will be significantly more diverse than customers participating in the competitive solar market today.

C. Business Case

Central Hudson's Community Solar Demonstration Project presents a unique value proposition for regulators, customers, third party service providers, competitive solar market providers and the utility because it expands the customer base for solar

renewable energy products and places such products on a level playing field with traditional generation sources. The Community Solar Demonstration Project requires an investment from Central Hudson, subscribing customers and government. Costs are recovered from subscribing customers rather than through regulated rate base. Advantages are preserved through increased demand from new customers and a long-term fixed price better able to compete with traditional generation prices. Central Hudson's Community Solar Demonstration Project affords all stakeholders with an opportunity to receive independent verification of the competitive barriers and opportunities for a cost based solar product.

From a regulatory perspective Central Hudson's Community Solar Demonstration Project moves toward cost based solar rates. If solar rates come down due to increased demand and improved technology this means that solar may compete at market prices with traditional generation sources in the competitive generation market. Long-term fixed prices also make solar renewable products more competitive with traditional generation products that have more price volatility due to changes in fuel and production costs. It provides this value because the Community Solar Demonstration Project ensures that subscribers to the facility will pay for the facility's costs allowing the Community Solar Demonstration Project to avoid cost shifting to other customers, which occurs with net-metered solar systems. Subscribers, rather than rate base customers, also provide the utility with a revenue stream to earn a return on its capital investment. The Commission also retains direct regulatory authority over the utility, including the authority to audit costs, set rates, and set reliability and service standards.

From a customer perspective, Central Hudson's Community Solar Demonstration Project provides all customers with the opportunity to participate in the competitive solar market. Thus, renters, low-income customers, and homeowners or small commercial customers with obstructed rooftops will be able to purchase all, or part of their energy supply from a local solar facility.

Further, from a taxpayer's prospective, the Community Solar Demonstration Project achieves carbon reduction utilizing approximately forty percent (40%) less in state and federal subsidies. Central Hudson's Community Solar Demonstration Project

thereby deploys taxpayer money to reduce carbon emissions in a manner more efficient than does rooftop solar installations.

From a third party service provider perspective, Central Hudson's Community Solar Demonstration Project presents an opportunity to jump start the nascent competitive solar market by engaging new customer segments and providing new services to utilities and other Community Solar providers. Those new services include the construction, operation, maintenance and marketing of Community Solar Facilities. The opportunity to provide new competitive services at reasonable margins in response to RFPs for Community Solar Projects should help the development of the competitive solar market. An increased number of customers to serve, and new services to provide, make Central Hudson's Community Solar Project an additional opportunity for third party service providers to participate in the market.

From Central Hudson's perspective its Community Solar Demonstration Project provides another opportunity to engage customers with a service that they desire at a reasonable price. The subscription model proposed by Central Hudson avoids cross subsidization between customers and avoids the insertion of incremental costs into rates. At the same time Central Hudson receives the opportunity to earn the Commission approved return on its investment in the Community Solar Facility from subscribers.

Central Hudson's Community Solar Demonstration Project also provides all stakeholders the opportunity to learn about utility ownership of a Community Solar Facility. It provides an opportunity to learn about customer engagement with the competitive solar market through a new service model with a lower cost profile and without net metering. There are also opportunities to explore the use of new technologies, such as smart inverters and battery storage.

There are some significant challenges that Central Hudson's Community Solar Demonstration Project gives us an opportunity to learn to overcome. Because the cost to construct and maintain solar facilities is higher than it is for traditional generation sources on a per watt basis, Central Hudson's Community Solar Demonstration Project cannot move forward without reasonable direct subsidies. Absent such subsidies it is unlikely that customers will pay the premium necessary to purchase the energy output

of the Community Solar Facility. This is true even though the Community Solar Facility costs significantly less to construct per watt than does a rooftop solar facility. Unfortunately, there are programs in place to provide direct subsidies to support the construction of rooftop solar but there are no programs to provide direct subsidies to support Community Solar Projects.

If Central Hudson's Community Solar Demonstration Project is not fully subscribed but has more than a 70% subscription, Central Hudson's non-participating rate customers will have to pay for some of the costs until the Project is fully subscribed, although the amount of risk assumed by customers is immaterial.

D. Recommendation

Staff should authorize the development and implementation of Central Hudson's Community Solar Demonstration Project because it is consistent with the REV criteria and principles and minimizes costs to rate base customers. The Commission should also direct Staff to work with Central Hudson and NYSERDA to identify and provide sufficient funds to subsidize the Community Solar Demonstration Project to place it on equal footing with rooftop solar facilities.

II. SolarCity Owned Community Solar Demonstration Project

A. Project Description

The SolarCity Community Solar Project shares many design goals and operational details with the company's solar project. For example, both seek to provide a source for solar generation available for Central Hudson customers, and derived from a community-scale solar facility located within Central Hudson's service territory. Both projects will also further the REV goals as recited by the Company. Despite the similarities, however, it is the differences between these two approaches that may be most instructive.

The 2.5 MW AC SolarCity project will be constructed, owned, operated and maintained by SolarCity on land owned by Central Hudson in the vicinity of the Rock Tavern substation, under lease or similar arrangements to be negotiated with Central Hudson. As with the Company's project, customers would be offered kWh energy credits in 100 kWh blocks at a fixed rate for the term of the contract (up to 25 years), and would not be billed under net metering tariffs. Customers in both plans would be exempt from RPS and SBC charges and 5% of the output of each project would be reserved for low income customers.[10]

In addition to ownership issues (utility versus third party investors), the calculation of retail prices will be completely different. In the Company owned project, rates are regulated and are equal to all the costs noted in the Central Hudson description, plus a return on and of its invested capital. In the SolarCity case, rates will be determined by the market and the business risk of the undertaking will be borne by private enterprise. Other differences include project administration and possibly the approach to low income rates. Central Hudson will administer its program, while SolarCity intends to subcontract the day-to-day operations to an ESCO.

[10] SolarCity has proposed to offer service to low-income customers through its Community Solar Demonstration Project. Central Hudson is a partner to SolarCity regarding the Community Solar Demonstration Project because SolarCity's Solar facility will be located on property owned by Central Hudson and Central Hudson will partner with SolarCity to market the facility so that it is fully subscribed. Under these circumstances, and subject to further communication with the Collaborative participants, SolarCiy and Central Hudson recognize the possibility that costs associated with the provision of discounted subscription service to low-income customers may be recovered through the funds set aside through the JP for the revenue requirement effect of Central Hudson's Demonstration Project capital investments and operating costs.

SolarCity, like Central Hudson, will claim the tax benefits of the project and will seek funds from NYSERDA or otherwise. SolarCity does not see a need to seek ratepayer funds to subsidize the retail price with the possible exception of the low-income discount.

In addition, SolarCity and the Company are negotiating a unique contingent purchase power agreement under which Central Hudson would agree to purchase a percentage of the plant's output, but only to the extent the output is not otherwise subscribed. This agreement is an integral part of the proposal, because the existence of a creditworthy customer for a portion of the output (if and when needed) will allow the project to be commercially financed. Few utility purchases under the agreement will be required if the project is successful; and, if sales are required, the purchase price (8 cents/kWh) is expected to be approximately the Company's average supply cost -- and is thereafter guaranteed for 20 years. This provision, therefore, should not increase the cost of supply to any customers, and will lower costs when the unsubscribed generation is on peak.

A further distinguishing factor between these projects is SolarCity's willingness to begin construction without first meeting a preset customer pre-subscription rate.

B. The SolarCity Community Solar Demonstration Project is Consistent with REV Criteria and Principles

Central Hudson has compared its project to all the Commission's criteria and principles (as set forth earlier in this report) and has concluded that its project meets them all. Because the SolarCity project is very similar to the Company's, we agree with the Company's conclusions and believe the same conclusions should be reached regarding SolarCity's proposal for the same reasons set forth in the Company's analysis. Accordingly, we will not repeat that analysis, but will note a few of the Commission's criteria and principles that will be most affected by the SolarCity project, and will further explain how the approval of both projects together will greatly expand the opportunity for learning and testing the markets on a demonstration project basis.

The SolarCity – Central Hudson joint efforts to create a financeable model for SolarCity's project can be viewed as a hybrid between traditional utility capital formation

and free market financing approaches. With capital attraction being a significant utility strength and with substantial capital needs also facing the development of DER resources, the SolarCity project will test whether that utility strength may be leveraged, in cooperation with competitive market providers, to assist in more efficiently developing distributed energy markets.

Approving both projects will also allow a comparison between: a utility-owned distributed generator versus a third-party owned project; traditional cost-based utility pricing versus market pricing; and traditional utility financing versus a competitive financing approach with the utility holding a conditional PPA. In addition, if both projects are approved, it may be possible to determine whether there is sufficient market demand and an economically sustainable business model for providing non-utility owned community solar Distributed Generation ("DG"). The ownership of DER assets by utilities was contested in the REV proceeding, with the result that the existence or non-existence of a competitive market for DER projects might influence whether utilities are allowed or even encouraged to invest in such markets. The two projects here could help provide some critical answers.

The SolarCity project and the Company's cooperation in the development of a financeable project, together with SolarCity's intention to partner with an ESCO for administration, also demonstrates the kind of innovative business plans and joint efforts that can be created between the distribution utilities and DER providers (and among DER providers) while using innovative market-based solutions to foster the REV. Both Central Hudson and SolarCity projects are potentially scalable, and cost recovery under the SolarCity project should not require ratepayer support. Finally, both projects offer the opportunity to expand community solar services and to test a range of future business models.

C. Recommendation

Staff should authorize the development and implementation of SolarCity's Community Solar Demonstration Project in cooperation with Central Hudson because it is consistent with the REV criteria and principles and minimizes costs to rate base customers. It also provides a new revenue stream to Central Hudson in the form of

rents for its property and helps to expand and develop the competitive solar energy market.

III. Central Hudson's Microgrid Project

A. Project Description

Central Hudson's Microgrid Demonstration Project will provide participating customers with the opportunity to make their own energy choices and decide what attributes of a microgrid, including multi-resource optimization of local generation, storage, and loads on a common power control platform, will best fit the needs of these customers as well as deliver value-added service to the community and the distribution system. A microgrid can be designed to achieve one or more objectives, including but not limited to energy cost minimization, environmental benefits, enhanced resiliency, and/or Transmission and Distribution system optimization, in an efficient, cost-effective, and sustainable manner. It is a dynamic energy system that can aggregate, coordinate, and control new and existing resources to operate in various modes when connected to the larger grid, such as frequency regulation, voltage control, Volt/VAR optimization, demand response, or pure economic dispatch, and may also operate in 'island' mode, separate from the larger distribution grid. Central Hudson's Microgrid Demonstration Project intends to improve reliability, enhance resiliency, and deliver economic and environmental benefits to participating customers at a reasonable, agreed upon cost and under a commercial structure that appropriately compensates service providers.

The design, development, and implementation of microgrids that are both reliable and economic will involve complexity and challenges. Central Hudson will enter financial and management partnerships with competitive third party providers to meet the challenges associated with the development of complex multi-customer microgrid projects involving private sector businesses, local communities, and other participating customers. In order to advance its efforts to effectuate Central Hudson's Microgrid Demonstration Project, Central Hudson has partnered with NRG to cooperatively develop a Microgrid Demonstration Project that is consistent with REV policy objectives and provide long-term value to customers. NRG is a Fortune 250 company and one of the nation's largest developers and owners of renewable generation with significant expertise in the design and implementation of sustainable energy solutions and resilient energy systems. NRG has operational microgrids incorporating storage technologies,

and modular integrated control and optimization systems at locations such as Necker Island and the University Medical Center of Princeton at Plainsboro.

Central Hudson has executed a letter of intent with NRG, and several customers to develop Central Hudson's Microgrid Demonstration Project. The project is expected to significantly enhance the operation and resiliency of critical functions for the participating customers. The Microgrid Demonstration Project is also expected to advance innovative energy solutions, including market-based technologies, products, services, and business models. Central Hudson will work together with its partners to conduct a technical and economic feasibility assessment of resilient microgrid options. As currently envisioned, the project will deploy an optimized mix of clean, reliable, resilient, and efficient on-site generation, coupled with energy storage and an integrated control system. Central Hudson, with its partners, will also facilitate and structure a contractual arrangement among the parties whereby the participating customers will enter into a set of agreements, including an energy services agreement, for an agreed upon payment structure to appropriately compensate service providers, including Central Hudson, for designing and implementing a resilient microgrid that meets participating customer needs, delivers value in the form of improved service reliability and added capabilities, and achieves customers' sustainability goals. Objectives shall include promoting the use of clean and renewable energy sources, ensuring the ability to continue critical operations in the event of power outages due to severe weather or other emergency events, and deploying an advanced microgrid control system and software management platform to optimally coordinate resources during normal grid-tied and emergency island modes. The participating customers maintain outage risks associated with disturbances to the microgrid facilities.

Central Hudson's Microgrid Demonstration Project is entirely supported by revenues from participating customers to third party providers and Central Hudson through reasonable and agreed upon cost recovery mechanisms.

B. Central Hudson's Microgrid Project is Consistent with REV Criteria and Principles

1. Criteria

a) Flexibility

Central Hudson's Microgrid Demonstration Project provides flexibility for the parties to evaluate a mix of DER that may include clean renewables, efficient combined heat and power ("CHP"), reliable back-up power solutions, energy storage technologies, and demand-side management solutions from third party competitive service providers. Through extensive consultation and active participation during the development and design process, participating customers will have the opportunity to determine what kinds of energy services they want and what kinds of local generation resources will be most beneficial in order to meet their objectives. participating customers would enjoy a significant degree of flexibility and self-sufficiency as a result of the ability to: (1) meet a high percentage of their energy needs from on-site sources; (2) coordinate resources based on pre-defined operating modes informed by economic factors, local system dynamics, and external factors such as weather and bulk power system loading; (3) optimize real-time energy management and economic dispatch, interactions with the grid including imports/exports and participation in the NYISO marketplace; and (4) seamlessly connect or disconnect from the grid if necessary due to an emergency event. Participating customers can more efficiently and effectively manage their energy consumption and balance local supply and demand.

The flexibility of the control system and software platform will also be a key component of the project and provide a platform to support future development and expansion at the airport and in its immediate vicinity. The microgrid control system will allow the project team to configure, test, and validate each operating strategy, while preserving the flexibility to introduce dynamic switching between operating modes in the field through Demand Response, frequency, voltage, or island mode. The underlying physical models and metering/sensing devices will ensure that the control system will have full visibility and control over every component of the full microgrid system.

There can also be flexibility as to how the legal and commercial agreements governing the rights and obligations of Central Hudson, third party service providers, and participating customers are structured. For example, responsibility for operations and maintenance of the microgrid system and its components could reside with the system/equipment owner, a third-party operator, or the customers depending upon ownership structure and technical expertise. Central Hudson will maintain the interconnection of the microgrid system with the regulated Transmission and Distribution systems.

b) Demonstrating Innovation

Central Hudson and NRG have significant expertise regarding Microgrid facility development. Central Hudson previously developed and operates a Microgrid Facility in its service territory. NRG has extensive experience operating microgrid control technology. Third party vendors bring expertise and innovative technologies to Microgrid Facilities, including innovative microgrid generation and control technology.

Central Hudson's Microgrid Demonstration Project is expected to involve several customers spanning more than fifty buildings. It has generation and control elements that require innovative solutions to provide increased reliability and generating capability at a reasonable price for the participating customers. Central Hudson's expects that its Microgrid Demonstration Project will demonstrate a number of important technical and commercial capabilities that may be applicable to subsequent microgrid projects. These commercial capabilities include: (1) deploying a modular, integrated microgrid control system and software platform to optimally coordinate local resources (conventional and renewable generation, energy storage, and controllable loads) based on real-time stochastic models paired with data-driven forecasting models; (2) optimization of dynamic system and economic parameters in operating modes with various objective functions, including frequency regulation, voltage control, demand response, pure economic dispatch, and islanded; (3) intelligently prioritizing critical and non-critical loads to balance supply and demand on an existing grid network; and (4) leveraging smart inverter capabilities and utilizing battery storage to multi-task as a resource

capable of supporting renewables integration, frequency regulation, voltage control, Volt/VAR optimization, demand response, and reliable back-up power.

In the development process, Central Hudson and NRG will need to work together on innovative design components, engineering solutions, commercial structures, and business models to cost-effectively satisfy the needs of the participating customers. Due to the cost challenges associated with Microgrid Facilities, the mere achievement of a multi-customer Microgrid Facility qualifies as a demonstration of innovation.

c) Value Distribution

Central Hudson's Microgrid Demonstration Project provides Central Hudson value through the potential development of a customer specific revenue stream and partnership with reliability and resiliency experts such as NRG. The partnerships may assist Central Hudson to bring added reliability and resiliency to its regulated customers at a reasonable price. Similarly, NRG may also receive a customer specific revenue stream and the opportunity to learn from Central Hudson's experience and expertise concerning the operation of larger Transmission and Distribution grids. The customer(s) receive value in the form of reliability and resiliency for its critical facilities at an agreed upon price.

In the process of designing the project, Central Hudson and NRG will work together to devise new contract structures to appropriately capture the value being provided by each party and to compensate each party for these value-added services. These efforts should be applicable to future projects both in terms of deal structure and for informing the establishment of the value of products and services that are currently not separately identified, valued, and/or priced.

Central Hudson and NRG, with the assistance of specialized external consultants and advisors as may be reasonably necessary, will model grid-connected resources to optimize economic dispatch and participation in the NYISO marketplace, including grid power imports/exports, reserve management, voltage control, and frequency regulation. From a participating customer perspective, financial benefits may accrue from peak shaving, load shifting or shedding schemes, load following, renewables smoothing, demand response program participation, frequency regulation, and/or voltage control.

Revenue streams may be made available to the project through system and statewide peak shaving programs offered by NYISO or Central Hudson. Where system constraints exist, distribution level demand response may provide additional value streams for microgrid systems and services.

A microgrid may operate reliably to serve customer needs and provide grid support services under normal grid-tied conditions through real-time, dynamic energy management and optimal economic dispatch. In addition, a microgrid can provide improved reliability and enhanced resiliency in the event of power outages due to severe weather or other emergency events by operating in island mode independent from the grid. Loss of power in critical facilities, such as airports, hospitals or water/wastewater treatment plants, can impact basic life sustaining and public health services. Enhanced resilience could result in minimizing the economic impact of power outages, more reliably serving essential customer needs and operations, and protecting critical services/infrastructure. Designing a microgrid to support critical loads for customers with high reliability needs may be a sustainable, cost-effective way to provide disaster resistance and emergency services. Smart circuit delineation, prioritization, and load shedding models can be used to support critical power requirements and enable island-mode operation.

d) Partnerships

Central Hudson is working with NRG and diverse customers to develop its Microgrid Demonstration Project. Central Hudson's Microgrid Demonstration Project represents an innovative partnership between governmental and private sector customers and service providers. All of the participants are fully engaged in the design and development of the Microgrid Facility. Furthermore, the parties are fully committed to providing the resources and support necessary to conduct a technical and economic feasibility assessment of microgrid options and determine an optimal design and business model.

e) Customer Engagement

Central Hudson's Microgrid Demonstration Project is dependent upon active customer engagement. The only purpose of a Microgrid facility is to provide enhanced

reliability and resiliency necessary to support customers' critical facilities, although it may include elements that permit advanced load/demand management and include the deployment of DG. Thus, it is imperative to understand the level of reliability and resiliency required by the customers and the level of financial support the customers are willing and able to contribute. Most customers are satisfied with the level of reliability and resiliency provided by their local utility and are unwilling to pay a premium for enhanced reliability and resiliency. Other customers have individually purchased backup generation and other facilities needed to increase the reliability and resiliency they require for their critical facilities and are unwilling to share their facilities with other customers. A few customers, however, have critical facilities with a need for enhanced reliability and resiliency but are unable to afford the enhancements on their own and require a partnership to achieve their reliability and resiliency goals. These customers are fully engaged so that they can achieve their service quality requirements at a minimal cost.

f) Market Solutions

Today, local utilities provide monopoly Transmission and Distribution service with reliability and resiliency standards that are set in concert with regulators. Nothing prevents a customer with critical needs from purchasing on site generation, redundant feeds, or other reliability and resiliency services, but the cost is significant and opportunities to partner with other customers are limited. As a result customers with critical needs either purchase location specific solutions or campus style Microgrid Facilities. Central Hudson's Microgrid Demonstration Project seeks to demonstrate that there is a market opportunity for Central Hudson and competitive solutions providers to establish public and private partnerships and develop efficient and cost-effective local microgrids that minimize energy costs, integrate clean renewables and other distributed resources, and result in improved reliability/resiliency for customers and the utility.

Central Hudson's Microgrid Demonstration Project will test the demand in the competitive market for a resilient, multi-customer microgrid. It offers customers the ability to partner with each other, their local utility and third party service providers to customize, develop and deploy solutions that may best suit their needs. This Microgrid

Demonstration Project is an attempt at market development. If successful it will help identify supply and demand market opportunities for all stakeholders, including the value streams that can be quantified and captured by the parties, and commercial structures, terms, and standards that may be replicated and used to engage additional customers. Specifically, it is hoped that niche markets for Microgrid facilities development may be identified.

g) Developing Competitive Markets

See Part II(B)(1)(f) of this Report.

h) Ensuring Cyber-Security

Microgrid Facilities support customers' critical infrastructure and operational needs. The installation and implementation of Microgrid Facilities depends, in part, on sophisticated control systems necessary to interact with the utility, the microgrid owner/operator, third party equipment and customer systems while protecting each stakeholder's critical infrastructure and data. Central Hudson's Microgrid Demonstration Project requires the use of reasonable cyber-security technology and appropriate cyber-security insurance to protect the critical data and facilities involved in the Microgrid Demonstration Project.

i) Scalability

Central Hudson's Microgrid Demonstration Project will be designed with industry standard equipment and controls to the extent possible in order to promote ease of scalability and replicability. The project will deploy a flexible and scalable management and control system that should minimize the degree of customization and number of engineering and testing hours. This modular distributed model-based control system will be a key contributor to the project's ability to deliver on the commercial, operational, and technological objectives of reliability, resiliency, cost, and system performance.. The Microgrid Demonstration Project will be replicable and scalable for future Microgrid facilities development to the extent that the facilities and controls required for this project are not unique. Because Microgrid Facilities must be designed to meet the needs of specific customer groups and facilities, Central Hudson expects the need for some customization for each project. The project team, however, will use its best

efforts to build a project design platform that could be used in similar projects throughout New York State and also be replicated in other regions.

j) Cost Recovery

Customers that choose to participate in Central Hudson's Microgrid Demonstration Project will pay for the costs of the Project, including a reasonable return for Central Hudson and its third party partner. Traditional rate base rate of return customers will not pay the costs associated with Microgrid Facilities. In this regard Microgrid Demonstration Projects represent a new revenue stream and market for utilities and competitive service providers.

2. Principles

a) Partnerships Between Utilities and Third Party Providers

See Part II(B)(1)(d) of this Report. Central Hudson's Microgrid Demonstration Project requires partnerships with competitive providers, like NRG and other competitive technology and service providers, and with public and private sector customers. Competitive providers will provide generation and control facilities. Because multiple customers are Project participants cooperative agreements between customers, Central Hudson and competitive service providers may also be required. Public and private sector cooperation also brings new resources and opportunities to the development of Microgrid Facilities.

b) Lessons Learned

Central Hudson's Microgrid Demonstration Project provides the opportunity to learn about customer demand for enhanced reliability and resiliency. The breadth of the market for enhanced reliability and resiliency systems will be tested as well as the price that customers are willing to pay for such services. Central Hudson's Microgrid Demonstration Project will also help test the market for DER, and in particular for DG. This is because the enhanced reliability and resiliency provided by Microgrid Facilities will be used by the participating customer only a small amount of the time. It is likely that customers will seek to monetize their investment during times of non-use through demand response or interruptible service programs. The new business models, contractual arrangements, and cost recovery structures needed for Central Hudson's

Microgrid Demonstration Project will provide valuable lessons that will be applicable to future DER and microgrid projects.

c) The Division of Economic Value Between Customers, Third Party Providers and The Utility

Central Hudson's Microgrid Demonstration Project will be structured as a commercial transaction among the parties, who will negotiate reasonable terms to fairly apportion value between Central Hudson, competitive third party service and facilities providers and participating customers. Participating customers will pay a negotiated market price for desired services that are not otherwise available through standard utility offerings. Central Hudson and third party technology and service providers will be compensated for the value they are providing to participating customers. Although customers pay a premium for Microgrid Facilities they receive premium services in return. Each participating customer must determine whether the price for Microgrid facilities and Services is worth the enhanced reliability and resiliency service they receive.

Competitive providers receive economic value through the price that they charge to customers and the new customer relationships that they form. Competitive Providers also receive value from partnering with the local utility because of the exchange of expertise and customer relationships between the utility and the competitive provider.

Like the Competitive providers, Central Hudson receives economic value through the price it charges to the customer and/or the competitive provider for the services that Central Hudson performs. Central Hudson and its customers also benefit from the exchange of information between Central Hudson, competitive service and facilities providers and participating customers. The information that Central Hudson receives may be used to enhance service for existing regulated customers.

d) Competitive Markets and the Need, or Lack of Need, for Utility Ownership of Distributed Generation

Central Hudson's Microgrid Demonstration Project may facilitate the development of niche DG markets. Such development may occur because Microgrid Facilities Development allows cost sharing among customers with a need for enhanced

service. It also may allow for the development of market-based revenue streams that encourage customers to own DG.

The economics of Microgrid projects are not yet fully known. If, however, competitive microgrid and DER providers become more experienced at project design and deployment and, therefore, able to drive down transaction and other costs, microgrid projects may become economic for an increasing number of customers.

Central Hudson's Microgrid Demonstration Project may also show that even when customers share costs associated with Microgrid Facilities, and DG in particular, that the costs are a barrier to microgrid development and, therefore, require utility investment with cost recovery achieved through the traditional regulatory model. Until the cost of DG is equal or less than the cost of traditional generation it is likely that subsidies, directly or through utility investment, will be required.

e) The Development of the Competitive Markets, Appropriate Regulation to Ensure Safety, Reliability and Consumer Protection

A primary purpose of Central Hudson's Microgrid Demonstration Project is to help develop competitive markets for DER in general and microgrids in particular. Consistent with the overall objectives of REV, these technologies are expected to deliver enhanced system efficiency, reliability and resiliency services. Central Hudson will work with its partners in this Demonstration Project to accomplish this goal to develop new business models based on replicable and sustainable competitive market principles.

No additional consumer protections are required as Central Hudson, NRG and the other parties are all large entities accustomed to negotiating commercial terms. Some of the competitive providers are also subject to Commission regulation. To the extent that the Commission does not regulate a competitive provider it is no different than any other contractor relationship with the utility or customer. Central Hudson will use reasonable business practices to ensure that it requires its competitive partners to adhere to ethical business practices with customers. No other protections are necessary.

No additional safety or reliability measures are required from the Commission as part of Central Hudson's Microgrid Demonstration Project because enhanced safety and reliability are among the services that the project will be designed to deliver to customers. Because customers purchasing Microgrid facilities and services will receive superior service quality to that otherwise required by the Commission no additional service quality measures are necessary.

f) Demonstrations Should Inform Pricing and Rate Design

Central Hudson's Microgrid Demonstration Project requires the design of customized Microgrid Facilities for participating customers to provide them with enhanced services at negotiated prices. Pricing and Rate Design, like the Microgrid Facilities themselves, will be customized to meet the customers' needs. Pricing may take the form of time of use, critical peak pricing, fixed prices, or other mechanisms that the customers may request. Central Hudson's Microgrid Demonstration Project will help inform the Commission and the parties about customer preferences for different types of pricing structures and services.

g) Deployment of Advanced Systems

Microgrid Projects provide enhanced facilities and services to participating customers necessary to protect the customers' critical facilities and operations. As a result, Microgrid Projects employ advanced systems. These advanced systems include, but are not limited to, distributed renewable and conventional generation sources, electric and/or thermal energy storage, integrated and automated control technology, interconnection facilities and billing systems. The exact systems used for Central Hudson's Microgrid Demonstration Project will be determined through analysis of the participating customers' needs and their ability to fund the Microgrid facilities and Services.

h) Diversity of Customers Participating

Central Hudson's Microgrid Demonstration Project includes several public sector customers as well as private sector businesses. The project will engage all of these customers to ensure that all customer objectives are identified and addressed in the design and operation of the project. Future expansion of the project could include

additional business as well as pairing customers from different rate classes together to share the costs associated with the provision of enhanced reliability and resiliency services. As a result Microgrid Projects are open to all customers, although a large commercial or industrial customer with the need to protect critical infrastructure is likely to be involved. All participating customers must pay a share of the Project costs and must also benefit from the system enhancements.

C. Business Case

Central Hudson's Microgrid Demonstration Project presents a unique value proposition for regulators, customers, third party service providers, competitive market providers and the utility because it offers the opportunity to implement significant microgrid configuration with DER resources. This environment creates a valuable platform for all of the parties to work together with State and federal government agencies to demonstrate not only the technology that can improve the cost-effectiveness and resiliency of critical infrastructure, but also the business structures that can make such technologies commercially viable and sustainable.

Central Hudson's Microgrid Demonstration Project creates a Microgrid market that does not currently exist and expands the DG market. The Microgrid Demonstration Project requires an investment from participating customers. Returns are achieved from participating customers rather than through regulated customers. Central Hudson's Microgrid Demonstration Project requires that participating customers invest in additional DER and associated infrastructure. Those investments will be evaluated by the customers according to their standard business protocols, and therefore must provide value in order for the customer to move forward. Central Hudson's Microgrid Demonstration Project affords all stakeholders with an opportunity to receive independent verification of the competitive barriers and opportunities regarding the market for Microgrid Facilities and Services.

From a regulatory perspective Central Hudson's Microgrid Demonstration Project allows customers to receive market services at negotiated rates. Prices for Microgrid Projects will always exceed the price for traditional regulated utility service because, by definition, the customer is receiving an enhanced premium service. Microgrid Projects

provide value to participating customers because the Microgrid Project ensures that participating customers pay for the services that they need at negotiated prices. There is no subsidy between participating customers and regulated rate base customers. Participating customers, rather than rate base customers, also provide the utility and third party providers with a revenue stream to recover their costs and earn a reasonable return. The Commission also retains direct regulatory authority over the utility, including the authority to audit costs and set rates.

From a customer perspective, Central Hudson's Microgrid Demonstration Project provides all customers with the opportunity to participate in a Microgrid Project if they need enhanced reliability and resiliency services and are willing to pay for such services. Thus, governmental customers, private sector commercial and industrial customers and residential customers may all partner with each other to form a Microgrid.

From a third party service provider perspective, Central Hudson's Microgrid Demonstration Project presents an opportunity to form and understand the need for a competitive Microgrid market by engaging new customer segments and providing new services to utilities. Those new services include the construction, operation and marketing of Microgrid facilities. New services may also include demand response services representing DG facilities that become a central part of Microgrid facilities. The opportunity to provide new competitive services at reasonable margins in response to customer demand for Microgrid Projects should help the development of the competitive Microgrid market. Identification of customers in need of Microgrid Projects, and new services to provide, make Central Hudson's Microgrid Project an additional opportunity for third party service providers to offer competitive market services.

From Central Hudson's perspective its Microgrid Demonstration Project provides another opportunity to engage customers with a service that they desire at a reasonable price. The Microgrid model proposed by Central Hudson wherein participating customers pay for the Microgrid facilities and services avoids cross subsidization between customers and avoids the insertion of incremental costs into rates. At the

same time Central Hudson receives the opportunity to earn a reasonable return from participating customers associated with its provision of Microgrid facilities and services.

There are some significant challenges that Central Hudson's Microgrid Demonstration Project presents. DER and microgrid technologies are well understood but are not yet in common use so there is a challenge to design and integrate these systems across multiple customer facilities within the microgrid. Cost controls of microgrid technologies and DER will be necessary to ensure that customers derive net benefits from the microgrid and that providers are fairly compensated for the services and facilities they provide. The REV proceeding, and the 'rules of the road' for DERs and microgrids, will continue to evolve as Central Hudson's Microgrid Demonstration Project is developed, providing a challenge with respect to meeting regulatory requirements. However, the parties are confident that these challenges can be successfully identified and addressed as the project is developed and implemented.

Because the cost to construct and maintain Microgrid Facilities is high, participating customers will pay a premium price for utility service. We do not know whether participating customers will pay the premium necessary to purchase the Microgrid Facilities and Services. If customers are unwilling to participate—there is insufficient demand—the Microgrid market may fail to develop. Further, Central Hudson does not believe that it is appropriate to recover feasibility study costs for the Microgrid Demonstration Project from non-participating customers. Thus, Central Hudson will submit the Microgrid Demonstration Project to New York Prize to recover feasibility costs. Failure to receive feasibility study funding from New York Prize for the Microgrid Demonstration Project may jeopardize the Project.

D. Recommendation

Staff should authorize the development and evaluation of Central Hudson's Microgrid Demonstration Project because it is consistent with the REV criteria and principles and avoids cost assignment to rate base customers.

IV. Central Hudson Demand Response Demonstration Project

A. Project Description

Central Hudson's Demand Response Demonstration Project affords regulated utility customers an opportunity to avoid costs associated with Transmission and Distribution infrastructure investment in three designated locations within Central Hudson's service territory. This demonstration project will promote residential and commercial customer aggregation in three targeted portions of Central Hudson's service territory. Central Hudson has established the targeted areas of its service territory based on identified distribution circuits, substations, and transmission regions where Central Hudson anticipates the need for load growth-related infrastructure projects generally estimated to occur in the next four to ten years. With a successful demand response management program these investments may be deferred or eliminated. Central Hudson's Demand Response Demonstration Project should be evaluated on the portfolio level because demand response providers must use minimum program target thresholds to be able to implement a cost effective and feasible program.

Central Hudson's Demand Response Demonstration Project provides customers located in targeted growth areas of Central Hudson's service territory payment for demand response they are willing to provide. Similarly, the Demand Response Demonstration Project affords competitive demand response implementers to receive a return on the service that they provide through the aggregation and control of demand response load.

Central Hudson will proceed with the Demand Response Demonstration Project if the Net Present Value ("NPV") of the avoided infrastructure investment costs is greater than the present value of the payments to demand response aggregators.

Central Hudson submitted a RFP on October 13, 2014 and received eight bids to its request on November 14, 2014. Subsequently, Central Hudson hired Nexant to perform an independent verification of the avoided investment costs compared to the demand response costs pursuant to the bids received by Central Hudson.

B. Central Hudson's Community Demand Response Demonstration Project is Consistent with REV Criteria and Principles

1. Criteria

a) Flexibility

Central Hudson's Demand Response Demonstration Project provides Central Hudson with flexibility to investigate an alternative to capital investment in its Transmission and Distribution systems. The Demand Response Demonstration Project also provides flexibility for aggregators and providers by introducing a new revenue stream, payment to the demand response providers, into the competitive demand response market. If the Demand Response Demonstration Project successfully defers the use of new transmission and distribution capital, it could be expanded into other areas targeted for load growth within the service territory.

b) Demonstrating Innovation

Central Hudson's Demand response Demonstration Project demonstrates innovative technology including, but not limited to, two way communications, real time operation of dynamic load, behind the meter battery storage, and other advanced distribution system components. Central Hudson issued a RFP to locate the most cost effective and feasible solutions so that it could maximize avoided costs for its customers. It received numerous responses from bidders. As a part of the bid evaluation process, the potential vendors were asked to describe their Demand Response Management Systems ("DRMS"). Specific functional requirements requested were:

1. Direct Load Control
2. DER Power Control
3. DER Power Factor Control
4. Automated islanding and reconnection
5. Algorithms and analytics for Customer/DER/Microgrid control and optimization

Central Hudson will initiate when a demand response event must be called. Generally, Central Hudson expects to declare a demand response events from May 1st to September 30th when the Company's forecasted load level is at least 94% of the forecasted summer system-wide peak. Central Hudson will also initiate "test" events in order to keep the participating customers engaged and ensure required participation levels are reached. The vendor will use the DRMS to control the system. Direct load control of equipment, including thermostats, air-conditioning and other equipment, will be a component of the Demand Response Demonstration Project, with the vendor required to receive confirmation of the execution of demand response from each customer.

Demand response requires a significant investment by Central Hudson and aggregators. The interaction between Central Hudson and aggregators requires sophisticated and innovative communications technology to ensure that the required energy or energy savings meets Central Hudson's system needs. Central Hudson's Demand Response Demonstration Project will permit the Commission to evaluate innovative demand response technology at the Distribution system level as well as the communications between Central Hudson and Demand Response providers.

c) Value Distribution

The value of Central Hudson's Demand Response Demonstration Project to Central Hudson and customers is the difference between the cost to run the demand response management program plus the reduction in Unforced Capacity ("UCAP") over the applicable years measured as a net present value ("NPV") compared to the NPV of the cost of completing a growth-related project in the year planned. Central Hudson may maintain a portion of the identified value as an incentive. In addition, the data gathered on the application of this program, particularly in testing innovative solutions, may have a value to third parties. Central Hudson, in the future, may be able to monetize that value by selling the data to third parties.

Third parties in the competitive demand response market will receive value through payments associated with their aggregation and control of demand response load. Several third party aggregators may participate in Central Hudson's Demand

response Demonstration Project and test customer engagement, response and receptivity to new technology, such as customer sited storage. As a result, this Project will provide valuable data concerning the ability of various technologies to deliver energy or energy use reductions, and customer engagement. Customer engagement will be important to test because customers must deliver the required load reduction in a reliable manner in order to produce value for regulated customers and for aggregators.

d) Partnerships

A third party demand response aggregator(s) will partner with Central Hudson to implement Central Hudson's Demand Response Demonstration Project as a turn-key program, but Central Hudson will incur costs to implement the Project. Central Hudson will work with the aggregator(s) to curtail peak usage by utilizing diverse solutions to maximize value for customers.

Central Hudson's RFP did not prescribe a specific demand response solution, but specified only an objective to defer or eliminate the need for load growth-related projects through a successful demand response management program. Central Hudson did specify the criteria necessary to evaluate the Demand Response Demonstration Project's success. This allowed aggregators to propose value driven and reliable solutions. Solutions proposed by aggregators included traditional load control programs and innovative solutions such as leveraging current and future solar installations with battery storage and non-critical load shedding.

Central Hudson hired an independent third party evaluator to determine a suite of solutions that optimizes the value of Central Hudson's Demand response Demonstration Project, including but not limited to measurement of reliability, innovation, and cost effectiveness.

e) Customer Engagement

Central Hudson's Demand Response Demonstration Project includes targeted marketing to all customer classes, including residential, commercial, and industrial. The adopted demand response solutions will include opportunities for all customer classifications. Demand response aggregators have proposed marketing strategies designed to engage customers including door-to-door campaigns, outbound calling and

mailing. Central Hudson will partner with the aggregator(s) to provide support for its brand and community relationships as appropriate. One potential aggregator has experience attending town planning board meetings, which may help develop community engagement. Some customers may opt to participate because they are motivated by the opportunity to lower their utility bill or improve the environment. There may also be a large segment of early technology adopters. They may be engaged through the opportunity to adopt technologies such as mobile apps, which, for instance, allow them to control their thermostats or water heaters. For participating customers, there may be an opportunity to bundle the Demand Response Demonstration Project offer with other program offerings from Central Hudson, such as the Behind the Meter Services Demonstration Project services. Customers participating in demand reduction may also benefit from the products and services offered through a smart meter application or through energy efficiency programs offered by Central Hudson.

f) Market Solutions

Central Hudson's Demand Response Demonstration Project tests the ability to develop locational based markets. Central Hudson's utility branded Demand Response Demonstration Project is designed to create awareness among customers of NYISO-based programs because many demand response aggregators dual-market the additional revenue streams. If customers participate in the Demand response Demonstration Project, aggregators will recruit them for other demand response programs to increase available resources and lower costs.

Central Hudson's Demand Response Demonstration Project also tests the ability of aggregators to market other products and services to customers while preserving customers' confidential information. In addition, the Demonstration Project tests the ability to achieve high DER penetration and balance market risk with value. The appropriate market based demand response solution may include a base of traditional demand response resources combined with innovative demand response concepts such as battery storage.

g) Developing Competitive Markets

The development of competitive markets is an ancillary benefit of Central Hudson's Demand Response Demonstration Project. With a cost effective demand response solution to avoid construction and materials costs Central Hudson will participate in the competitive demand response markets. The competitive markets depend on the penetration of demand response solutions such as DER and load control equipment. In order to assure that the demand response markets build and maintain an adequate supply of demand response solutions, aggregators must pay customers to invest in available solutions. Payments from aggregators to demand response providers—customers—provides an incentive for providers to invest in unique and widely adopted solutions. This investment allows for market based DER and load control penetration, which allows for the development of innovative market based demand response solutions as demand response providers look for new ways to recoup their investment.

h) Ensuring Cyber-Security

Demand response facilities connect the customer to demand response aggregators and Central Hudson. Central Hudson and aggregators collect confidential customer information necessary to effectuate demand response solutions. Central Hudson's Demand Response Demonstration Project requires the use of reasonable cyber-security technology and appropriate cyber-security insurance to protect the customers' confidential information.

i) Scalability

Central Hudson's Demand Response Demonstration Project depends upon the penetration of demand response solutions incented by the aggregators in load growth areas of Central Hudson's service territory. Demand response solutions may include solar installations, storage technology, DG installations, direct load control programs, and other similar programs. All of these technologies and programs can be produced on a large industrial or commercial scale or on a small residential scale. All customers can participate in Central Hudson's Demand Response Demonstration Project. In the

future, if there are other areas in Central Hudson's service territory that have capacity issues, this program can easily be adapted to those areas.

j) Cost Recovery

Cost recovery for Central Hudson's Demand Response Demonstration Project is through a surcharge with appropriate deferral authority and savings sharing. Specifically, Central Hudson will recover the costs associated with implementation of the Demand Response Demonstration Project, including the cost of competitive third party demand response providers through a surcharge coupled with deferral authority to account for delayed recovery due to capitalization. Central Hudson will share fifty percent of the savings with customers and retain the other fifty percent of Net Present Value ("NPV") of the savings as a reasonable incentive for implementing the demand response solution to load growth and forgoing the capital investment associated with a transmission and distribution systems solution to load growth.

2. Principles

a) Partnerships Between Utilities and Third Party Providers

See Part III(B)(1)(d) of this Report. Central Hudson's Demand Response Demonstration Project is a true partnership between Central Hudson and demand response aggregators to provide customers with safe, reliable and lower cost service than they could otherwise achieve.

b) Lessons Learned

Central Hudson's Demand Response Demonstration Project allows the Commission to learn how customers will engage and respond to locational based incentives at the distribution level. For the Demonstration Project to succeed at Central Hudson's load growth locations, there must be economic value of deferring Transmission, Substation, and/or Distribution capital investment. The Demand Response Demonstration Project will test the economic value of demand response projects to understand our ability to defer future capital investments for the benefit of customers.

Central Hudson's Demand Response Demonstration Project may also test the effectiveness of new technologies such as battery storage to act as demand response solutions.

c) The Division of Economic Value Between Customers, Third Party Providers and The Utility

Central Hudson will share fifty percent (50%) of the NPV of the savings with customers and retain the other fifty percent (50%) of savings as a reasonable incentive for implementing the demand response solution to load growth and forgoing the capital investment associated with a transmission and distribution solution to load growth. Third party providers, the demand response aggregators, will receive payment from Central Hudson for providing demand response solutions. Participating customers will receive payment from demand response aggregators for providing demand response solutions. Customers will also receive the benefits associated with the avoided costs of investing in the Transmission and Distribution system. This is truly a win, win scenario for all stakeholders.

d) Competitive Markets and the Need, or Lack of Need, for Utility Ownership of Distributed Generation

Central Hudson's Demand Response Demonstration Project provides demand response aggregators with an opportunity to deliver demand response solutions and stimulate the DG competitive markets. If demand response aggregators cannot deliver their proposed solutions and/or stimulate the DG competitive markets, demand response solutions would permit Central Hudson to provide safe and reliable service to customers at lower prices it may be appropriate for Central Hudson to invest in and own DG.

e) The Development of the Competitive Markets, Appropriate Regulation to Ensure Safety, Reliability and Consumer Protection

Central Hudson's Demand Response Demonstration Project does not require additional regulation to ensure safety, reliability and consumer protection because this Demonstration Project does not change the regulatory construct or how the competitive markets work today. This Demand Response Demonstration Project does enhance the

development of competitive markets through the transfer of revenues from regulated services to the demand response competitive market.

f) Demonstrations Should Inform Pricing and Rate Design

Central Hudson's Demand Response Demonstration Project informs pricing and rate design in unique ways. The Demonstration Project informs pricing in the competitive demand response market because the increase in demand response solutions in the growth areas of Central Hudson's service territory can be measured through the data collected as part of the Demonstration Project. Additionally, the Demand Response Demonstration project is an example of a location derived value stream that will accrue to DER owners or providers based on the sited location of the DER and the system benefits provided.

Similarly, Central Hudson can measure the avoided costs and associated rate effect yielded from the Demand Response Demonstration Project. Staff can verify the rate effect in future rate cases.

g) Deployment of Advanced Systems

Central Hudson's Demand Response Demonstration Project will depend in large measure on the deployment of advanced demand response solutions. From battery storage devices installed at residences to direct load control equipment, Central Hudson expects aggregators to deploy known and yet to be discovered demand response solutions necessary to achieve required system MW targets and provide customer savings.

h) Diversity of Customers Participating

Central Hudson's Demand response Demonstration Project is available to all customers, industrial, commercial and residential. There is complete diversity of customers as long as they are located in one of the targeted growth areas of Central Hudson's service territory.

C. Business Case

The business case for Central Hudson's Demand Response Demonstration Project is straight forward. Central Hudson will only proceed with the Demonstration Project if the avoided costs for customers exceed the costs of the demand response

solutions on a portfolio level. Thus, customers are provided with concrete benefits associated with the Demand Response Demonstration Project.

Additionally, the Demand response Demonstration Project is designed to stimulate the competitive demand response solutions market. The Project stimulates the competitive demand response solutions market by investing revenue that otherwise would have gone into Transmission and/or Distribution system development into the competitive demand response solutions market.

D. Recommendation

Staff should authorize the development and implementation of Central Hudson's Demand Response Demonstration Project because it is consistent with the REV criteria and principles. The Demand Response Demonstration Project allows rate base customers to avoid costs and demand response providers to receive a revenue stream. The new revenue stream to demand response providers helps to stimulate the competitive DER market.

V. Central Hudson Behind the Meter Services Demonstration Project

A. Project Description

The Behind the Meter Services Demonstration Project will provide an opportunity for competitive third parties to sell products and services to customers by utilizing smart electric meters that will collect interval data and provide a customer interface in order to view the data. Central Hudson will use a development platform that will enable competitive third parties to actively engage Central Hudson's customers. Competitive third parties, armed with infrastructure and data not previously available, will have the information and tools necessary to expand upon or introduce new service offerings for customers.

Central Hudson may form partnerships with competitive third parties to develop new business opportunities based upon the utility information and customer engagement platform to allow third parties to offer products and services to customers through the use of interval data. The Behind the Meter Services Demonstration Project allows competitive third parties to access the customer's interval information, which removes the data barrier that competitive third parties had expressed in the REV Customer Engagement Panel is necessary for them to provide customized services and products.

Central Hudson issued an RFP for the behind the meter services on March 28, 2015. The RFP was divided into three sections: Section 1 sought suppliers of meters, a meter data management system, meter head-end software, and a communications interface; Section 2 sought a customer web interface for products and services from Central Hudson or competitive third party providers; Section 3 sought to survey third party providers to determine their requirements and details for customer service offerings. The intent of Section 3 was to ensure that Central Hudson designs its infrastructure and front end standard portal in a way that encourages third party service providers to engage customers within its service territory.

Central Hudson mailed the RFP to 65 ESCOs and 13 meter and web portal vendors. Only three ESCOs responded to Section 3 of the RFP. The company

received a total of nine responses to Section 2 of the RFP. Four vendors responded to Section 1 of the RFP.

Central Hudson's Behind the Meter Services Demonstration Project allows customers and third parties to leverage the utility platform and establish new products and services within the service territory. Central Hudson proposes, through the Behind the Meter Services Demonstration Project, to demonstrate the viability of behind the meter services by allowing 1000 customers the option to explore product and services at no cost for a period of six months. Customers can decide during the six-month introductory period whether data based products and services offered through the smart meter offer sufficient value to incent the customer to pay for services on a going-forward basis. During this trial period Central Hudson will pay for the smart meter from the "incremental revenue requirement effect, net of revenues of the Company's share of Reforming the Energy Vision ("REV") Demonstration Project capital expenditures up to $10 million including recovery of related operations and maintenance costs associated with any REV Demonstration Project," agreed upon at page 22 of the JP. Post-trial period, the incremental cost of a smart meter will be incorporated in the cost of product offerings by leveraging third party provider capital.

Through the Behind the Meter Services Demonstration Project, Central Hudson is positioning itself as a solution services provider by leveraging the utility infrastructure and platform. The Behind the Meter Services Demonstration Projects offers the potential to develop new revenue sources for Central Hudson, including but not limited to the provision of services such as: billing; data and analytics; and enhanced and personalized energy consulting utilizing the advanced data granularity and analytics that will be available to Central Hudson through this demonstration project. Central Hudson and competitive third party providers could expand services beyond Central Hudson's service territory and/or bundle services with other utility meters such as gas, water, oil and propane. Central Hudson will also work with competitive third party providers to maximize their ability to leverage Central Hudson's platform to successfully sell their products and services to customers.

Customers choosing to participate in Central Hudson's Behind the Meter Services Demonstration Project may receive free of charge a smart meter with a basic level of service provided through a web interface for a six month period. During that six month period, third party vendors may also market their products and services to customers.

The customers that choose to participate in the Behind the Meter Services Demonstration Project and have a smart meter will pay for the smart meter after the conclusion of the six month trial period. Thus, the Demonstration Project will be self-funded and customers with traditional meters will not subsidize customers with smart meters after the initial six month trial period. This program allows Central Hudson to act as the Distribution Platform Provider ("DSP") envisioned by REV. Ultimately, it will be up to the market to provide the content that attracts customers to purchase products and services through the information provided by a smart meter.

B. Central Hudson's Behind the Meter Services Demonstration Project is Consistent with REV Criteria and Principles

1. Criteria

a) Flexibility

Central Hudson's Behind the Meter Services Demonstration Project allows up to 1000 customers complete flexibility to choose their products and services that they want to receive based upon the information received as part of the smart meter. It also provides Central Hudson with the flexibility to avoid a system wide roll out of smart meters and the associated costs. Central Hudson's Behind the Meter Services Demonstration Project also allows competitive third party providers the flexibility to offer the services that they believe will appeal to customers and earn the greatest returns, including but not limited to time-sensitive rate structures and advanced technologies.

b) Demonstrating Innovation

Central Hudson's Behind the Meter Services Demonstration Project will test several innovative concepts. First, it will test whether the competitive third party market will develop products and services using the smart meter as a platform to provide sufficient value for customers. Second, the Demonstration Project will test the ability to

distribute smart meters by incorporating their costs through product and service offerings. Third, the Central Hudson Behind the Meter Services Demonstration Project will test whether Central Hudson can develop new revenues streams through its position as DSP, which will leverage utility infrastructure to offer solutions to competitive third party providers.

c) Value Distribution

Central Hudson may create a new revenue stream by charging a fee to competitive third party providers for data collected from smart meters, billing customers for third party products and services, or for web hosting third party information. Central Hudson may also gain additional value by utilizing the customer interface to display data from other types of utilities such as natural gas, water, oil, or propane. This "whole house" view could also deliver economic value to customers.

Competitive third party providers have the opportunity to gain economic value by utilizing the data and smart meter technology to provide services in the competitive market. Through the use of the provided data and services, Central Hudson customers receive service choices and the ability to better manage their energy consumption to become more energy efficient.

Central Hudson's Behind the Meter Services Demonstration Project allows participants the ability to pay for services that are of value to them. Participating customers will choose the products and services they utilize from third parties and costs for the smart meter will be borne by customers and competitive third party providers.

d) Partnerships

Central Hudson's Behind the Meter Services Demonstration Project allows Central Hudson to partner with competitive third party providers by giving them a platform from which they can collect data and develop competitive services and alternative rate design strategies for customers. Further, partnerships between customers and competitive third party providers may develop if the competitive market provides incentives for customer to choose to install smart meters in order to collect interval data. For instance, partnerships may be developed with companies performing demand response within the territory or companies seeking to provide energy efficiency

services such as behavioral home energy reports through the use of a customer web interface.

The platform that Central Hudson will develop as a part of this project will enable competitive third party providers to actively engage customers within Central Hudson's territory. With the availability of infrastructure and data, third parties will have the information and tools necessary to expand upon or introduce new service offerings that were not possible before. Third parties could also incorporate the additional cost of the smart meter into their service offerings.

e) Customer Engagement

The Behind the Meter Services Demonstration Project allows customers to opt-in to receive a smart meter and customer interface. The customer interface will utilize the data collected from the customer's smart meter and provide energy saving tips, insight into usage trends and access to a virtual community. Central Hudson will also utilize gaming tools to enhance the customer experience and motivate customers to take a more active role in managing their energy usage through the use of mechanisms such as digital medals or points systems.

In order to better manage their energy consumption, the customer will also be able to set energy consumption goals and will be alerted when they are nearing their goal or if their daily usage is abnormally higher than their average usage. By providing customers with access to more granular energy consumption data and empowering them to take actions based on the data, Central Hudson can measure which options motivate customers to be more energy efficient. Although the customer interface is capable of analyzing data from residential, commercial, and industrial customers, the Behind the Meter Services Demonstration Project is primarily targeted at residential and small commercial customers because large commercial and industrial customers already have energy monitoring systems and access to more granular energy usage data.

The availability of data, uses for the data, choices to receive a smart meter, choices to receive alternative time-sensitive rate designs, the ability to engage through a virtual community, and competitive third party providers building services able to run

off of the smart meter and the data gathered through the smart meter mean that customers will be fully engaged in the Behind the Meter Services Demonstration Project.

f) Market Solutions

The Behind the Meter Services demonstration project gives competitive third party providers the opportunity to utilize meter interval data to create different rate structures and energy related services for customers. These opportunities allow for the potential development of a competitive market. The competitive market may develop directly between competitive third party providers and customers or between the competitive third party providers and Central Hudson. The additional data provided from the meter, and the information portal created by Central Hudson, allow competitive third party providers to develop and offer value-added services that help customers manage their energy use.

It may be possible for third parties to aggregate the consumption from smart meter customers based on their specific load shapes and implement a demand response program or alternate rate structure to shift load so that less energy would need to be purchased on the wholesale market.

g) Developing Competitive Markets

See Part IV(B)(1)(f) of this Report. Central Hudson's Behind the Meter Services Demonstration Project affords competitive third party providers the opportunity to design and develop competitive markets through business to business interaction with Central Hudson or directly with customers.

h) Ensuring Cyber-Security

Central Hudson's Behind the Meter Services Demonstration Project generates confidential customer specific data. Central Hudson, competitive third party providers and the customer must be able to use the data to manage energy usage and develop competitive markets, but must also be able to protect the data. Central Hudson's Behind the Meter Services Demonstration Project will require competitive third party providers to use reasonable cyber-security technology and maintain appropriate cyber-security insurance to protect the customers' confidential information.

i) Scalability

Central Hudson's Behind the Meter Services Demonstration Project may be scaled to include the entire Central Hudson service territory through the installation of smart meters and increasing the number of customer accounts within the customer interface. As more customers become engaged in the program the opportunities grow for competitive third party providers to increase the services they offer.

j) Cost Recovery

Customers that decide to participate in Central Hudson's Behind the Meter Services Demonstration Project will pay for the smart meters and the services they receive from competitive third party providers except for the six month trial period. In order to properly and fully account for the project, Central Hudson proposes that the traditional revenue requirement impact of the Project is deferred. This deferral is expected to be offset through time by the revenues received by the customers and third parties that decide to participate in the project

2. Principles

a) Partnerships Between Utilities and Third Party Providers

See part IV(B)(1)(d) of this Report. Central Hudson has issued an RFP to solicit opportunities to partner with competitive third party providers to offer behind the meter services to customers.

b) Lessons Learned

Central Hudson's Behind the Meter Services Demonstration Project will test: (1) New business models; (2) Customer participation across various service offerings at differing cost of service levels; (3) Customer engagement based on different channels of communication including web portal, mobile app., and in home display; and (4) Whether there is customer demand for smart meters and whether competitive third party providers can offer services based on customer data and smart meter capabilities that customers demand. In addition, this project may identify alternative rate design strategies and technical/communication opportunities necessary for residential and small commercial customers to respond to prices and reduce peak demand. This

project may also identify the primary issues facing residential and small commercial customers to engage in behind the meter services.

c) The Division of Economic Value Between Customers, Third Party Providers and The Utility

The granular data gained from smart meters will allow Central Hudson, competitive third parties and customers better insight regarding the market elements necessary to provide economic value for all parties. Competitive third parties will have the opportunity to gain economic value by utilizing consumer data to provide competitive market services. Customers, on the other hand, will have increased service choices and the ability to efficiently manage their energy consumption.

The utility platform provided by Central Hudson's Behind the Meter Services Demonstration Project creates new sources of revenue streams for third parties and the Central Hudson. Central Hudson may collect subscription fees from third parties for providing metering data or utilizing the metering infrastructure. The Behind the Meter Services Demonstration Project allows participants the ability to pay for services that they value. The cost of the project will be funded by participating competitive third parties and customers and not by the entire customer base except for the six-month trial period.

d) Competitive Markets and the Need, or Lack of Need, for Utility Ownership of Distributed Generation

Central Hudson's Behind the Meter Services Demonstration Project will test whether customers have a market demand for products and services offered as result of more granular data available from smart meters.

e) The Development of the Competitive Markets, Appropriate Regulation to Ensure Safety, Reliability and Consumer Protection

Central Hudson's Behind the Meter Services Demonstration Project provides an opportunity for competitive third party providers to develop the competitive behind the meter services market. Nothing about this market, however, is different than current markets and no new consumer protections are required. The Commission retains

consumer protection jurisdiction over utilities and market providers such as Energy Service Companies (“ESCO”).

f) Demonstrations Should Inform Pricing and Rate Design

The interval data collected from the smart meter will allow Central Hudson or competitive third party providers to offer alternate rate structures associated with the increased level of customer usage information. Central Hudson’s Behind the Meter Services Demonstration Project customer portal may also present the customer with insight into what may be the most cost beneficial rate structure through rate calculator tools that analyze the customer’s usage history and trends. Rate structures offered by competitive third party providers may provide customers with an opportunity to select from a range of alternative rate design options, as smart meters. The competitive third party market may offer customers alternative rate design programs that may test whether and to what degree such rate designs reduce peak load by evaluating customer response to several combinations of time-sensitive rate designs, communication tools and enabling technologies targeted towards residential and small commercial customers.

Alternate rate structures combined with more granular consumption data may also allow better use of demand response tools such as load control devices, programmable thermostats, and other various web enabled devices. These devices will allow the customer to better manage their energy consumption and maximize cost savings based on the customer’s rate structure.

g) Deployment of Advanced Systems

Central Hudson’s Behind the Meter Services Demonstration Project will deploy two way communications systems between Central Hudson and the meter. The use of other advanced distribution system components is unknown at this time due to the opt-in nature of the demonstration project. The ability to monitor voltage and outage notification may only be at the customer level and not at the circuit level until enough customers on the same circuit opt-in to receiving a smart meter. Through the use of two way communications with the meter other services may also be available.

The infrastructure put in place will enhance our capability to provide advanced distribution system control and planning. We will purposely choose equipment that will build toward our future.

h) Diversity of Customers Participating

Central Hudson's Behind the Meter Services Demonstration Project is targeted primarily to residential and small commercial customers. It is open to customers throughout Central Hudson's service territory.

C. Business Case

Central Hudson's Behind the Meter Services Demonstration Project is a model DSP market development platform. It allows for the development of new revenue streams to Central Hudson through the platform for new services provided to both third parties—data, billing, web hosting—and customers. It will allow competitive third party providers to develop and sell services based upon smart meter deployment and the customer portal provided by Central Hudson. Except for the cost of the customer interface and smart meters provided during the six month trial period, which may be offset by revenues from the competitive third party providers, there is no cost born by Central Hudson's regulated customers because participating customers and competitive third party providers pay for all program costs.

D. Recommendation

Staff should authorize the development and implementation of Central Hudson's Behind the Meter Services Demonstration Project because it is consistent with the REV criteria and principles. The Behind the Meter Services Demonstration Project allows enhanced customer choice by encouraging competitive third party providers to offer new products and services. The ability to leverage Central Hudson's infrastructure and data as a DSP platform may allow the development of new revenue streams to Central Hudson and competitive third party providers, which, in turn, may help stimulate the competitive behind the meter services market.

VI. Ulster County Community Choice Aggregation

A. Project Description

1. Synopsis

Citizens for Local Power (CLP) proposes an Ulster County Community Choice Aggregation (CCA) Demonstration Project as a Wave 1 project of the Central Hudson Rate Case Collaborative. This project is proposed with the support of Ulster County, the City of Kingston, elected leaders of other municipalities, and the President of Ulster County Association of Town Supervisors and Village Mayors. The model proposed here places its focus on energy planning for local build-out of distributed energy resources (DER) – a focus perfectly aligned with the Reforming the Energy Vision (REV) initiative to expand and deepen DER penetration in New York State. CLP refers to this as the "2.0" model of CCA, in contrast to the "1.0" model that is concerned mainly with procuring brokered supply of energy. As will be shown below, the project meets all of the guidelines put forward by the Public Service Commission.

The Ulster County CCA Demonstration Project will enable municipalities within Ulster County to engage in detailed energy planning, setting of goals and priorities, public affirmation, organization of a legal entity, and other actions leading to the creation of the first CCA 2.0 in New York. The proposed project involves four phases over an approximate 30-month period within the proposed three-year rate plan, from receipt of funding and the needed utility data to the launch of the CCA and enrollment of customers. It includes a request for funding through funds designated in the rate plan for REV demonstration projects.

The timeline (see Attachment II) envisions an ongoing public and municipal engagement process, with phased milestones and multiple opportunities for project evaluation. Municipalities will be asked for an increasing commitment in each phase, including participation in Steering Committee meetings, deliberation and staff time for municipality-specific research needs (e.g., zoning and permitting), holding of public meetings to review the CCA planning at various points, and passing of resolutions or referenda expressing their intent to participate. However, municipalities will not be asked to make a formal join decision until Phase IV, when studies have been completed

and full CCA policy, structure, and initial projected rate information will be available. Timing and sequence of steps may vary depending on findings and decisions made during the process.

This demonstration project is expected to reduce the upfront costs of CCA formation for other communities in the State by identifying barriers and opportunities and by creating templates and reports that document processes, institutional forms, and programs. Once operational, the CCA will support and speed up the introduction of DER (including energy efficiency) at the local level, working with more engaged, better informed ratepayers (educated and involved through participation in the process leading up to CCA formation), in cooperation with third-party providers and Central Hudson. CLP intends this project to serve as a means of transforming markets and the energy system itself in pursuit of the goals articulated in the REV proceeding.

2. Introduction

The Commission has issued a call for demonstration projects that "will be an important step in implementing Reforming the Energy Vision (REV) policy changes and will inform decisions with respect to developing Distributed System Platform (DSP) functionalities, measuring customer response to programs and prices associated with REV markets, and determining the most effective implementation of distributed energy resources (DER). These projects are also a means of presenting REV to the customer and gauging their [sic] receptiveness to REV technologies, products, and services. Data collected from these projects will inform regulatory changes, rate design, and the most effective means to integrate DER on a larger scale."[11] In that document and the subsequent order on Track 1,[12] utilities and third parties are invited to propose demonstration projects both directly to the Commission and through all rate cases that occur during the REV proceeding. The Track 1 order states specifically: "In particular we

[11] Case 14-M-0101, Memorandum and Resolution on Demonstration Projects (Issued and Effective December 12, 2014), from the Introduction, p. 1.
[12] CASE 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision. From section IV, F, Demonstration Projects, (p.115) where it also states "A primary objective of these projects is to demonstrate new business models, i.e. new revenue stream opportunities for third parties and utilities."

emphasize the priority of demonstration projects involving third party market participants and demonstrating business models and customer engagement. Each utility is directed to engage third parties and develop concepts for demonstration projects, and file initial demonstration projects consistent with the guidelines developed in the December resolution, not later than July 1, 2015, unless demonstration projects have already been proposed within a rate filing."[13]

CLP submits its proposal for an Ulster County CCA Demonstration Project in response to this invitation by the Commission as well as at the invitation of the Rate Case Collaborative for third-party proposals. CLP will act as the initiating organization for the CCA, working in cooperation with Central Hudson and DPS staff, and with the support and participation of Ulster County (letters of support from Ulster County Executive Mike Hein and other municipal leaders are attached to this document as Attachment v). The role of the County will include requesting and housing data, ensuring data security and confidentiality, assisting with outreach and providing expertise and technical support.

CLP has already done extensive outreach to lay the groundwork for this demonstration project, including organizing three well-attended forums for the public and municipal officials (two in Ulster County and one in Sullivan County, all co-sponsored by local governments and/or the County) and more than a dozen meetings with municipal leaders and the Ulster County Association of Town Supervisors and Village Mayors. The President of the Association of Town Supervisors and Village Mayors accompanied CLP to meetings with the Commission Chair and Department of Public Service Staff. Letters of support for CCA have been submitted to the Commission's proceeding to Enable CCA (Case 14-M-0224) by the City of Kingston[14] and Town of Rosendale in Ulster County, as well as by Dutchess County Legislators April Marie Farley, Alison MacAvery, and Micki Strawinski. Two County Legislators and nine other individuals made comments favoring CCA in the version being proposed here by CLP at the public hearing on the REV proceeding held in Kingston on February 4,

[13] Ibid.
[14] The Mayor's letter was also entered into the public record at the REV Public Hearing in Kingston on February 4, 2015.

2015. A dozen organizations signed on in support of CLP's comments in the CCA proceeding.

At the Commission's public hearing on the current rate plan, held in Kingston on March 12, 2015, Ulster County municipal officials expressed their strong support for the Ulster County CCA Demonstration Project and funding through this rate case to support that project. These officials included: Gregg Swanzey, Director of Economic Development and Strategic Partnerships for the City of Kingston; Carl Chipman, Rochester Town Supervisor and President of the Ulster County Association of Town Supervisors and Village Mayors; Jeanne Walsh, Rosendale Town Supervisor (whose letter was read into the record); and Chris Allen, Ulster County Legislator, representing Legislative District 2 (Town of Saugerties).

CLP's website, a well-used regional resource, prominently features CCA and links to other CCAs of the advanced, DER-inclusive type that is the subject of this demonstration project. See: http://www.citizensforlocalpower.com/community-choice--cca-.html.

3. Definition of CCA 2.0

Community Choice Aggregation allows municipalities, or groups of municipalities, to aggregate the ratepayer load in their territories for purchasing energy and for facilitating investment in distributed energy resources (DER). Formed initially in Massachusetts with state-level enabling legislation in the 1990s, CCAs currently exist in 1,300 communities in six states (Massachusetts, Illinois, Ohio, California, New Jersey, and Rhode Island). An impressive 66% of Illinois and 75% of Ohio communities are enrolled in CCAs.

Although CCAs, on average, save their communities money through discounted rates, the more advanced CCAs (CCA 2.0) focus on lowering overall system-wide costs, resulting in lower bills and competitive, stable rates for everyone in the community. CCA 2.0 is able to achieve lower overall costs through community-wide load reduction from investments in energy efficiency, renewable energy, and demand management, and is also able to achieve greater price stability by entering into long-term power purchase

agreements (PPAs) and by diversifying the energy portfolio to include more renewable content. The focus on data analysis and planning makes it possible to efficiently target efforts to reduce energy use and install local renewable generation resources where they most benefit customers and the grid. To make this possible, a community maps its local renewable resources and energy efficiency opportunities, overlays those resources and opportunities with an understanding of grid load in the community, and develops an implementation plan for DER build-out. Through innovative rate designs and financing tools such as PPAs and revenue bonds, CCA 2.0 can facilitate DER investments by customers and expansion of local and/or regional renewable generation.

4. Ulster County as a model for New York State

The Ulster County CCA Demonstration Project seeks to demonstrate the potential for an integrated energy-planning-based approach to CCA in New York State. As the first CCA of this type in the State, the project will draw on the experience of the most advanced CCA's in other states – primarily California-based Sonoma Clean Power – and will adapt the knowledge and experience gained elsewhere to the quite different conditions in New York State. The process itself will be transformative by gathering information, producing needed data, and raising public awareness in ways that will enhance energy decision-making by individuals, businesses, and municipalities – important public education results whose impact reaches beyond the creation of the CCA itself. The process will provide new insights into customer interest and engagement, and barriers and opportunities for integrating DER on a State-wide scale.

Ulster County (population 181,440) is a prime location for this REV demonstration project. Like many upstate counties, it is predominantly rural, with many small towns, one city and several larger population centers; many small and medium-size businesses; and a diverse population including many moderate to low-income and some wealthier residents. Thirty percent of adults have a four-year degree or higher. The County has a long and proud history of environmental activism and is home to many "early adopters" of DER technology. As noted above, CLP has already done extensive outreach in Ulster County, where it is located, and is in dialogue with

municipalities, community and civic organizations, other elected officials, universities and the general public.

B. The Ulster County CCA Demonstration Project is Consistent with REV Criteria and Principles

1. REV Policy Objectives

CCA 2.0 is ideally poised to achieve the 6 policy objectives of REV:[15]

a) Customer engagement

CCAs' biggest advantage is their capacity to involve local communities in energy planning that is democratically accountable, transparent and participatory. Municipalities create a public platform to establish goals that reflect the interests of the communities they serve. The democratic governance process, including public hearings, meetings, and outreach, allows for a high level of public engagement in decision-making and oversight, while simultaneously educating residents and businesses about energy issues. The planning process for CCA formation engages customers from day one.

b) Market animation and leverage of customer contributions

CCAs animate markets by engaging the private-sector marketplace in implementation of innovative DER products and services at the local level. CCAs develop programs and market projects targeted to customers whose participation will most effectively reduce overall electrical and peak load.

c) System-wide efficiency

Through energy planning based on grid analysis completed in partnership with Central Hudson, CCA 2.0 has the potential to achieve system-wide efficiencies through substantial load reductions. In Sonoma County, for example, the initial data analysis indicated a 67% possible load reduction at rates competitive with the utility using a multi-year build-out plan of energy efficiency, renewable energy and DER.[16]

[15] From the REV Order Instituting Proceeding, p. 2.
[16] See Sonoma County Community Climate Action Plan: A Plan to Achieve Accelerated, Scaled & Cost-Effective Greenhouse Gas Emission Reductions in the County's Energy Sector by 2015, Local Power Inc., May 2008, p. 5, http://localpower.com/sonomacap2008.pdf.

d) Fuel and resource diversity

From the outset, the objectives of the demonstration project will include increased integration of renewable resources in the supply portfolio, thus reducing the price volatility associated with fossil fuels while also reducing GHG emissions. These are the most important immediate goals of fuel and resource diversity.

e) System reliability and resilience

Again, CCA 2.0 energy planning using grid data is key to achieving system reliability and resilience through targeted investments that reduce peak load and increase local, distributed energy resources, including microgrids.

f) Accomplishment of DER and clean energy goals

Based on all of the above, CCA 2.0 has superior potential to help reach the State's clean DER energy goals.

2. Demonstration Project Principles

The Ulster County CCA Demonstration Project meets the PSC's 8 Principles for such projects.[17]

a) Partnership between utility and third party serviced providers

CCA 2.0 is a partnership between municipalities and their consultants (responsible for aggregation of supply, energy planning and investment, and customer communications and services), the utility (a partner in energy planning to achieve system benefits as well as in customer billing), ESCOs (for energy supply contracts), and DER product and service providers (for community and customer DER build-out).

b) Lessons to be learned

CCA 2.0 is a partnership between municipalities and their consultants (responsible for aggregation of supply, energy planning and investment, and customer communications and services), the utility (a partner in energy planning to achieve system benefits as well as in customer billing), ESCOs (for energy supply contracts), and DER product and service providers (for community and customer DER build-out).

[17] Case 14-M-101 Memorandum and Resolution on Demonstration Projects, December 12, 2014, Appendix A.

The Ulster County CCA Demonstration Project will demonstrate the ability of municipalities to involve customers in meeting the goals of REV, and will also show whether and to what extend this approach attracts the support of community and non-profit organizations. It will test cooperation between the CCA and its utility in areas such as data analysis, billing, and toll-out of new technologies and programs. A more extensive and detailed list of lessons to be learned by this demonstration project is appended as Attachment I.

c) Economic value division

All customers, including low- and moderate-income customers, derive economic value from locally defined energy services, such as a choice of rate plans, opportunities for shared renewable investment, and on-bill financing for energy efficiency; ESCOs and DER service providers derive economic value from supply and demand management contracts; third-party providers of renewable energy projects derive economic value from increased main-tier and customer-sited investments locally and regionally; and contractors derive economic value from increased customer investment in energy efficiency improvements. The utility will derive value from avoided T&D investment through efficient integration of DER, and through efficiencies for the DSP gained through aggregation.

Beyond economic value to customers, CCA also provides its customers with the value of a higher renewable energy content for its electricity supply, enhanced energy efficiency, local focus and investment, local control and the ability to serve local energy goals.

d) Competitive markets, ownership by third parties rather than utilities.

CCA 2.0 encourages ownership by many third parties, including: ESCOs (for purchase of supply and other services); small and large businesses (through rates and contracts designed to serve their particular needs); developers (for supply through short- or long- term PPAs; for community- owned generation, microgrids, etc., that may be implemented over the life of a CCA); and municipalities, non-profit and civic

organizations (for outreach and implementation especially in lower and middle income and environmental justice communities).[18]

e) Rules guaranteeing market fairness and competitiveness.

CCAs are necessarily open to diverse market providers, since municipal law requires competitive bids and full financial transparency. CCA implementation plans are certified by the Commission to ensure that they meet the requirements of safety, reliability, and consumer protection.

f) Pricing and rate design modifications.

As in the case of the California-based CCA Sonoma Clean Power, the Ulster County CCA Demonstration Project could offer two distinct tariff rates, the standard tariff (SCP chose a standard rate that offers 33% renewable) and a 100% renewable tariff. Going beyond this basic rate design, novel pricing and rate design options are a natural for CCAs, whose local programmatic focus and ability to set rates provides a platform for marketing and financing DER services to residents and businesses and for facilitating investment in retail renewable cooperatives. The granular data used in CCA planning makes it possible to target load reduction by offering products and services that provide locational benefits, along with products and services that address the power market risk profiles of larger commercial and industrial customers. Rate options can also be developed to meet local economic expansion and business retention goals in the CCA service area.

g) Advanced distribution systems, 2-way communication etc.

CCA has unparalleled opportunities for customer education and targeted marketing within the community, including options for adoption of new technologies at the household and small business level.

h) **Working with various types of customers.**

In order to stay competitive and retain customers, CCAs must provide benefits to all residential, commercial, institutional, and industrial customer participants.

[18] Marin Clean Energy, for example, is partners with the Association for Energy Affordability on Energy Efficiency and the Ulster County CCA might well partner with RUPCO.

C. Business Case

1. The CCA value proposition serves all customers

The Ulster County CCA Demonstration Project will provide valuable information on the potential of a CCA model that is distinctly different from the Sustainable Westchester (SW) CCA pilot approved in part by the Commission in its order of Feb. 26, 2015. Unlike the SW pilot, which is focused primarily on procurement of brokered supply to achieve either lower cost energy or more stable prices or a greener mix of power, the Ulster County Demonstration Project is focused on energy planning with the goal of increasing local build-out of clean distributed energy resources. The demonstration project can be distinguished from the SW pilot project in a number of specific ways, including: 1) undertaking an intensive assessment of local resources and utility data analysis to identify DER opportunities; 2) creating an energy planning process with active municipal, public, and stakeholder engagement; 3) creating institutional capacity for implementing an energy plan; 4) including all customer classes, and not just residential and small commercial; 5) working with the utility and enhancing its capacity to meet its REV mandates of supporting local reliability and increasing market penetration rates of energy efficiency (see REV Track 1 Order, Feb. 26, 2015, pp. 66 and 78).

The Staff White Paper for the Proceeding to Enable Community Choice Aggregation (Case 14-M-0224) specifically recognizes the potential value of the version of CCA envisioned for Ulster County: “Through this sort of local energy planning, municipalities and residents can seek the benefits important to them and participate in the opportunities that REV will offer, while also providing the public policy benefits sought in the REV proceeding. The process of gaining local approval for and implementing CCA programs can also lead to customer education and engagement on energy issues facing New York” (p.4). In addition to the questions enumerated below, which it will directly address, the Ulster County CCA Demonstration Project will allow for a comparative assessment of the effectiveness of the two versions of CCA in furthering the goals of the REV.

Because CCA 2.0 creates grid efficiencies and encourages investment in DER by municipalities, residents, businesses and aggregations of residents or businesses

(for example in shared solar projects), it can create value for entire communities as well as key segments of those communities. Since municipal governments do not profit directly from the CCA, economic value is reinvested and shared among ratepayers, third party providers, and utilities. Over time, investment in DER, renewable generation and energy efficiency will capture more and more of the value locally and realize economic multiplier effects at the same time as it stabilizes and reduces customer bills. For example, a study in San Diego County showed that decentralized investment in renewable energy created 20 times more jobs than centralized power.[19]

The CCA demonstration project is both *flexible* and *scalable*: The model can be tailored to the needs, resources, and local goals of any community or group or communities, rural or urban. At the same time, this demonstration project is expected to reduce the upfront costs of CCA formation for other communities in the State by identifying barriers and opportunities that may be present to varying degrees in other communities, and by creating templates for processes, institutions and programs that can be modified to fit the needs of other CCA start-ups. Moreover, this project will identify informational needs and other soft costs of CCA formation that could be provided by NYSERDA, consistent with NYSERDA's new mandate. NYSERDA is already planning to develop a resource map and is interested in supporting communities in energy planning and DER build-out.

2. Data-based planning

To support the analysis of CCA needs and opportunities, Ulster County is requesting from Central Hudson data including aggregate usage by political district and customer class; system load and load profiles; geo-coded customer-level usage and demand data (where applicable) by latitude and longitude; and information on participation in existing energy efficiency and demand response programs. CLP and Central Hudson have discussed details of the data request to ensure that it is compatible with what Central Hudson can report and with the planned analysis. Ulster County routinely manages confidential and sensitive information, including proprietary information from vendors, labor force data from the NYS Department of Labor on

[19] Al Weinrub, "Community Power: Decentralized Renewable Energy in California," December 2010, p. 20.

individual business, public assistance and Medicaid records including confidentiality agreements with consultants, and bed tax collection data from tourism properties. The County will manage all data provided by Central Hudson in a manner consistent with the procedures used by the County to protect these other types of confidential data, including review by the County Attorney's office of FOIL requests, and confidentiality agreements between agencies and its consultants. Ulster County and its consultants will sign needed Non-Disclosure Agreements to protect the confidentiality of any and all data provided by Central Hudson for investigation and development of a CCA. The County will also cooperate with Central Hudson and as required the Public Service Commission to predetermine what sensitive information (e.g., proprietary, critical infrastructure-related) will not be subject to FOIL if released to the County. Ulster County currently includes in its contracts with consultants language restricting the distribution of confidential information that is easily modified to limit sharing of utility data with energy supply companies (ESCOs) to aggregate city-wide and block-wide data, prior to selection of an ESCO to serve the operating CCA.

A copy of CLP's data request list is appended to this document as Attachment III.

3. Budget and funding

A draft preliminary budget (Attachment IV) for the demonstration project, in the amount of $798,147, is designed to allow CLP and Ulster County to cover basic costs during Phases I-IV of the creation of the CCA. Additional funds are being sought from other sources to provide added support for outreach and public education. Over half of the draft budget is designated for honoraria for the consultants who will produce the White Paper, preliminary studies, Resource and Business Plan, Implementation Plan and RFP development documents, and a Final Report that will also serve as a resource for other municipalities seeking to form a CCA in New York State. Additional funds support Project staff, data security, additional consulting (outreach to specific constituencies, County consulting needs), legal advice, meetings, travel, and materials.

Depending on the starting date of the demonstration project, it is estimated that approximately $310,000 will be required in Rate Year 1, $310,000 in Rate Year 2, and $180,000 in Rate Year 3.

The CCA will be self-funding from the moment it is formally created, except for costs incurred by the utility, for which the Commission has granted cost recovery to the utility through its rates.

The timetable and sequence of events will be dependent on a number of factors that are unknown at the time this plan is being created, and will be subject to revision and affirmation by participating municipalities and their representatives at each step of the way. CLP looks forward to working constructively with Central Hudson and with PSC staff to resolve the many questions and make the decisions that will ensure the success of this multi-party collaboration. We expect that funding for the demonstration project will be provided on a running basis as expenses are incurred, and will work with DPS Staff on the appropriate funding procedures and oversight.

D. Recommendation

The Staff should authorize the development and implementation of the Ulster County CCA Demonstration Project because it is consistent with the REV objectives, criteria and principles. The Ulster County CCA Demonstration Project animates customers and allows communities and New York State to gain important new information and experience with energy planning, market transformation, and DER introduction.

DEMONSTRATION PROJECTS AND CONCEPTS BEING CONSIDERED BY THE COLLABORATIVE

The Collaborative may continue to meet to discuss and develop Demonstration Projects. The Collaborative has discussed several alternatives to the Community Solar Demonstration Projects previously discussed and one additional Demonstration Project for future development. These alternatives and future projects are not yet fully developed and ready for implementation. Regardless, the Collaborative would like to inform the Commission of these alternative and the future potential Demonstration Project.

I. Community Solar

A. Consolidated Edison Solutions Alternative Community Solar Demonstration Project

1. Project Description

Con Edison Solution's proposed Community Solar Demonstration Project is designed to test the receptivity of Central Hudson customers to purchasing without net-metering credits the output from a utility-scale photo voltaic ("PV") solar generation facility owned and operated by a third party developer within Central Hudson's service territory. One of the goals of this Community Solar Demonstration Project is to determine whether the efficiencies of constructing a utility-scale grid-connected solar facility can produce an attractive customer offer without net metering credits. A second goal is to provide customers who may not be able to install a customer-sited PV solar facility with an opportunity to obtain a comparable product to that produced by a rooftop solar installation, through solar energy generated at a facility located in a local community.

The Community Solar Demonstration Project is aligned with the stated goals of REV and will lead to: a reduction in carbon emissions; an increase of customer choice and engagement; and a stimulation of local economies through job creation and payment in lieu of taxes and/or an increase to the local tax base where the solar facility is located. Customer participation in the Community Solar Demonstration Project is voluntary.

Central Hudson will solicit bids from third party developers to build, own, and operate the proposed Community Solar Facility on land that Central Hudson owns adjacent to an existing substation. Central Hudson's initial filing identified three such locations in Saugerties, New Windsor and Pleasant Valley. Prospective bidders will submit a binding offer to sell all the energy production from the facility to Central Hudson at a fixed cents/kWh price for 25 years and conduct a marketing campaign to obtain at least a 90% customer subscription level. Central Hudson will select the winning bidder based on the lowest cents/kWh bid from qualifying developers.

Customers participating in the Community Solar Demonstration Project will purchase one or more subscription blocks of solar power, with each subscription size based on the output from 3 solar panels located at the solar facility. The amount of renewable power in each subscription block will vary monthly to match the anticipated monthly production of the Community Solar Facility and will peak in the months of May through July. Purchases by individual customers will be limited to no more than their peak energy usage in those months. Central Hudson will charge customers a fixed price per kWh for each unit purchased and the rate will not change for the term of the purchase agreement. Central Hudson will offer customers up to a 25 year agreement. Customers will be required to pay an exit fee if they exit the contract within the first two years. The fixed price agreement will act as a hedge against potentially rising commodity costs. Each customer's purchase will displace energy from the commodity portion of the participating customer's bill. The customer will be able to purchase the remaining portion of their electricity requirements (i.e. their actual usage less their subscription purchase) either from an ESCO or from Central Hudson.

The developer will be responsible for applying for available incentives such as Renewable Portfolio Standard ("RPS") funds from New York State Energy Research and Development Authority ("NYSERDA") and the Federal Investment Tax Credit ("ITC") to the extent that the Community Solar Demonstration Project is eligible. The developer will include its estimation of the value of such incentives in its proposed bid to Central Hudson and such bid shall be expressed on a fixed cents/kWH basis to be paid for all solar production from the Solar Facility for a term of 25 years after the project

becomes operational. The developer will be responsible for all operating and maintenance costs for the 25 year term including, but not limited to, property taxes and/or payment in lieu of taxes related to the Community Solar Facility.

Central Hudson will seek PSC approval to not collect SBC and RPS charges and Section 18-a assessments on the Community Solar Demonstration Project sales to reflect the fact that rooftop solar installations would not be paying these charges on their solar production.

The developer will conduct a marketing campaign to encourage customers to purchase renewable energy from the Community Solar Demonstration Project. The marketing campaign will last for up to 1 year, or until the project is fully subscribed, and the developer will guarantee that the Community Solar Demonstration Project reaches at least 90% subscription before the Solar Project is operational. If the developer fails to achieve the 90% subscription level, Central Hudson's obligation to purchase the project's output could be reduced proportionately.

Five percent of the Community Solar Facility's energy output will be reserved for low-income customers. The marketing campaign will outline the offer to low-income customers of a discounted rate so that they may have a reasonable opportunity to participate in the Community Solar Demonstration Project.

The Third-Party Owned Community Solar Demonstration Project will not be net-metered. Thus, it will not shift project costs from participating customers to non-participating customers through the net metering mechanism. Customer participants, also known as subscribers, will pay for all of the costs associated with the Community Solar Demonstration Project.

The fixed price per kWh charged for solar from the Community Solar Demonstration Project will consist of the developer's cents/kWH accepted bid plus Central Hudson's cost of interconnecting the Solar Project to its substation based on the annual cost of service of that portion of the asset including project installation, project material, labor, taxes, insurance, operation and maintenance, interconnection, Central

Hudson's cost of capital, environmental and permitting, site security, and IT programming as applicable.

Central Hudson's transaction with subscribing Community Solar Demonstration Project customers will be financial and not physical in nature. While customers will support and get the benefit associated with the capacity and energy produced by the Community Solar Facility, Central Hudson's distribution system, not the subscription customers, will receive the actual energy output of the facility.

B. Third Party Owned Community Solar Demonstration Project is Consistent with REV Criteria and Principles

1. Criteria

a) Flexibility

The Third Party Owned Community Solar Demonstration Project provides third parties operating in the competitive markets the ability to compete for the service of constructing, owning and operating Solar Facility and conducting the initial customer subscription period. Customers who would not otherwise have the ability to install solar panels at their premises have the opportunity to participate in the Community Solar Demonstration Project in the manner and at the cost that benefits them. The Community Solar Demonstration Project provides all stakeholders with the flexibility they need to participate appropriately and provides the Commission with the information it needs to assess its criteria and principles.

b) Demonstrating Innovation

Currently, there are no community solar facilities in New York State, therefore, the Third Party Owned Community Solar Demonstration Project in and of itself demonstrates innovation. Additionally, it provides an innovative approach to distributed solar energy and will validate whether a grid-connected project can proceed on a customer subscription model without net metering credits.

c) **Value Distribution**

This Community Solar Demonstration Project provides third parties with an opportunity to compete for constructing, owning and operating a grid-connected solar facility and provides customers with limited ability to access traditional solar resources with an opportunity to participate in the solar resources market. Having a competitive process select the developer to construct, maintain and market the solar facility to subscribers ensures that participating customers will pay a fair and cost-effective price for their solar renewable energy. The introduction of this Community Solar Project allows customers who otherwise would not be able to install solar equipment with the ability to participate in the competitive solar market. In addition, the low income discount rate will expand the competitive solar market to a customer segment that is frequently overlooked and/or bypassed by the solar industry. This represents a value proposition for all participants in the competitive solar market.

d) **Partnerships**

The Community Solar Demonstration Project represents a true partnership between Central Hudson, competitive providers, customers and government. Central Hudson issues an RFP seeking competitive providers to offer services providing for the engineering, procurement and construction and subsequent ownership and maintenance of a PV solar facility. Additionally, the RFP solicits bids for a detailed plan to encourage customers to subscribe to the Community Solar Facility. The subscription model offers third parties an opportunity to directly interact with Central Hudson. Government provides a pivotal policy role because supporting the Community Solar Demonstration Project through appropriate subsidy grants demonstrates its commitment to furthering the REV initiative.

e) **Customer Engagement**

The Community Solar Demonstration Project offers a significant opportunity to increase customer engagement. The subscription based model not only enables customer choice, but is also another mechanism to inform customers about their energy usage. Customers will also have the opportunity to share information among themselves through a virtual community created as part of the Community Solar

Demonstration Project. Additionally, by reserving up to five (5%) percent of the solar financial equivalents from the Community Solar Facility for low-income customers to be offered at a discounted rate, this program is encouraging participation in renewable energy to a market segment that is not currently engaged.

f) Market Solutions

Central Hudson will issue a RFP that allows third parties to bid on the ability to own and operate the Community Solar Facility and conduct the marketing campaign. The use of a revenue bid to select a winning project has been used extensively by PSEG-LI in attracting solar development on Long Island. The specific design of the solar facility can be tailored to meet Central Hudson's local needs such as helping relieve commercial load by configuring the panels in west-facing orientation and/or incorporating battery storage into the design. This approach will enable Central Hudson to select the most cost effective, technologically advanced, and market efficient combination of providers to construct, own, operate and maintain the Community Solar Facility, and market the Community Solar Facility to subscribers.

g) Developing Competitive Markets

There is currently nothing precluding third party service providers from pursuing a Community Solar project. Yet, as previously discussed, there are no Community Solar projects in New York. Under these circumstances, a Community Solar Demonstration Project will help create a competitive market by increasing the number of customers with an opportunity to participate in the competitive solar market, the demand for solar energy and the third party providers available to meet the increased demand. This Community Solar Demonstration Project will test the ability of the competitive solar market to meet the needs of customers and the increased demand evidenced by the purchase of subscriptions to the Project.

h) Ensuring Cyber-Security

Because Central Hudson will control the interconnection of the Community Solar Demonstration Project and will retain the responsibility to bill customers such that they displace an equal portion of a customer's subscribed solar financial equivalents from their commodity bill, there are no cyber-security issues associated with this project that

differ from the issues that Central Hudson faces every day. To the extent that a third party service provider is selected to market subscriptions to the Community Solar Demonstration Project, it will be contractually obligated to take the same precautions to protect customer information as does Central Hudson pursuant to the Commission's Order on Rehearing Granting Petition for Rehearing in Case 07-M-0548 Issued and Effective December 3, 2010. Central Hudson will also require a third party provider to maintain suitable cyber-security insurance.

i) **Scalability**

Depending on which facility is offered to developers, the Community Solar Demonstration Project can range in size from 1 to 2 MW AC. The 3 panel subscription blocks would provide a customer with approximately 1100 kWH of annual energy and a 1 MW installation would require approximately 1400 subscription blocks to be sold. The Community Solar Facility is of a size and scale that is replicable in the market and has the ability to engage a number of customers who are not currently able to participate in the solar energy markets.

j) **Cost Recovery**

The proposed Community Solar Demonstration Project is designed to be self-funded by the customers who subscribe to purchase energy from the Project. The concept is very simple; if the Community Solar Demonstration Project is fully subscribed it is fully funded. To help ensure this, the developer is responsible for achieving a 90% subscription rate when the project becomes operational. In addition, by shaping the monthly subscription volumes to match the monthly production of the facility, any balancing and shaping costs will be minimized if not entirely eliminated.

2. Principles

a) Partnerships Between Utilities and Third Party Providers

The Community Solar Demonstration Project offers the opportunity for Central Hudson, the utility, to partner with government, third party providers and customers.

b) Lessons Learned

Renewable energy, and solar energy in particular, must ultimately compete with traditional sources of energy at market prices and without subsidies. Today, solar energy is more expensive than traditional energy sources and therefore, receives substantial subsidies to encourage the development of the competitive solar energy market. Customers who install rooftop solar facilities receive direct grants, tax incentives, and the economic benefit of net metering credits. This Community Solar Demonstration Project allows all customers to purchase solar financial equivalents, including those who do not: own their home; have property with proper exposure to the sun; or have sufficient income to purchase solar facilities. These facts allow us to learn a variety of lessons from a Community Solar Demonstration Project including whether a utility scale project can be viable without net metering credits that would otherwise impose additional costs on non-participants.

Lesson's to learn include: (1) whether the construction efficiencies in a utility-scale solar project can produce a competitive retail price without net-metering credits; (2) comparison of customer engagement within a subscription based model and other product offerings such as ownership or leasing arrangements of rooftop solar; (3) gaining a better understanding of customer segments in order to inform future community solar projects and other product offerings such as demand response and energy efficiency; (4) testing the engagement and participation of Low Income customers within a community solar subscription program; (5) how a large scale solar facility affects power quality and reliability on the interconnected distribution system; and (6) the effect, effectiveness, reliability and cost of new technologies used in concert with PV solar facilities, such as storage and smart inverter technology.

c) The Division of Economic Value Between Customers, Third Party Providers and The Utility

The Community Solar Demonstration Project will create economic value for customers, third party providers and Central Hudson: participating customers will obtain clean solar power at a stable energy price; the winning developer will be able to build, own and operate a utility-scale solar project and receive stable revenues for the project life; and Central Hudson will be able to provide a service that customers want in a cost-

efficient manner, without the upward pressure on rates that comes from net-metering credits.

d) Competitive Markets and the Need, or Lack of Need, for Utility Ownership of Distributed Generation

From a competitive market perspective, customer choice should prevail. Customers should be able to purchase Distributed Energy Resources ("DER") and their energy output from the lowest price provider of their choice, which may be different in different circumstances. The failure of the competitive markets to develop a community solar model that allows low-income customers, renters, and owners of property not suitable for solar installation to participate in the solar market makes a Community Solar Demonstration Project, such as the one proposed herein, appropriate for consideration. Customers deserve choices while being provided reliable service. This Community Solar Demonstration Project provides an opportunity to learn about the advantages and disadvantages of a utility-scale project without net metering credits.

e) The Development of the Competitive Markets, Appropriate Regulation to Ensure Safety, Reliability and Consumer Protection

As previously mentioned, there is nothing precluding third party service providers from pursuing a Community Solar project. Absent barriers to entry created by utilities or utility regulation, there is no need to propose rules that will help create a competitive market because the opportunity to participate in the competitive market exists today. Additionally, there are no regulatory proposals required to ensure grid safety or reliability or consumer protection in order to implement the Community Solar Demonstration Project as it raises no new safety or reliability issues.

f) Demonstrations Should Inform Pricing and Rate Design

This Community Solar Demonstration Project will provide significant information regarding customer prices available in the competitive solar market and rate design. Customers subscribing to Third Party Owned Community Solar Demonstration Project will be able to purchase the solar financial energy produced from increments of 3 panels. Central Hudson will charge customers a fixed price per kWh for each solar

financial equivalent purchased and the rate will not change for the period of the purchase agreement.

The fixed price per kWh will include the all-in price from the developer and Central Hudson's cost to interconnect the project and administer the program. Customers who subscribe will pay the project's costs. Further, subscribers to Central Hudson's Community Solar Demonstration Project need not pay SBC and RPS charges associated with the amount of energy that they purchase so they will be treated similarly to rooftop solar customers. The monthly shaping of energy sales and the absence of net metering credit precludes the potential for cost shifting to other customers that may occur with other Community Solar proposals and other solar offers in the market today.

g) Deployment of Advanced Systems

This Community Solar Demonstration Project presents the opportunity to partner with third party service providers to test the deployment of system technologies, such as battery storage and "smart" inverters, which support awareness, flexibility, efficiency and cost effectiveness.

h) Diversity of Customers Participating

Today, participation in the competitive solar markets is largely limited to commercial customers and affluent residential customers with unobstructed land or rooftops. This is because of a combination of the prerequisite site conditions for a customer-sited solar installation and the significant upfront cost to the consumer or the necessity of a long term lease to the solar installer. This Community Solar Demonstration Project is available to all customers willing to pay the price per 3 panel tranche. Whether a customer is low-income, a renter, has an obstructed rooftop, or simply does not want to place PV solar panels on their roof they are eligible to subscribe to the Community Solar Demonstration Project. Customers participating in the Community Solar Demonstration Project will be significantly more diverse than customers participating in the competitive solar market today.

3. Project Pros

This Community Solar Demonstration Project offers many advantages from a

regulatory, customer, third party service provider and utility perspective. From a regulatory perspective, this Community Solar Demonstration Project moves toward cost based solar rates. It accomplishes this goal because the Community Solar Demonstration Project ensures that subscribers to the facility will pay for the facility's costs, allowing the Community Solar Demonstration Project to avoid significant cost shifting to other customers.

From a customer perspective, this Community Solar Demonstration Project provides all customers with the opportunity to participate in the competitive solar market. Thus, renters, low-income customers, and homeowners or small commercial customers with obstructed rooftops will be able to purchase all, or part of their energy supply from a local solar facility.

Further, from a taxpayer's prospective, the Community Solar Demonstration Project achieves carbon reduction utilizing less in state and federal credits. This Community Solar Demonstration Project thereby deploys taxpayer money to reduce carbon emissions in the most efficient manner possible.

From a third party service provider perspective, this Community Solar Demonstration Project presents an opportunity to jump start the nascent competitive solar market by engaging new customer segments and providing new services to utilities and other Community Solar providers. Those new services include the construction, operation and marketing of Community Solar Facilities. The opportunity to provide new competitive services at reasonable margins in response to RFPs for Community Solar Projects should help the development of the competitive solar market. An increased number of customers to serve, and new services to provide, make this Community Solar Project an additional opportunity for third party service providers to participate in the market.

The proposed subscription model avoids cross subsidization between customers and avoids the insertion of incremental costs into rates.

This Community Solar Demonstration Project provides all stakeholders the

opportunity to learn about utility ownership of a Community Solar Facility. It provides an opportunity to learn about customer engagement with the competitive solar market through a new service model with a lower cost profile and without net metering. There are also opportunities to explore the use of new technologies, such as smart inverters and storage.

4. Project Cons

Because the cost to construct and maintain solar facilities is higher than it is for traditional generation sources on a per watt basis, this Community Solar Demonstration Project will likely result in a cost premium compared to Central Hudson's existing commodity charges. As a result, participating customers are likely to pay a modest premium for their subscriptions. This is true even though the Community Solar Facility costs significantly less to construct per watt than does a rooftop solar facility. If the Community Solar Demonstration Project does not remain fully subscribed over the 25 year term, Central Hudson's non-participating rate customers will have to pay for some of the costs.

C. Dutchess County's Alternative Community Solar Share Sale Demonstration Project

1. Introduction

The project proposed is an innovative approach to the issue of DER discussed in the REV. The approach allows the market place to participate in what many consider a "socially responsible" purchase, of electric supply. Customers of electric energy could under this proposal purchase under a regime which was not tethered to cross subsidies where only a selected few benefited. In that regard the proposal examines and hopefully starts a process which leads to the elimination of Public Policy that fosters the subsidy of affluent electric energy customers by low income customers. Americans are willing to pay more for the value they perceive in a product. Unfortunately when it comes to kilowatt-hours due to the highly regulated system in place for the production, delivery, and sale the product remains undifferentiated. Differentiation allows for such commodity products as air travel, or land transportation, or food to be acquired at

pricing the value of which is exclusively held as a perception by the party making the purchase. To get from point A to point B why would an auto customer buy a Tesla versus a Ford Focus? The Tesla sale comes as the result of providing a differentiated product that the market desires. Why else would a customer add another $50,000 in purchase pricing to get from point A to point B? This Central Hudson Community Solar Project is an absolute necessity for demonstrating market innovation supporting the REV proceeding if in fact one of the underlying supports of the REV is to use the market place to reduce future customer costs. Let the market dictate the cost to provide the kilowatt-hour and let the customer decide they would like to make the purchase based upon the value they perceive from a differentiated product which by source of generation characteristics is superior to other products.

2. Proposal Improvement

The proposal uses a financial rather than a physical product delivery. Such a structure allows for an ease in delivery accounting which eliminates the transaction balancing that accompanies physical deliveries and in essence allows for a more liquid market place. However, the proposal is embedded in the regulated cost of service operation of a New York State Public Service Commission jurisdictional utility. Such an ownership structure has future market limitations as the proposal indicates on page eleven under C. Project Pros, “From a regulatory perspective Central Hudson’s Community Solar Demonstration Project moves toward cost based solar rates.” At the end of the day the objective should be market based solar rates not cost based solar rates. However, as Central Hudson also points out on page 10, there are “barriers to entry created by utilities and utility regulation”, as such for this demonstration to work Central Hudson must be involved. What is proposed is to add competitive ownership of the demonstration to the proposal. Allow for a stand-alone LLC to own the project. Central Hudson would own 51% of the LLC and the project would allow for ownership of the remaining 49% modeled after stock ownership in a publicly traded corporation. Such ownership certificates could then be traded or sold.

Consideration could also be given to allowing the 100 KwH service blocks to be purchased along with ownership, and the blocks could be sold/purchased by customers who chose to sell/purchase the blocks in the future. To allow for a more liquid market place consideration should be given to allowing the pricing for the blocks sold to vary above the original 100 KwH block price developed from the project pro forma. Current block pricing could be listed on a trading spread sheet posted on the LLC's web site.

In essence everything in the demonstration project as proposed by Central Hudson would remain as stipulated with the addition of an entity that had more of a competitive market focus than the regulated utility. At the same time the entity would benefit from Central Hudson experience and oversight. Other market ESCOs could be allowed to participate and make investments in the LLC.

As stated under project cons on page 13, for this proposal to make sense there must be some starting subsidies but the subsidies if required could take place on a yearly basis after an accounting of LLC performance on a cost of service basis.

Again the proposal is a step in the right direction in moving toward solar generated kilowatt-hour sales supported by the competitive market place eliminating subsidies that some customers just cannot afford. The project as sponsored and supported by a regulated utility would be open and transparent eliminating non-disclosure elements of projects that could be provided by others in this proceeding.

3. Status

Central Hudson believes that a proposal for a share sale is not fully conceived and needs considerable development if it is ever to be ready for presentation to Staff. There are issues associated with the transfer of utility property, including but not limited to Section 70 proceedings and price. It is unknown whether there could be a market to trade shares and under what circumstances. Because Central Hudson's Community Solar Demonstration Project is a financial transaction the PV Solar Facility's output does

not track to the purchasing customer and would not track to the share owner. It may be impossible to adopt two different financial energy output methods; one for customers and one for share owners.

II. MI's Potential Self-Directed Demonstration Project

MI's Customer Self-Directed Program Demonstration Project represents the most recent Demonstration Project concept to be raised at the Collaborative. A Self-Directed Program permits large commercial and industrial customers to have "first call" on the energy efficiency. The large commercial and industrial customers may also have "first call" on renewable surcharge payments that they make for purposes of their own energy efficiency and renewable and other REV-consistent energy infrastructure projects. Such programs address many of the barriers faced by large customers regarding the implementation of energy efficiency and renewable projects at their facilities. MI's Self Direct Demonstration Project also may address longstanding interclass and intra-class equity concerns with the current, surcharge-based approach.

In the Commission's REV Track One order, all utilities were directed to implement a Self-Directed Program for large commercial and industrial customers effective no later than January 1, 2017. MI's Self-Directed Demonstration Project would strive for implementation, if feasible, in Central Hudson's service territory by January 1, 2016. MI, Central Hudson and the Collaborative participants may discuss expansion of the Self-Directed Demonstration Project beyond energy efficiency projects to enhance implementation of other REV-consistent energy infrastructure projects. A Self-Directed Demonstration Project should provide valuable information for the broader, statewide implementation of self-directed programs, and also test whether the concept is scalable beyond energy efficiency to include other REV-consistent energy infrastructure projects. MI only recently raised the possibility of this Self-Directed Demonstration Project during the collaborative process. MI, as well as the other collaborative participants, believe that further work is needed before the Project is ready for regulatory review and consideration. At this time, Central Hudson simply is identifying this Demonstration Project as one likely focus of future collaborative efforts.

COLLABORATIVE'S NEXT STEPS

Central Hudson intended that the Collaborative would continue throughout its rate plan to act as an incubator for Demonstration Projects that could inform Central Hudson as the DSP, the Commission, Staff, Collaborative participants and all other stakeholders to the REV proceedings. The REV Order seems not to have provided a mechanism for approval of non-utility Demonstration Projects and seems ambiguous regarding how the DSP structure should develop. The Collaborative will need to better understand how it might assist the development of the REV vision before it can determine how it might proceed during Central Hudson's Rate Plan.

Regardless, Central Hudson will work through the Collaborative, or separately with interested parties, to develop the DSP platform, Demonstration Projects, and competitive market facilitation.

CONCLUSION

Central Hudson, Staff, and the Collaborative participants have worked together to identify Demonstration Projects that would benefit customers through market formation, long term planning cost reductions, and new revenue streams. The results include these Demonstration Projects, that provide opportunities to increase the number of customers that can participate in the competitive solar energy markets, have identified low cost alternatives to long-term transmission and distribution capital investment, provide market opportunities for customers to purchase additional reliability and resiliency and behind the meter services. Central Hudson appreciates the work and collegiality of the Collaborative participants and hopes that the Commission sees value in the Collaborative process and structures REV to allow the process to continue.

Respectfully submitted,

Paul A. Colbert
Associate General Counsel-Regulatory Affairs
Central Hudson Gas & Electric Corporation
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Poughkeepsie, New York 12601
Telephone: (845) 486-5831
Email: pcolbert@cenhud.com

May 1, 2015

APPENDIX

CONFIDENTIAL ATTACHMENTS INTENTIONALLY EXCLUDED

Attachments:

1. Community Solar
2. Central Hudson's Microgrid Demonstration Project
3. Central Hudson's Demand Response Demonstration Project
4. Central Hudson’s Behind the Meter Services Demonstration Project
5. CLP CCA Demonstration Project

REQUEST FOR PROPOSAL (RFP)

Deadline: November 14, 2014

Targeted Demand Management Program

Prepared by:

Central Hudson Gas & Electric Corp
284 South Ave.
Poughkeepsie, NY 12601
845-486-5565

October 13, 2014

Contents

I. OVERVIEW

A. INTRODUCTION/BACKGROUND

Central Hudson Gas & Electric Corporation ("Central Hudson" or "the Company"), in incorporated in the State of New York with its principal offices at 284 South Avenue Poughkeepsie, New York 12601, is a subsidiary of Fortis Inc., and a regulated transmission and distribution utility serving approximately 302,000 electric customers and 78,000 gas customers in eight counties of New York State's Mid-Hudson Valley that extends from the suburbs of metropolitan New York City north to the Capital District at Albany. Central Hudson's service territory is comprised of five operating districts: Kingston, Catskill, Poughkeepsie, Fishkill and Newburgh. For a map of Central Hudson's service area, see http://www.cenhud.com/pdf/Service area.pdf.

As part of the Reforming Energy Vision (REV) initiative commenced by the New York State Public Service Commission (Case 14-M-0101) and incorporated in Central Hudson's recent rate filing (Cases 14-E-0318 and 14-G-0319), Central Hudson endeavors to provide a demand management program for all customers in targeted growth areas of the Company's service territory which may allow Central Hudson to delay or avoid traditional transmission and distribution infrastructure investments.

Central Hudson requests proposals from contractors to aggregate residential and commercial customers for turnkey program management and delivery services for a targeted demand management project ("Program").

Proposals from qualified and experienced vendors ("Contractors") should describe implementation, operational support, reporting and analysis services for the Program. Contractors are invited to submit proposals outlining their qualifications, approaches and costs to provide the required services for the Program. The Company intends to contract with a single Contractor to implement and manage the Program.

Proposals should be submitted in hard copy (5 copies) and marked as confidential and referencing the RFP number on the outside of the sealed envelope. Proposals should not be made public and non-confidential proposals may not be considered. Attached to this RFP are Central Hudson's Plans and Specifications Describing the Work, General Conditions, and Sample Standard Contract, each of which is incorporated herein by reference. Proposals must be consistent with the requirements of this RFP, Central Hudson's Plans and Specifications Describing the Work, General Conditions, and Sample Standard Contract (together the "Terms and Conditions"). Proposals that are inconsistent with the Terms and Conditions may not be considered.

B. PURPOSE OF RFP

The Program would be targeted at aggregating residential and commercial customers such that the aggregator has the ability to timely reduce aggregated load in specified areas within the service territory. The targeted areas have been established are based on identified distribution circuits, substations and transmission regions where Central Hudson anticipates the need for load growth-related infrastructure projects generally estimated to occur in the next 4-10 years, but could defer or eliminate the need with a successful demand management program. The Program will provide significant new information for integrating demand management resources into the Company's electric transmission and distribution planning and operations functions.

The successful bidder will be required to have a proven track record of success with demand side management programs and continued dedication to both the quantitative and qualitative aspects of program management and delivery. The successful bidder will distinguish itself by having previously demonstrated a culture of continuous improvement and a high level of customer satisfaction.

Central Hudson intends to select a single vendor to provide program services that will be implemented for a four-year period with defined milestones by May 2017.

C. TARGETED AREAS (Table 1)

The below table describes the four targeted areas where demand management could defer traditional transmission and distribution infrastructure upgrades. The Company's system peak happens during summer months. Contractors should note that according to a Residential Appliance Saturation Survey conducted by Applied Energy Group in 2013, 32% of all households in Central Hudson's service territory cool their homes using a central air conditioning unit.

Substation	Circuit	MW Reduction	Date Required	# of Customers		Participants in EE	% of Customers in EE	kW Breakdown of Commercial Customers		
				Residential	Commercial			0-100kW	101-300kW	> 300kW
Ohioville	5021	4	May 2017	1,997	431	160	6.59%	423	6	2
	5022			725	146	44	5.05%	145	1	1
	5023			1,677	388	84	4.07%	366	19	3
	5024			1,167	145	59	4.50%	139	5	0
	5025			120	26	1	0.68%	25	1	0
Merritt Park	8063	1	May 2019	1,160	304	52	3.55%	298	4	2
	8066			1,377	191	37	2.36%	186	3	2
Shenandoah	8071	5	May 2018	1,796	228	72	3.56%	223	3	2
	8072			1,316	241	74	4.75%	238	2	1
Fishkill Plains	8091			1,744	396	102	4.77%	393	3	0
	8092			1,735	50	121	6.78%	50	0	0
	8093			1,386	354	82	4.71%	350	3	1
	8094			2,262	152	140	5.80%	150	2	0
	8095			1,643	341	69	3.48%	340	1	0
	8096			840	136	37	3.79%	136	0	0
NW Corridor *	Multiple	10	May 2019	32,054	6,518	1,024	2.65%	6,428	66	24
Total		**20**		**52,999**	**10,047**	**2,158**	**3.42%**	**9,890**	**119**	**38**

For the larger services areas labeled “Ohioville” and “Shenandoah/Fishkill Plains” a Program reduction requirement of 2MW by May 2016 is required. The Program will be reevaluated at that time.

*5MW of the 10MW total reduction is needed by May 2017 with annual re-evaluations thereafter. The Northwest Corridor is comprised of 24 circuits.

II. SCOPE OF SERVICES

Central Hudson desires to partner with a Contractor who offers turnkey aggregation of residential and commercial customers utilizing best practices in demand management technology. Bidders are encouraged to consider direct load control, behavioral modification, distributed generation, energy storage capabilities, and other innovative technologies for this Program. The Contractor will operate and manage this Program for Central Hudson across the designated areas, providing the services listed. The bidder shall respond to each item with a detailed explanation.

A. PROGRAM MANAGEMENT

The Contractor must provide a sufficient and skilled administrative staff for accurate and timely management of program tracking/status reports that includes: customer closure rate, invoices, requests for information, customer dialogue and problem-solving, lead generation, general customer management, and overall commitment and execution of continuous improvement for work processes.

The Contractor shall act as the primary point of contact with the customer. The Contractor will coordinate all marketing efforts, outreach, education, and support services. The Contractor will coordinate efforts with the Company to finalize the design of the Program for implementation, including the development of marketing, sales, outreach and education plans. The Contractor will be responsible for reporting, performing quality control, as well as supporting the monitoring, verification and evaluation processes of the Program.

Program management includes (but is not limited to):

- Confidential use of customer data,
- Marketing and outreach,
- Customer communication,
- Call center operation,
- Customer incentives,
- Program performance monitoring, validation and tracking,
- Provide customer equipment and installation,
- Inspections and tracking,
- Quality control mechanisms and
- Program accounting processes.

The Contractor may team with other companies, and if so, must clearly define the organizational responsibilities and authority structure of the team. The Contractor may also hire subcontractors. The Contractor is responsible for conducting QA/QC of all subcontractors' activities and operations, and reporting such results to the Company.

B. CUSTOMER SATISFACTION

The Contractor will actively manage customer satisfaction with the Program, and serve as the point of contact in resolving customer issues, at times in conjunction with Central Hudson program staff. Customer concerns and issues must be resolved promptly, to the customers' satisfaction. The Contractor will conduct annual customer satisfaction surveys of Program participants on May 1st and on October 1st. These surveys will be used to determine the customers' satisfaction with the Program, the Contractor's performance and various program elements, including but not limited to: program solicitation, installation work, scheduling, call administration and other project processes. The Contractor must obtain Company approval of the survey contents prior to distributing such surveys to Program participants.

C. MARKETING AND CUSTOMER OUTREACH/EDUCATION

The Contractor's responsibilities will include the design and implementation of a residential and commercial marketing plan that addresses the demand reduction targeted for each identified area which will include specific plans for each customer class segment. The marketing plan must propose strategies to inform and educate customers as well as promote and maximize customer enrollment and engagement in the Program.

To support the Contractor in managing and delivering the Program effectively, Central Hudson will provide to the winning bidder:

- Co-branded materials such as Central Hudson contractor identification badges, and the appropriate use of the Central Hudson brands and logos to promote demand management.
- Promotion of the Program through various marketing and social networking channels such as bill inserts, www.CentralHudson.com, Facebook, news releases, industry or Chamber of Commerce events, in-person meetings with businesses, customer newsletters and e-mail blasts. Central Hudson will also provide direct support through news releases about the partnership between the Contractor and the Company.
- Attendance of Central Hudson staff at designated demand management training sessions designed to educate customers about the Program.

D. CROSS-MARKETING WITH ENERGY EFFICIENCY

The Company will assist the Contractor by engaging customers in an enhanced and targeted energy efficiency programs to encourage participation in the demand management program. The Contractor will be responsible for understanding the Company's energy efficiency programs and the Contractor must coordinate its marketing efforts with those of the Company.

E. CALL CENTER FUNCTIONS

The Contractor will provide toll-free telephone access located within the United States for all persons who call a dedicated demand management number or are transferred from the Central Hudson Call Center in Poughkeepsie. The Contractor will ensure that its call center is fully staffed and operational by the Program start date. Customer service representatives must provide professional and knowledgeable support, often being the only point of contact that the customer requires.

Customer service representatives must be available Monday through Saturday (8 a.m. to 8 p.m. ET). Multi-lingual services shall also be made available to customers. Staffing levels and hours of coverage will be adjusted to meet Program needs or as other factors affecting call volumes and times warrant. After-hours callers must be greeted by an automated response that will provide the website address, normal business hours, allow callers to leave messages, and provide an e-mail address. The website will allow customers to request a call back. These messages must be returned on the following business day. Bidders may offer alternate recommendations for the Company's consideration.

Customer service representatives will actively engage with customers, answer questions about programs, transfer calls to Central Hudson, screen customers and determine eligibility and energy savings potential, assist customers during the enrollment process, and update customers on the status of their installation. Bid proposals must also describe complaint and claims resolution processes and the resources and systems the bidder proposes to devote to supporting the call center activity.

Internal quality assurance audits will be conducted by listening in on randomly-selected calls. The Contractor will regularly maintain defined call center metrics, including abandonment rate, service level and amount of escalated calls. These call center metric reports will be regularly delivered to Central Hudson.

F. EQUIPMENT INSTALLATION

The Contractor is responsible for the inventory, installation, inspection, testing, maintenance, and removal (if applicable) of any device or equipment installed by the Contractor on customer premises. Background checks of Contractor employees entering customer homes shall be conducted. The Contractor will conduct random, post-installation field inspections of a minimum of 10% of the facilities within one week after the installation.

G. EVENT ASSESSMENT

The Contractor is responsible for calculating event results and conducing event analysis after each event notification issued by the Company. The Contractor will also be responsible for preparing and providing reports of event results and analysis to Central Hudson in a format approved by the Company.

The Contractor is responsible for contacting customers through multiple channels including phone calls, text messages, app messaging and e-mail, as needed, to reduce their energy usage when called upon by Central Hudson. Failure to produce the required load reduction may result in reduced incentives or an associated penalty. The Contractor will be responsible for verifying the load reduction achieved during the curtailment period.

Central Hudson will make reasonable efforts to notify the Contractor on a day-ahead basis if a load reduction is necessary. Customers may be called upon to participate for a period of 4 to 8 hours per day.

H. DATA AND TRACKING

The Contractor must provide comprehensive data tracking and management for all information required for program metrics, key performance indicators, and regulatory reporting in addition to performing process and impact evaluations. Program data should be available to utility staff through a web-based portal or similar access point. This portal should give utility staff the ability to run standard and custom reports to meet all data needs. To avoid data breaches and accompanying legal, financial, and reputational harm, information must be secured through: A data storage facility, which includes:

- Documentation demonstrating that the data center is certified according to latest service organization reporting standards
- Processes/capabilities to ensure appropriate physical back-up, environmental controls, and 24/7-controlled access

- Information security, data breach and disaster recovery protocols
- Secure data storage, transfer, and disposal standards
- Data storage location cannot be outside of the United States
- Malware security
- Identity and access management control policies, both physical and electronic
- Detection, monitoring, and logging for the Company's operational support tools
- Controls vetted by independent third-party auditor, including formal certifications that The Company complies with Federal or international data privacy standards related to the security of energy and personal date
- Provide audit reports upon request

I. PLAN AND TIMELINE TO PERFORM

The Contractor must provide assurances that they will successfully implement the program by May 2015. The RFP response should describe the planned allocation of resources in order to achieve timely start up to cover the designated areas. An implementation schedule is required in the RFP response, as is a list of start-up resources to be utilized. The minimum number of full-time employees or full-time equivalents that will be dedicated to this Program must also be included. Contractors must provide a timetable with stated milestones to successfully commence field work on a specific date in May 2015. The RFP must also include information regarding office location(s) and equipment staging techniques to support the timely management of the Program.

J. INVOICING

Central Hudson will pay the Contractor for all services rendered to execute the Program, including payments for customer incentives, if any. Under no circumstances will the Company pre-fund any account as an advance for services rendered and/or customer incentives. Any payments to the customer will be made by the Contractor to the customer. The Contractor shall identify its preference for billing and invoicing within a framework that meets Central Hudson's requirements described in this RFP.

Only qualified companies committed to providing all of the previously stated services will be considered for the contracted services. Bidders are not guaranteed award of contract as a result of participating in this RFP process.

III. PROPOSAL REQUIREMENTS

Proposals to achieve the MW reductions described in **Table 1** by the dates specified should contain the following information and be formatted as described below. Adherence to these instructions for proposal content and format will be a factor in the evaluation of proposals.

A. EXECUTIVE SUMMARY

A description of the business, company history and other pertinent information shall be provided. Additionally, an overview of the Contractor's qualifications to perform the work described in this RFP shall also be provided.

B. STATEMENTMENT OF KNOWLEDGE, EXPERIENCE & REFERENCES

- Provide a summary of key employees' qualifications, technical training, licensing and certifications to provide program services. Upon request provide resumes and/or work experience for the field staff and program managers acting as key points of contact for customers.

- Provide at least two (2) descriptions of completed demand management projects. Included should be a brief description of the project, results achieved and client contact information should be included.
- Provide a list of at least three (3) business references for which your company has been contracted to perform program management of demand side management services.

C. RESPONSE TO THE SCOPE OF SERVICES

Provide a description of services proposed to meet the requirements set forth in **Section II: Scope of Services**. Program schedule and milestones by quarter to achieve the MW reductions by dates specified in **Table 1** should also be provided.

D. MARKETING MATERIALS

Provide marketing samples from a recent demand management program.

E. CALL CENTER FUNCTIONALITY

Please provide an example of a call center metrics report currently used for a comparable utility program. Weekly and cumulative reports shall be submitted to the Company for review.

F. DATA SECURITY AND TRACKING

Describe the security capabilities of your program software including encryption, login access rights, database security, audit log, etc. Explain how the system allows authorized users to access data and content via the Internet. Describe the system architecture and measures that provide security against external attacks on customer data. Identify how data will be protected and backed up to address unforeseen events that may destroy or corrupt customer and work management data. Contractor is required to complete the cloud security questionnaire provided by Central Hudson.

G. PRICING

Bidders must complete and return pricing information in the identified categories in **Attachment 1: Pricing & Commitment**.

H. ASSUMPTIONS

Include a description of all assumptions used to develop the kW reduction for both residential and commercial customers. Include customer acceptance rates and timeframe in which acceptance will be achieved. State the projected kW reduction per average residential and commercial customer.

I. FINANCIAL STATEMENT

A copy of your company's most recent audited financial statements should be included. The financial stability of the responding bidder will be considered when evaluating all proposals submitted. If your financial statements have not been audited by an independent auditor, then they should be accompanied by a signed representation from the Chief Financial Officer of the company noting that: "The financial statements were prepared in accordance with generally accepted accounting principles and accurately report the financial condition of the company."

J. CONFLICT OF INTEREST

Contractor shall disclose any potential perceived conflicts of interest.

K. LEGAL CLAIMS

Contractor must identify any pending legal or administrative action to which it is a party and any judgments that have been rendered against it. Central Hudson reserves the right to reject any bidder that is party to pending legal action or against which judgments have been rendered, or that has a history of claims against it if Central Hudson believes that these affect the ability of the Contractor to perform.

L. BUSINESS ETHICS STATEMENT

Include a description of your company's business ethics commitment.

IV. PROPOSAL DUE DATES & TIMELINE

A. NOTICE OF INTENT TO BID

Firms interested in submitting a proposal should notify Amanda DiMaso of their intent to bid via email at adimaso@cenhud.com no later than October 20, 2014.

Only those firms or individuals notifying Central Hudson of their intent to bid will be assured of receiving amendments (if any) to the RFP or clarifying statements therewith. Please include contact information for the lead person who will be coordinating the proposal including name, title, affiliation, mailing address, telephone and fax numbers, and email address.

For firms that do not plan to submit a proposal, please notify Central Hudson via the email above of your intent NOT to bid by October 20, 2014, with an explanation of the reason that the firm has chosen not to participate in the bidding process.

Failure of a Contractor to notify Central Hudson of its intent to bid shall not preclude a firm from submitting a proposal by the specified date and will not prejudice its review.

B. SUBMITTAL OF PROPOSALS

Respondents to this RFP must submit five (5) hard copies of their technical and cost proposal to:

Ms. Robin Harbold
Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, NY 12601
Attn: Ms. Robin Harbold
Tel. (845) 486-5333
E-Mail addresses: rharbold@cenhud.com and adimaso@cenhud.com

The electronic copy and hard copies of the proposal must be received by 4:30 PM ET on November 14, 2014 in order to be eligible for consideration. The maximum file capacity is 10 MB. Faxed proposals will not be accepted.

C. PROPOSAL REVIEW SCHEDULE

- Intent to Bid Response Due — October 20, 2014 at 4:30 PM ET
- Email period for Contractor Questions — October 21-26, 2014 at 4:30 PM ET
- Email Response to Questions* — October 30, 2014 at 4:30 PM ET
- Pre-Bid Conference Call — October 31, 2014 at 2:00 PM ET
- Deadline for Proposal Submission — November 14, 2014 at 4:30 PM ET
- Program Implementation Start — February 15, 2015

D. QUESTIONS

Technical questions regarding this RFP should be submitted to Central Hudson Gas & Electric Corporation:

Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, NY
Attn: Amanda DiMaso
Tel. (845) 486-5565
E-Mail address: adimaso@cenhud.com

Questions (as provided by the bidders) and responses will be kept confidential of all identifiable information. Contractor's contact information will not be displayed on the questions and answers. All questions and answers will be provided to all bidders who indicated their intent to bid.

Central Hudson will coordinate the conference call procedure for the Pre-Bid Conference Call on October 31, 2014. Questions arising on the Pre-Bid Conference Call that cannot be answered at that time will be addressed in a subsequent email

to bidders who indicated their intent to bid, as soon as possible after the completion of the conference call.

E. SELECTION

Central Hudson maintains the sole discretion to select the winning bidder(s). Factors Central Hudson will consider include, but are not limited to, price, response time capabilities, response reliability reporting capabilities, security, and experience. A Proposal made in accordance with the RFP does not guarantee selection as a winning bidder(s).

Attachment 1: Pricing and Commitment to Achieve MW reduction goals by Dates Specified in Table 1

Prospective Contractor Name: _____

Category	Year 1	Year 2	Year 3	Year 4	Cumulative	Items Included in Budget*
Administration						
Marketing/Consumer Outreach						
Implementation						
Hardware						
Software						
Incentive						
Measurement & Verification						
Total						

* Describe items that are included in your budget categories (i.e. Administration includes call center office expenses, staffing, etc.)

Central Hudson DR RFP Response to Questions

1. Please provide area coverage information for the feeders to allow us to understand the geographic distribution of the program by substation or feeder.

    - Please see the attached "Demand Response Locations" pdf

2. Central Hudson reports that the overall AC penetration is 32% overall. Please breakdown AC penetration by area.

    - The questionnaire that was filled out by customers did not capture location so the 32% is only applicable to the entire service territory and cannot be broken down more granularly

3. What is the percentage of single family vs. multi-family sites on the feeders? Is the 32% AC customer penetration the same for both classes of consumer?

    - In the designated areas the majority of customers are residential single family homes. We have few multi-family buildings, however they are coded residential and have separate meters for each unit

4. What is the percentage of AC penetration at Small Business Customers (<100kW)?

    - We only have the AC penetration data for residential customers

5. Please provide information on the load curves for the substations / feeders in the program. When are substations over loaded? How many hours in the summer season?

    - The load in the identified regions does not currently exceed their peak capacity, but is anticipated to do so. The targeted demand response project was developed to avoid exceeding the peak load above our risk criteria by the required dates identified in the RFP.

6. Please provide information on the type of Medium (101-300kW) and Large (>300kW) Commercial & Industrial customers (business type, etc.). How many are in the existing Central Hudson DR programs? Do you have an estimate on the number of customers that are in third party DR programs?

    - See sector-specific tables in question 21. Regarding the second question, Central Hudson does not have any existing demand response offerings. This information is not readily available. Central Hudson reached out to the NYISO ICAP SCR Registration Services department and found that participant information is considered confidential and cannot be shared with the public or utilities

7. Please provide information on your distribution SCADA system (Solution provider, Name of Product, Version and Date) and the level of substation metering (frequency of readings, units measured, etc.) of the feeders defined in the program.

- Central Hudson has systems monitoring both distribution and transmission substation facilities. The systems include a GE XA-21 (PowerOn Reliance) EMS and an Instep eDNA historian. This system reads and stores values on an approximate 6-second cycle. The feeders and systems proposed for the Demand Management program are as follows:

DM Defered Project	**System**	**Values**	**Note**
New Merritt Park Feeder	Merritt Park 8063 & 8066 Circuits	Each Circuit has Substation MW & MVAr metering	
Ohioville Expansion	Ohioville Substation	Substation Transformer MWs & MVArs. Addition of metering for this substation's 6 distribution circuits is planned for 2015.	Two transformers with totalized metering
Phillips Road Substation	Fishkill Plains Substation	6 distribution circuits each with Substation MW & MVAr metering. Substation Transformer MWs & MVArs metering	Two transformers with totalized metering
	Shenandoah Tr. 7	Substation Transformer MWs & MVArs	
NW Area Reinforcement	Northwest Area	Transmission level MW & MVAr metering on three transmission sources from three separate substations, MW & MVAr metering for 2 Central Hudson owned generators. Metering for one customer owned generator is not available in real time.	Some of the individual feeders in this area have MW & MVAr metering, but not all.

8. Does Central Hudson monitor reclosers, automated switches, regulators, or capacitor bank devices outside the substation? If yes, what type of communication network is used?

- Yes, Central Hudson has all of the above components, and any which are electronic with the exception of some voltage regulators are remotely monitored. A Sensus cellular communications network is currently employed for these

devices. Central Hudson will be transitioning to an ABB Tropos radio system with fiber/microwave backbone for 80% of our service territory over 5 years, beginning in 2015

9. In Table 1 (Targeted Areas), please clarify in what programs "Participants in EE" are enrolled, and what is indicated by the percentage column

    - The 'Participants in EE' column in the table indicates how many customers along the designated circuit have participated in any of our energy efficiency programs (excluding the Home Energy Reports behavioral program). The value in the '% of Customers in EE' column is found by using the value in 'Participants in EE' column (as your numerator) then adding the residential and commercial customers along a particular circuit (which gives you your denominator) and dividing (i.e. for circuit 5021 the formula is 160/(1,997+431) = 6.59%)

10. Please clarify both the MW reduction requirements and required timeline for the Ohioville and Shenandoah/Fishkill Plains service areas.

    - "Milestones of 2 MW reductions are required in each area by May 2016. At that point the program will be evaluated to determine if there is sufficient potential to meet the final goals outlined in the table (Ohioville – 4 MW total, Shenandoah/Fishkill Plains – 5 MW total). The Northwest Corridor follows similarly with 5 MW by May 2017 and 10 MW total by May 2019. In addition, 0.5 MW reduction shall be achieved on the Merritt Park Substation feeders by May 2016. At that point the program will be evaluated to determine if there is sufficient potential to meet the final goal outlined in the table (1 MW by May 2019)."

11. In Section II.I. Plan and Timeline to Perform, CHGE states "the contractor must provide assurances that they will successfully implement the program by May 2015" and in Section IV.C. CHGE states the program implementation start will be February 15, 2015. Will CHGE please clarify what is expected to be delivered on both 2/15/15 and in May 2015

    - February 2015 we want to have a signed contract in place
    - May 2015 we want to begin signing up customers and have all logistics in place to begin full implementation

12. Will CHGE consider managing an internal call center to handle calls if the contractor thoroughly trains Customer Service representatives on the associated equipment and software?

    - No, but we are not opposed to the winning bidder subcontracting this required service

13. In Section II.G, CHGE states that "Failure to produce the required load reduction may result in reduced incentives or an associated penalty. The Contractor will be responsible

for verifying the load reduction achieved during the curtailment period." Please clarify if the reduced incentives or associated penalty will be incurred by the Contractor, or if the Contractor is solely responsible for accurately measuring and verifying associated load reduction with each event.

- The Contractor will incur either reduced incentives or associated penalties as warranted. The Contractor will be responsible for measuring and verifying the associated load reduction when an event is called. The Contractor will be required to manage the customers who participate and their level of engagement

14. Can CHG&E quantify the costs that will be avoided from the demand management program deferring or avoiding the load-growth related infrastructure?

    - This information is confidential.

15. The RFP says demand reduction is needed for 4-8 hours a day. Approximately how many days a year would demand reduction be required? Can CH&G estimate the total hours?

    - Based on the previous 5 years, we estimate approximately 2 days/year (see also response to Question 16). This days/year value likely would increase in future years. Also, it does not include any program tests

16. What would be the trigger for dispatching a demand reduction event? For example, the Con Ed Commercial System Relief Program is dispatched when Con Ed is at 96% of peak load or higher.

    - Central Hudson will trigger an event when the system peak load will be above 1150 MW, but will also consider the localized impact of the peak. In addition, events may be triggered for other purposes such as testing or contingency planning during maintenance

17. During a peak period, will demand reduction be needed in some substation areas but not others? Or will it be all or nothing?

    - Demand response could be needed on some or all areas during any given event

18. Are the MW numbers listed on Page 5 of the RFP for each substation area the minimum amount of demand reduction that must be obtained within each specific substation area? Or can demand reduction in one substation area benefit another substation area, so that as long as there are 20 MW obtained across all substation areas, CHG&E's needs will be met?

    - The MW values are minimum values for each specific area. Central Hudson needs the goals of MW reduction to be on each particular area (as identified)

19. Does CHG&E know what percentage of its customers >100 kw participate in the NYISO SCR demand response program? If so, what is it?

    - This information is not readily available. Central Hudson reached out to the NYISO ICAP SCR Registration Services department and found that participant information is considered confidential and cannot be shared with the public or utilities

20. In evaluating bids, will CHG&E consider benefits that don't include the avoided cost of the distribution infrastructure? For example, if as part of the contract, a demand response provider promises to enroll the customers it finds as part of the CHG&E program into the NYISO SCR program, that would result in significant capacity savings for CHG&E. Would CHG&E weigh that as a benefit?

    - It should be handled separately and the decision should reside with the customer

21. Can CHG&E provide a breakdown of the composition of the commercial market (in other words, of the non-residential portion of the market)? For instance, could peak demand, total annual consumption, and number of accounts by segment (e.g. education, healthcare, industrial, etc) be provided for each substation?

    - See tables below, Note that the total summer peak demand (kW) are non-coincident summer peaks over the months June-August

Commercial Categories

Commercial Category	**Includes**
AGRICULTURE, FORESTRY, FISHING	Farms, Veterinary, Landscape & Horticultural
CONSTRUCTION	
FINANCE, INSURANCE & REAL ESTATE	
MANUFACTURING	
MINING	Metal ores, Stone, Sand & Gravel
MISCELLANEOUS	Community Residences, Churches & Religious Organizations, Commercial Mobile Homes, Commercial Apartments
PUBLIC ADMINISTRATION	Municipal Buildings, Federal & State Buildings
RETAIL TRADE	
SERVICES	Motels, Hotels, Laundry, Camps, Hospitality, Auto Repair, Parking Garages, Movie Theaters, Amusement Parks, Nursing, Medical & Dental, Child Care, Museums
TRANSPORTATION & PUBLIC UTILITIES	Railroads, Bus Terminals, Warehousing, Trucking, Postal Service, Airports, Water Treatment, Telephone/Data
WHOLESALE TRADE	

Area #1: Ohioville

Commercial Category	Total Usage (kWh)	Total Summer Peak (kW)	Category Quantity
AGRICULTURE, FORESTRY, FISHING	2,594,463	876.9	33
CONSTRUCTION	393,776	138.3	8
FINANCE, INSURANCE & REAL ESTATE	4,554,174	1,122.3	32
MANUFACTURING	1,214,567	414.3	10
MISCELLANEOUS	2,878,682	848.4	156
PUBLIC ADMINISTRATION	6,388,744	1,834.6	66
RETAIL TRADE	18,962,770	4,604.3	311
SERVICES	15,570,313	3,523.8	413
TRANSPORTATION & PUBLIC UTILITIES	2,037,489	262.3	87

WHOLESALE TRADE	1,099,861	416.7	20
Total	**55,694,839**	**14,041.9**	**1,136**

Area #2: Merritt Park

Commercial Category	Total Usage (kWh)	Total Summer Peak (kW)	Category Quantity
AGRICULTURE, FORESTRY, FISHING	80,847	39.3	7
CONSTRUCTION	97,811	41.4	9
FINANCE, INSURANCE & REAL ESTATE	674,910	117.4	7
MANUFACTURING	182,390	35.5	9
MINING	45,120	1,324.3	1
MISCELLANEOUS	1,115,766	150.8	68
PUBLIC ADMINISTRATION	1,380,413	323.1	21
RETAIL TRADE	8,077,339	1,995.8	143
SERVICES	3,806,319	846.8	155
TRANSPORTATION & PUBLIC UTILITIES	1,842,627	202.1	70
WHOLESALE TRADE	104,407	54.1	5
Total	**17,407,949**	**5,130.6**	**495**

Area #3: Shenandoah and Fishkill Plains

Commercial Category	Total Usage (kWh)	Total Summer Peak (kW)	Category Quantity
AGRICULTURE, FORESTRY, FISHING	627,536	185.3	19
CONSTRUCTION	573,158	92.3	25
FINANCE, INSURANCE & REAL ESTATE	1,726,836	473.7	78
MANUFACTURING	5,335,230	1,759.9	44
MINING	402,366	376.2	1
MISCELLANEOUS	7,435,511	181.0	376
PUBLIC ADMINISTRATION	5,779,913	2,126.7	104
RETAIL TRADE	18,471,740	4,586.8	568
SERVICES	7,332,404	2,046.7	424
TRANSPORTATION & PUBLIC UTILITIES	5,575,836	686.7	219
WHOLESALE TRADE	669,328	165.7	39
Total	**53,929,858**	**12,681.0**	**1897**

Area #4: NW Corridor

Commercial Category	Total Usage (kWh)	Total Summer Peak (kW)	Category Quantity
AGRICULTURE, FORESTRY, FISHING	2,027,524	496.2	100
CONSTRUCTION	4,339,669	1,116.3	77
FINANCE, INSURANCE & REAL ESTATE	5,141,017	1,083.1	95
MANUFACTURING	38,906,667	11,024.6	107
MINING	13,412	-	1
MISCELLANEOUS	19,052,807	1,256.9	1,161
PUBLIC ADMINISTRATION	30,535,016	7,958.4	481
RETAIL TRADE	51,674,011	12,207.7	979
SERVICES	47,308,190	14,040.7	2,620

TRANSPORTATION & PUBLIC UTILITIES	12,804,531	1,674.7	804
WHOLESALE TRADE	2,928,282	824.5	93
Grand Total	**214,731,126**	**51,683.1**	**6,518**

22. Can CHG&E provide a map of where the circuits referenced in the RFP are located, including the location of the circuits that in general make up the NW Corridor?

    - Please see attached "Demand Response Locations" pdf

23. The RFP states that CHG&E is looking for a single vendor to address the system needs identified. Would CHG&E consider working with multiple vendors if such a solution met your selection criteria better?

    - Yes, Central Hudson will consider working with multiple vendors. However, one party must be designated as the "Contractor" and execute a contract with "Central Hudson", with all other parties acting as subcontractors to that Contractor.

24. Timeline to launch program: CHGE has stated Program Implementation will begin February 15th, 2015. Recognizing the importance of meeting the first milestone, would Central Hudson be open to working collaboratively to provide an earlier start date?

    - Yes, as long as we can reach a signed contract before then

25. Can you please provide zip codes served by the substations

Ohioville		**Merritt Park**	**Shenandoah**	**Fishkill Plains**	**NW Corridor**			
10524	12518	10516	10512	10512	12015	12412	12453	12498
10916	12520	10524	12413	10524	12023	12413	12457	12508
10928	12525	10566	12458	12401	12042	12414	12460	12518
10930	12528	10579	12477	12443	12046	12415	12461	12524
12045	12533	10930	12508	12477	12051	12418	12463	12525
12143	12538	12401	12524	12484	12055	12419	12466	12528
12401	12542	12428	12528	12494	12058	12422	12467	12533
12413	12543	12508	12531	12508	10283	12423	12468	12545
12414	12545	12524	12533	12524	12087	12425	12469	12546
12419	12547	12533	12538	12528	12120	12427	12470	12549
12428	12548	12540	12553	12531	12122	12428	12473	12550
12431	12550	12545	12561	12533	12124	12429	12477	12553
12432	12553	12546	12582	12553	12135	12431	12479	12561
12440	12561	12582	12590	12580	12143	12432	12480	12569
12446	12571	12589	12601	12582	12147	12433	12481	12571
12461	12572	12590	12603	12586	12163	12436	12482	12572
12472	12580			12590	12176	12440	12485	12578
12473	12583			12601	12192	12442	12486	12589
12481	12586			12603	12193	12444	12490	12590
12483	12589				12401	12446	12491	12601
12486	12590				12404	12448	12492	12603
12508	12601				12405	12449	12494	12782

12515	12603	12409	12451	12495

26. Please expand on your requirements needed to meet the regulatory reporting requirements as stated in Section H – Data and Tracking, Page 9 of the RFP.

    - This is pending Staff review and approval and will be worked out on a collaborative approach

27. Page 11 of the RFP states, Contractor is required to complete the cloud security questionnaire. Please provide this questionnaire for our review.

    - Please see attached Cloud Security questionnaire document

28. Our proposal will deliver measurable energy efficiency savings, in addition to the MW reductions requested. Will those energy savings count towards program cost effectiveness in our evaluation?

    - Yes, if there are incremental savings that contribute towards our Energy Efficiency goals that we would count those savings.

29. Will proposals that exclusively focus on aggregated commercial load versus aggregated residential **AND** commercial load be considered? In other words, does the successful bidder have a requirement to achieve aggregated 20MW of demand management program participation within defined target areas from both R&C or will an aggregation of 20MW from just commercial resources meet the program requirements?

    - This method would be considered but we would have a preference towards proving our concept across all customer classes

30. What % of the target area R&C CHG&E customers presently have IM's (Interval Meters)?

    - Table 1 in our RFP has >300kW customers in the right most column, at the very minimum those customers have an Interval Meter, however others may as well for instance if the customer is in the a NYISO program

31. Event advance notification? 21 hours… 24 hours?

    - Central Hudson has not decided on the exact advanced timing for event notification however it will be around the timeframe you indicated in your question

32. Minimum and maximum event hour duration?

    - 4-8hrs (per RFP)

33. Test event(s)? How many and when?

- When the summer peak is higher and more frequent, we will not call as many test events, conversely when the peak is less frequent then we may call a few more test events. However, calling too many test events may disengage the customer. The schedule of test events will be determined between Central Hudson and the winning bidder.

34. Maximum # of events per year?

- We cannot give a value of the maximum number of events for a given year. It is dependent upon weather as well as contingency requirements in a given year.

35. Program months per year? Summer only?

- We will only be calling events for this program during the summer months (June, July, August, September). However marketing and customer communication will continue year round

36. Invoicing: To clarify…. The successful bidder will not receive any advance payment prior to the program commencing on February 15, 2015? So a successful bidder will need to ***self fund*** building out the DR program in advance of May 2015 deliverable Ex: Costs associated with hiring additional support personnel… travel associated with CHG&E meetings…creating marketing collateral… train marketing/sales/field/call center personnel… procure equipment/hardware… etc…

- Central Hudson will not pre-fund any dollars for costs incurred by the winning bidder prior to commencing with the demonstration project however these costs can be recouped post-contract signing

37. Is there a budget for the program?

- No, the budget for the program has not yet been finalized.

38. Is there any industrial load?

- Please see the tables in Question 21

39. Would it be favorable to have existing SCR load?

- We would be willing to evaluate and discuss this. It is up to the bidder to work with the customer to consider how the customer could coordinate responding to both parties to the extent that the timeframes do not overlap, or the customer is called upon while already curtailing load for one party.

40. What would be the format for discussing our software package capabilities?

- The company would like to understand the software capabilities of each bidder to determine how it could potentially fit into the REV proceeding as well as Central Hudson's long-term Distribution Management System (DMS) plans. An addendum to the bid has been issued on Tuesday November 4th. To the extent that requires an extension of up to one week to respond to the bid, the company will be willing to consider that.

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Targeted Demand Management Selection Process (CONFIDENTIAL)

Central Hudson Gas & Electric

Prepared by:
Josh Bode, Principal
Alana Lemarchand, Consultant

March, 2015

Key Topics

- Summary of project and key issues
- Analysis of demand management areas
- The selection criteria
- Assessing feasibility
- Comparing resources with different operating characteristics
- Conclusions and next steps

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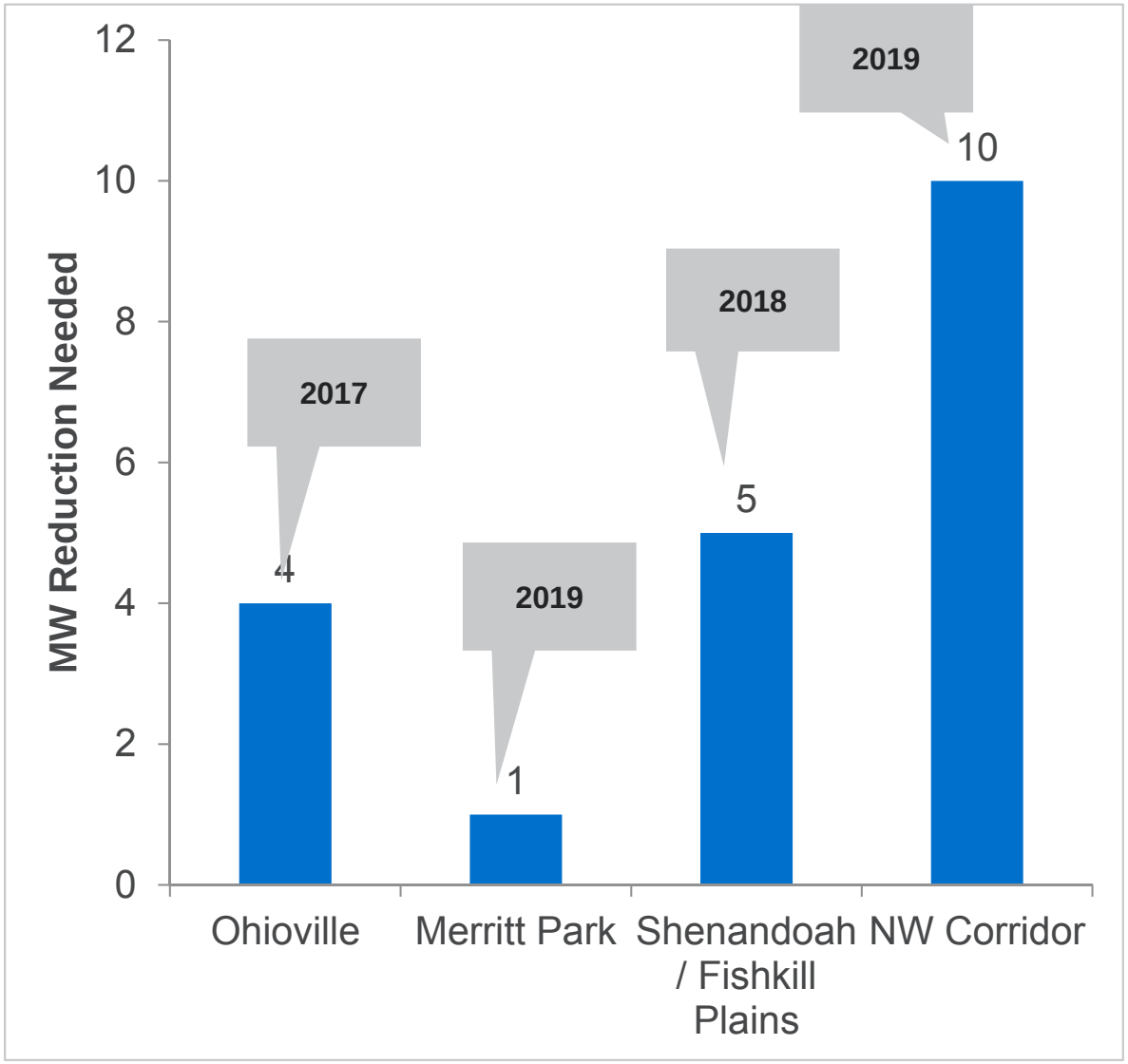
Summary of Project and Key Issues

Central Hudson requested proposals for demand management services for four designated areas



- If successful, the demand could help defer or eliminate the need for load growth-related infrastructure projects expected to occur in the next 4-10 years
- The demand management program will provide significant new information for integration of demand management resources into T&D planning

The RFP provided concise information about each project area

Substation	Circuit	MW Reduction	Date Required	# of Customers		Participants in EE	% of Customers in EE	kW Breakdown of Commercial Customers		
				Residential	Commercial			0-100kW	101-300kW	> 300kW
Ohioville	5021	4	May 2017	1,997	431	160	6.59%	423	6	2
	5022			725	146	44	5.05%	145	1	1
	5023			1,677	388	84	4.07%	366	19	3
	5024			1,167	145	59	4.50%	139	5	0
	5025			120	26	1	0.68%	25	1	0
Merritt Park	8063	1	May 2019	1,160	304	52	3.55%	298	4	2
	8066			1,377	191	37	2.36%	186	3	2
Shenandoah	8071	5	May 2018	1,796	228	72	3.56%	223	3	2
	8072			1,316	241	74	4.75%	238	2	1
Fishkill Plains	8091			1,744	396	102	4.77%	393	3	0
	8092			1,735	50	121	6.78%	50	0	0
	8093			1,386	354	82	4.71%	350	3	1
	8094			2,262	152	140	5.80%	150	2	0
	8095			1,643	341	69	3.48%	340	1	0
	8096			840	136	37	3.79%	136	0	0
NW Corridor *	Multiple	10	May 2019	32,054	6,518	1,024	2.65%	6,428	66	24
Total		**20**		**52,999**	**10,047**	**2,158**	**3.42%**	**9,890**	**119**	**38**

- As part of the Q&A, respondent asked for and received additional detail about the commercial customer mix

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Analysis loads of demand management areas

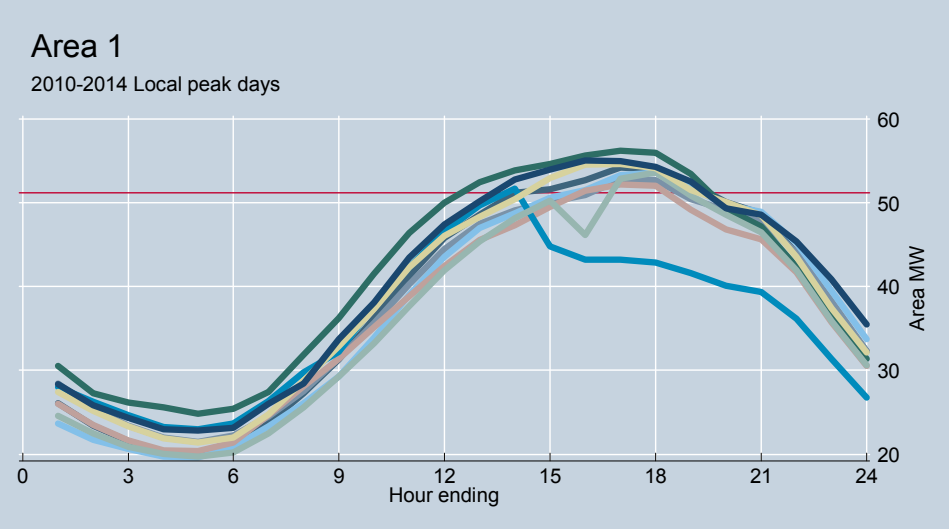
Why analyze DM area loads?

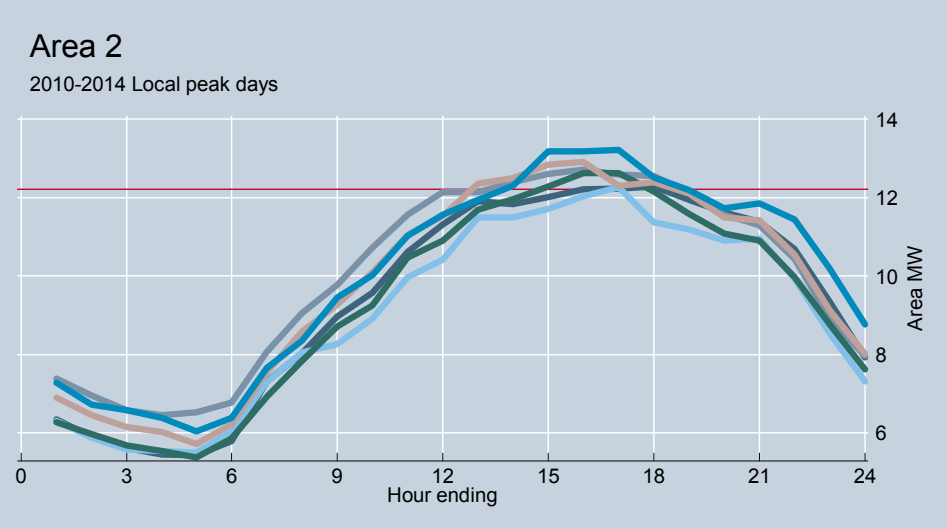
- The characteristics of DM area loads very much affects the types of demand management needed
- The value of DER resources varies based on their operational characteristics and how well they align with the targeted area
  - Is it a flexible resource?
  - Is it inherently tied to a specific load shape?
  - Does it have limitations on availability, duration of sustained response, maximum dispatch hours, frequency of dispatch? Are the limitations material or inconsequential?
- Useful for understanding the levels of penetration that can be realistically attained

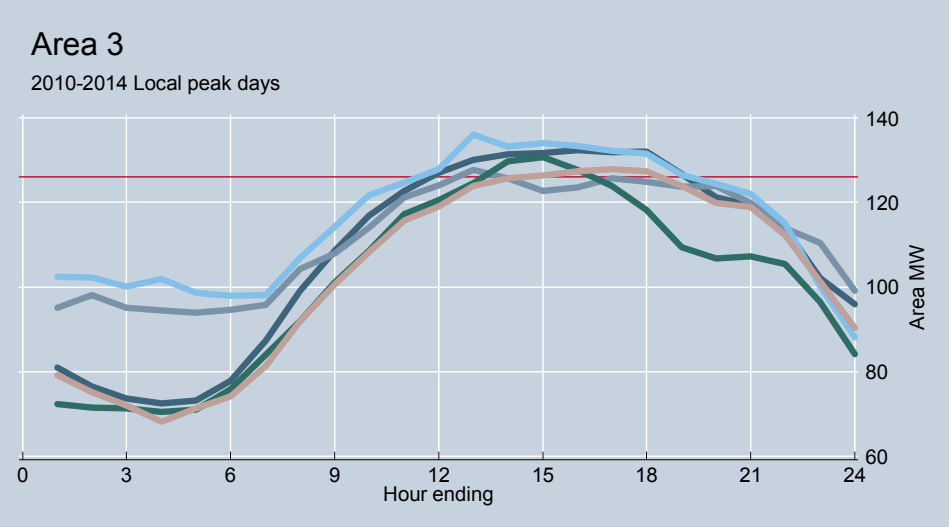
Key questions

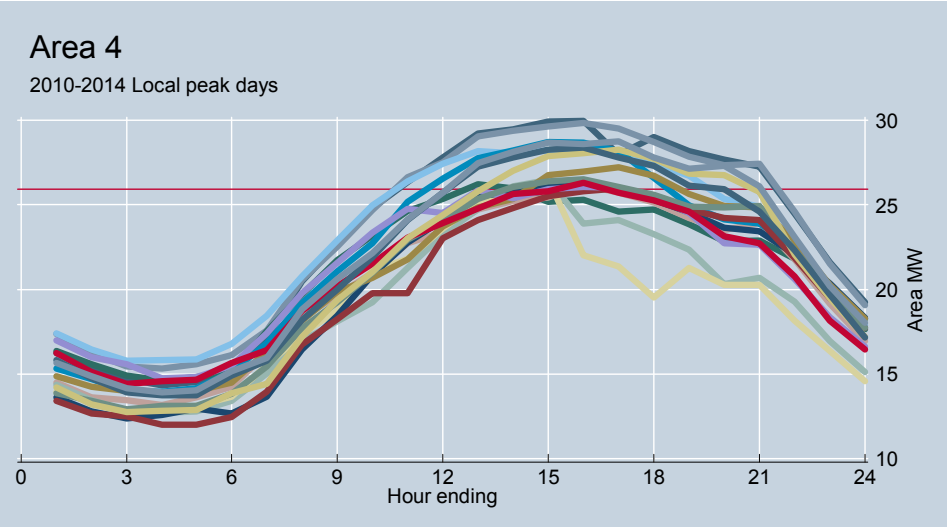
- When do project area loads peak?
- How concentrated are the project area loads?
- When are peaking loads concentrated?
- Do project area loads peak on the same dates and times?
- Do project areas loads peak when Central Hudson loads peak?
- How weather sensitive are total project loads?
- What are the cooling loads in each project area?
- How are cooling loads disaggregated between customer segments?

When do project area loads peak?

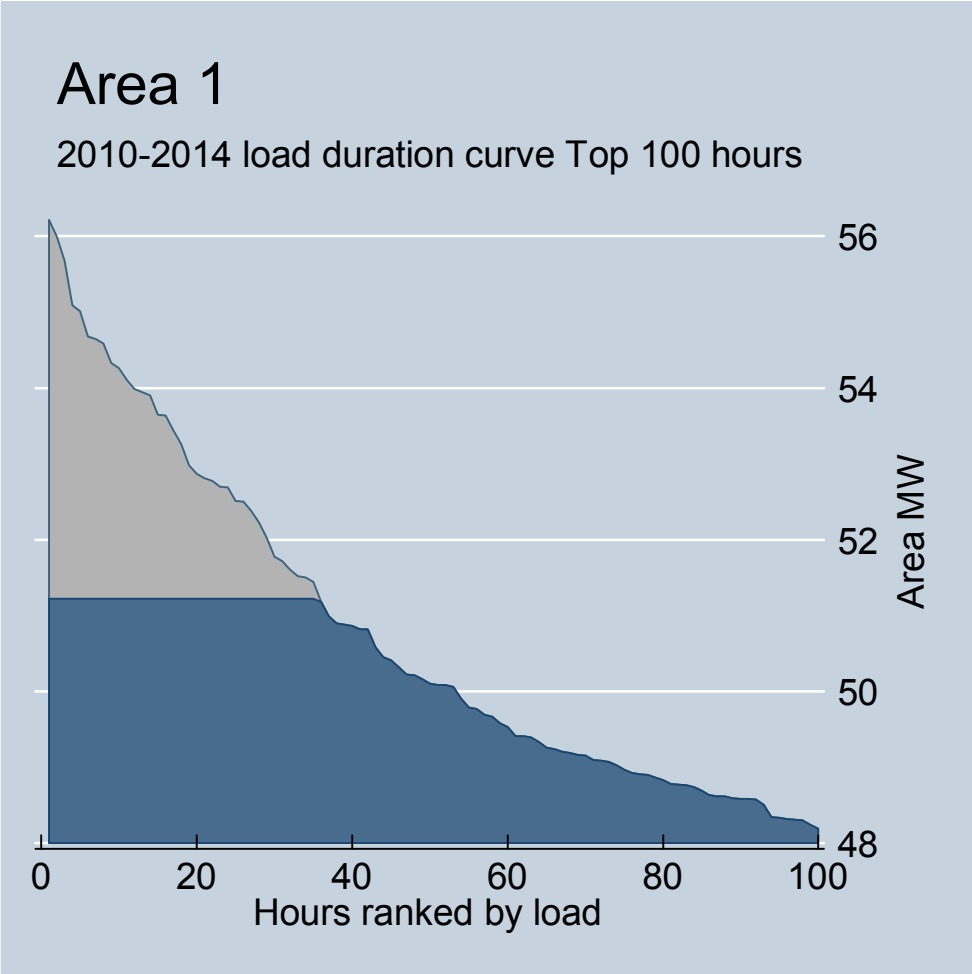


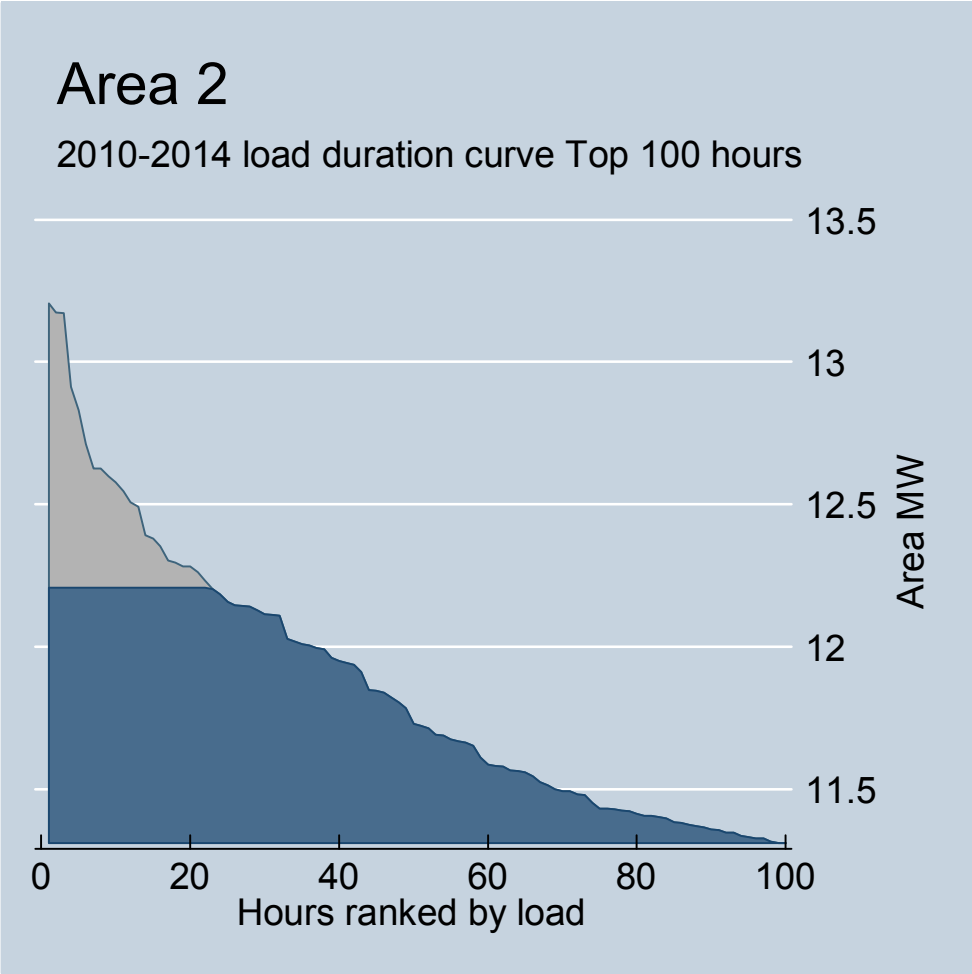




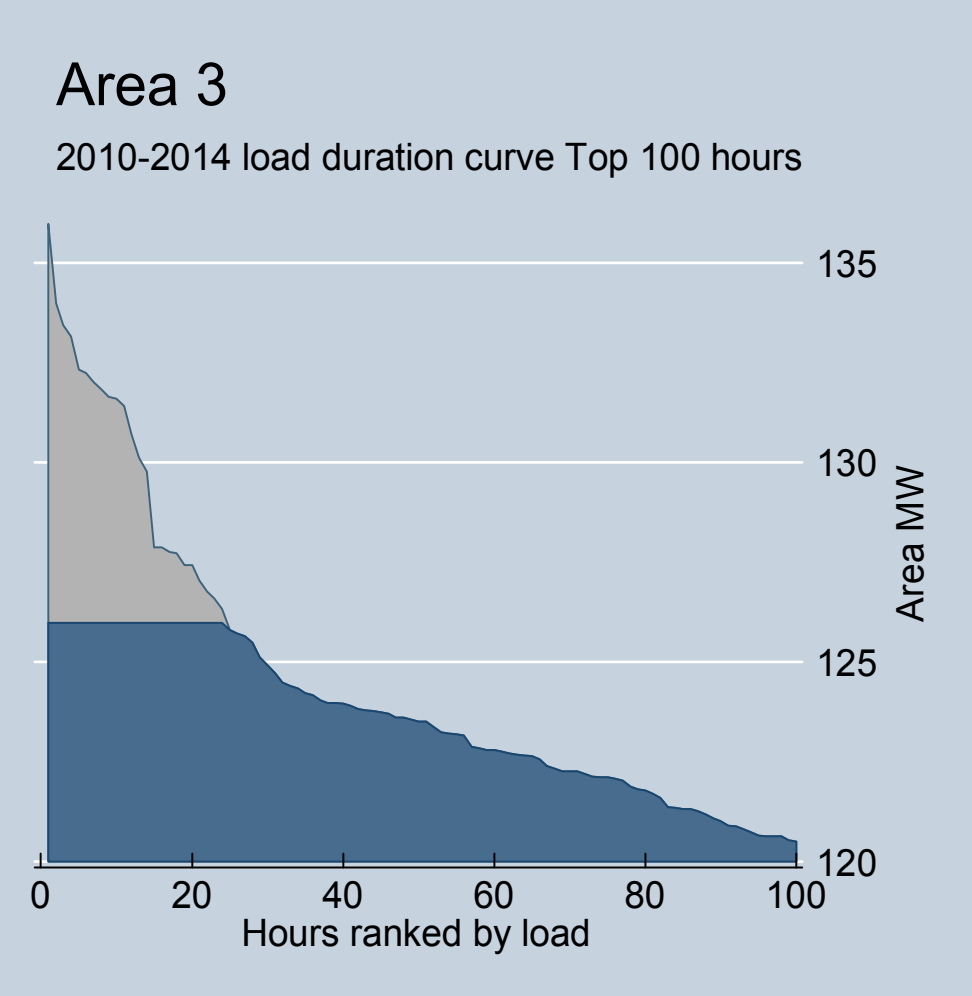


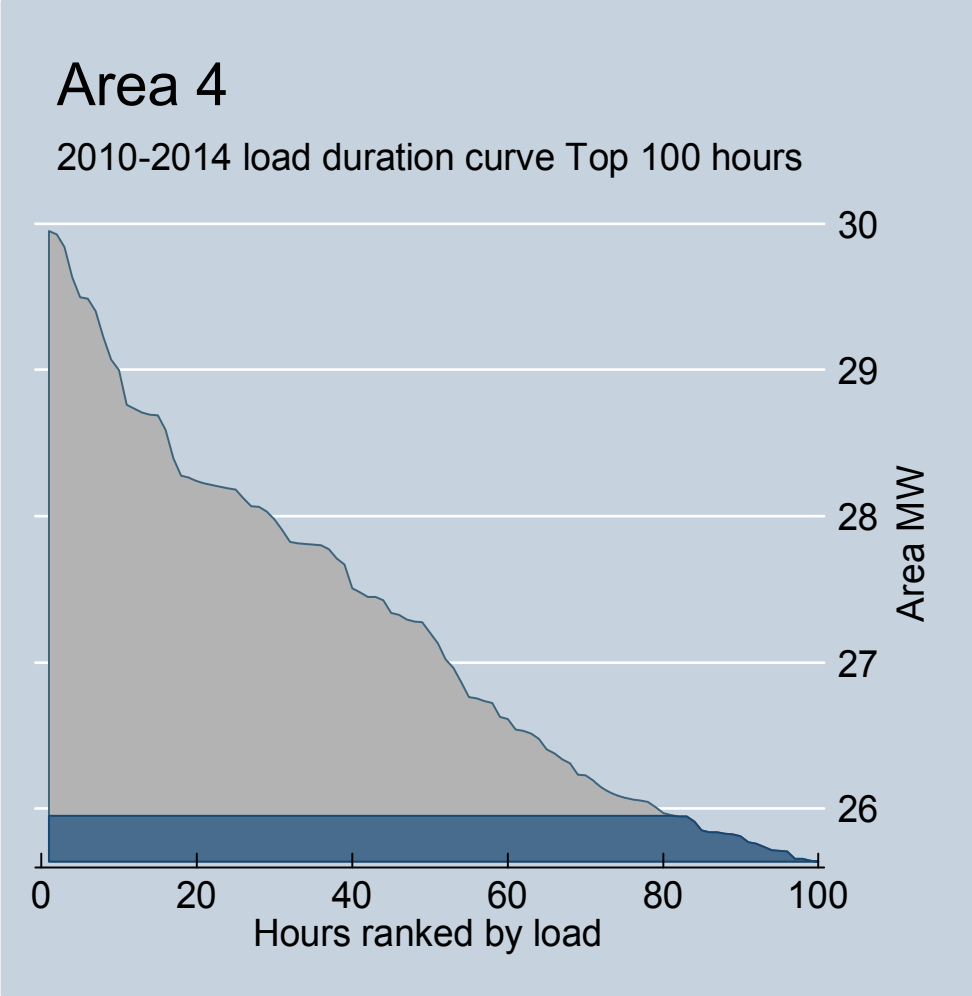
How concentrated are the project area loads? (1 of 2)



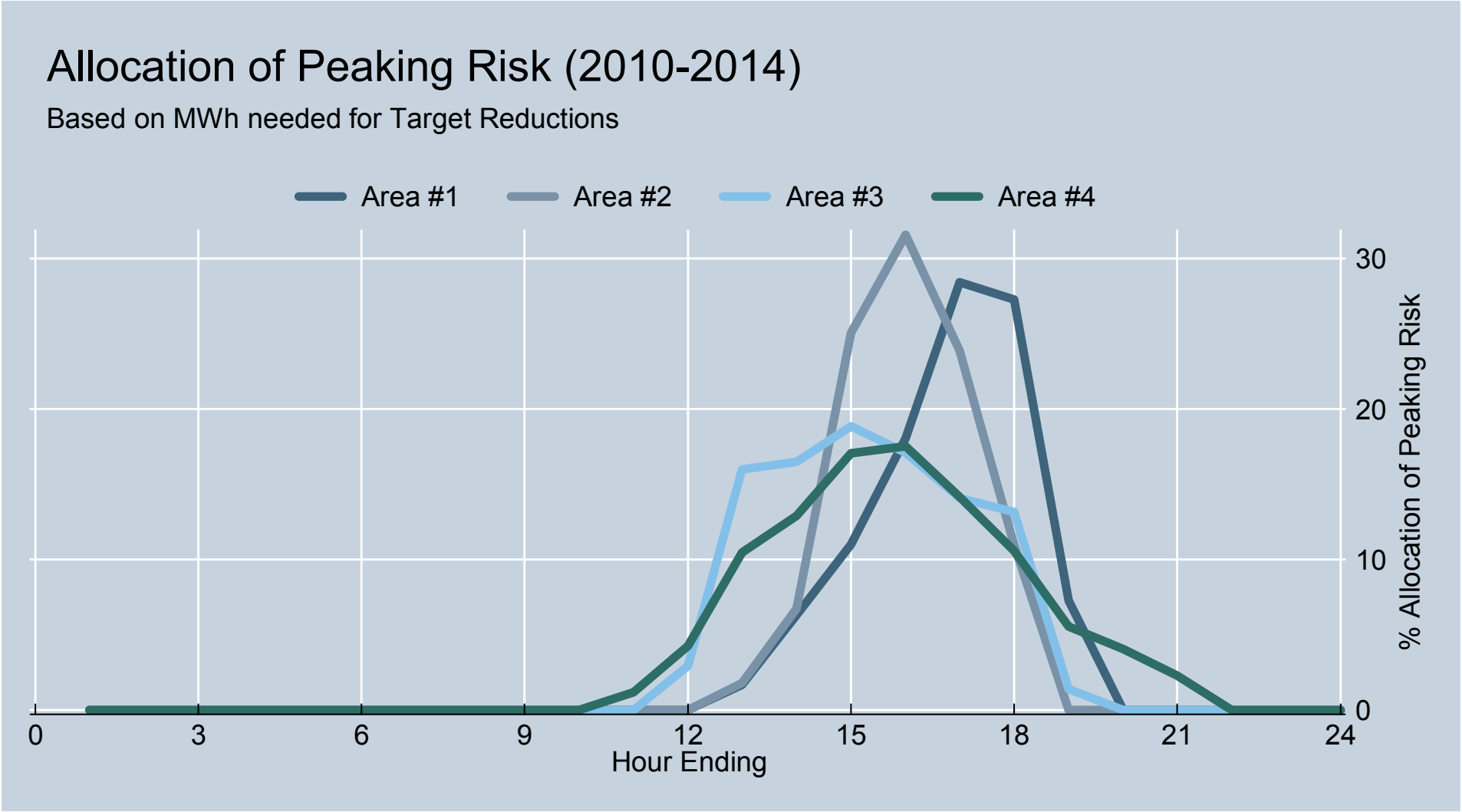


How concentrated are the project area loads? (2 of 2)

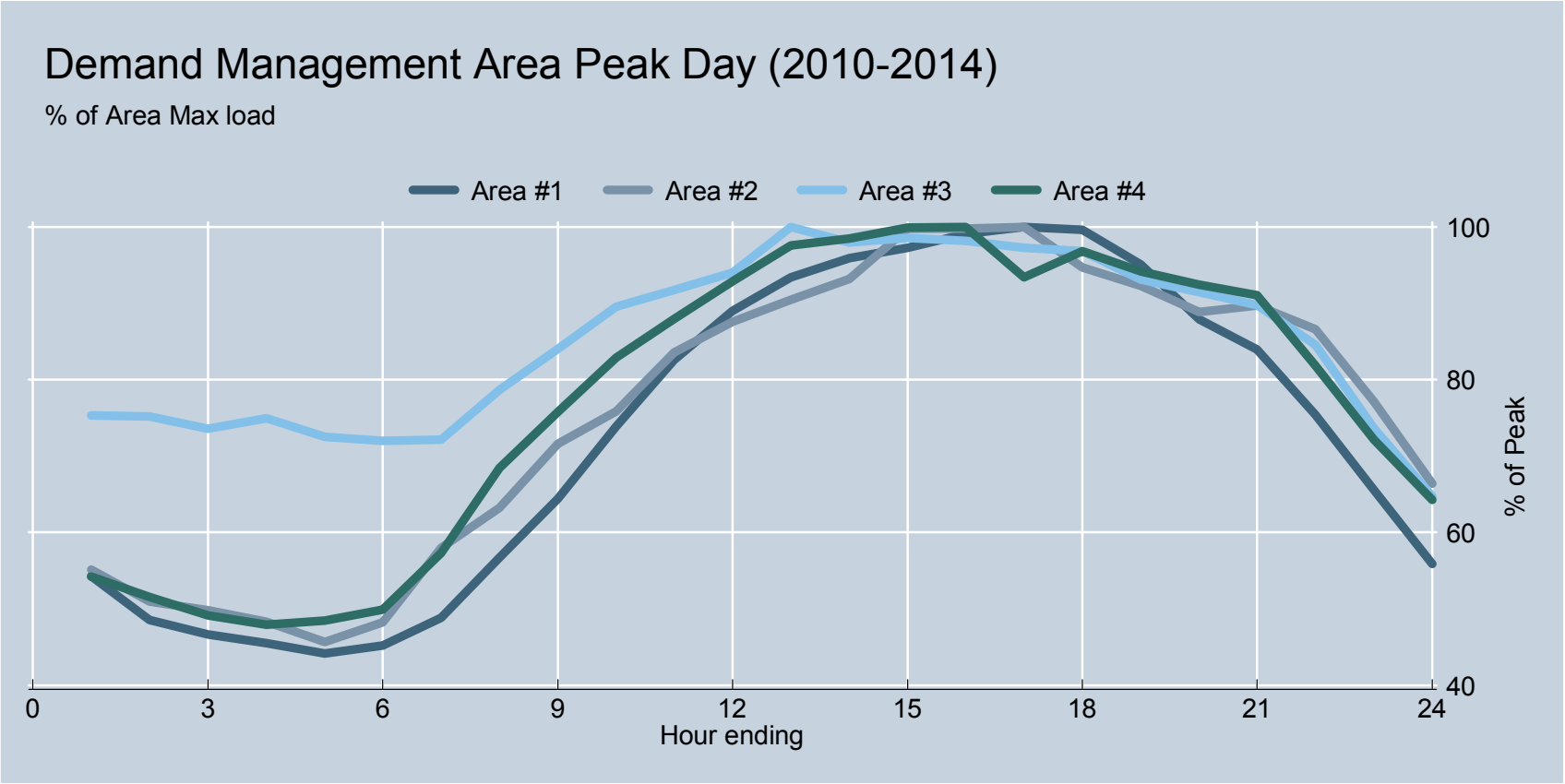




When are peaking loads concentrated?

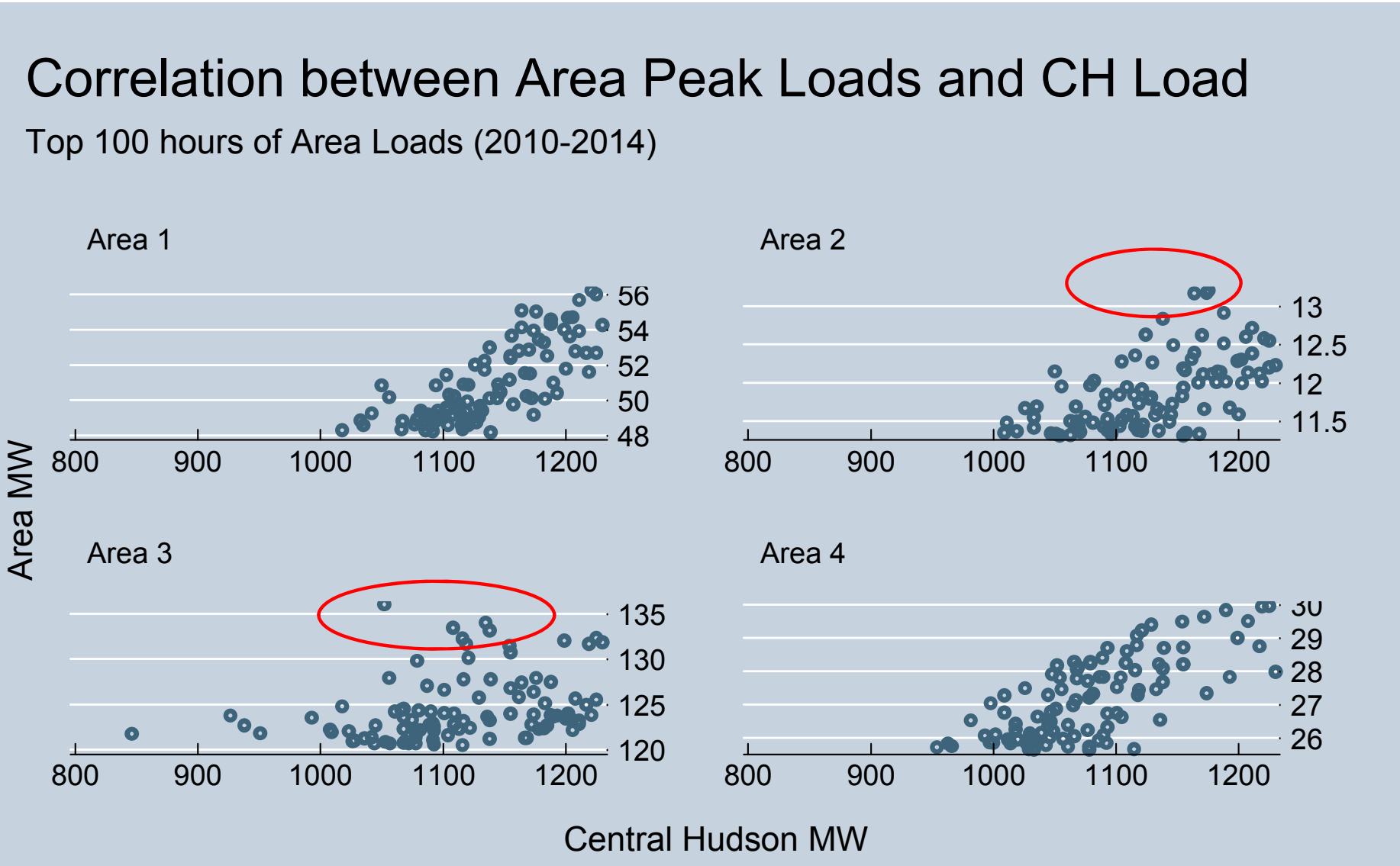


Do project area loads peak on the same dates and times?

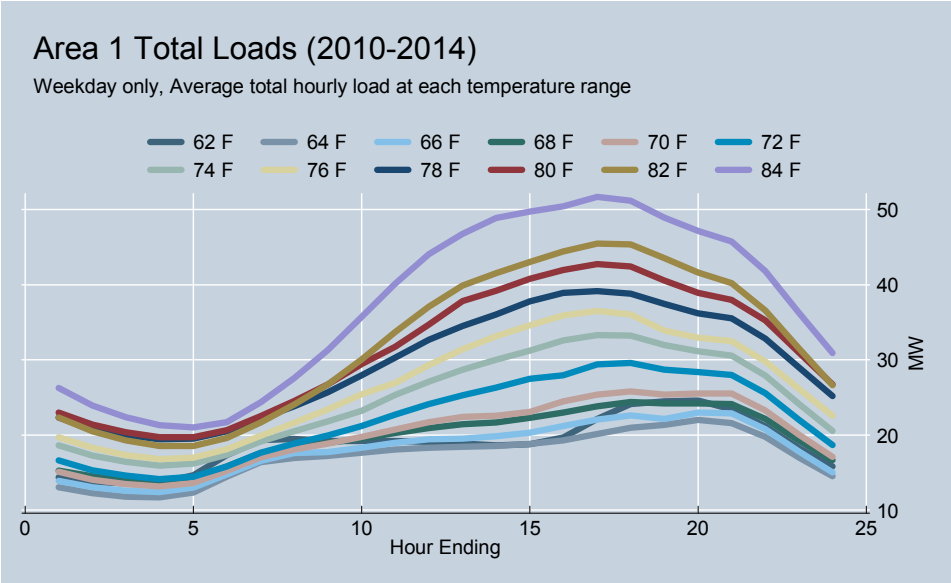


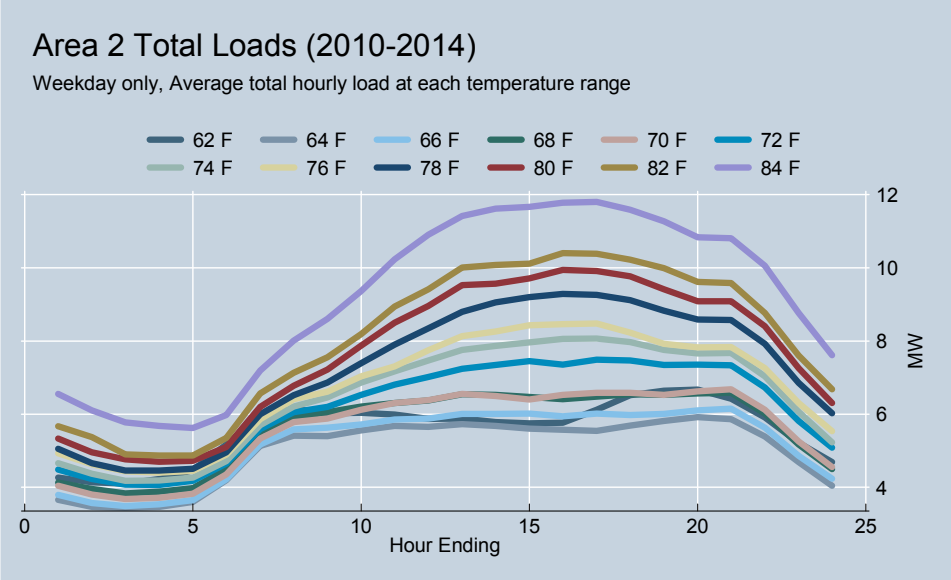
Area	Date	Hour Ending	MW	Daily Max Temp
#1	Friday, July 22, 2011	17	56.2	102
#2	Friday, July 19, 2013	17	13.2	97
#3	Thursday, July 08, 2010	13	136.0	88
#4	Tuesday, July 06, 2010	16	30.0	101
System Load	**Tuesday, July 06, 2010**	**17**	**1,230.0**	**101**

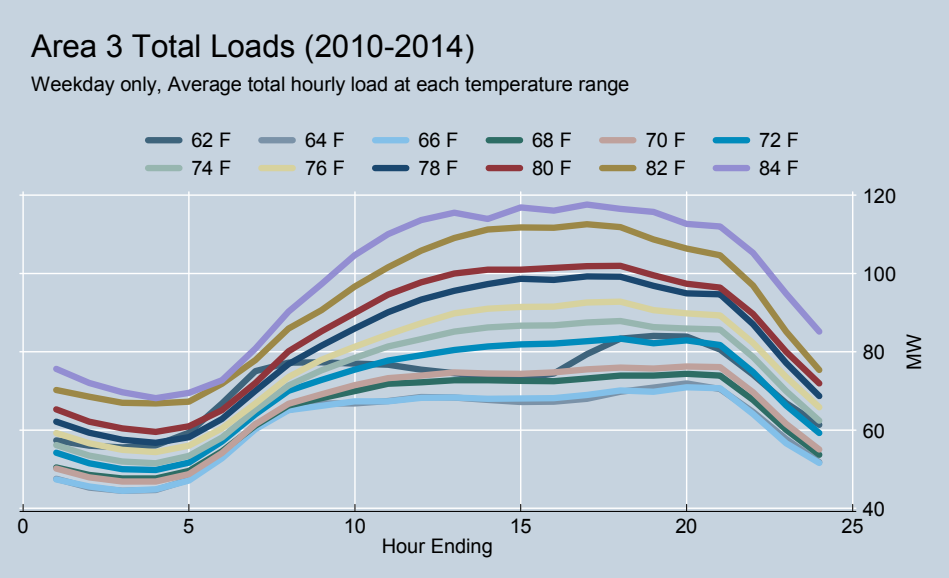
Do project areas loads peak when Central Hudson loads peak?

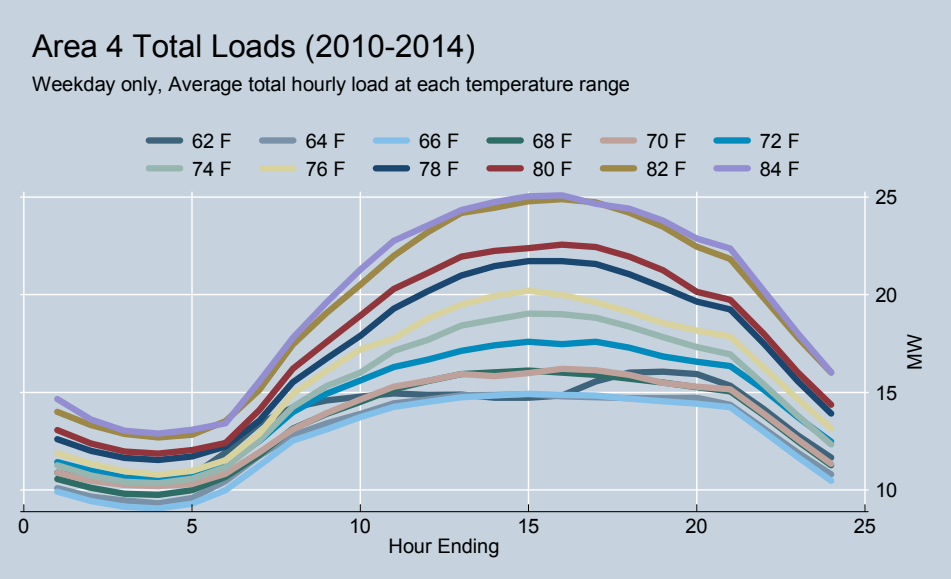


How weather sensitive is total load in each area?

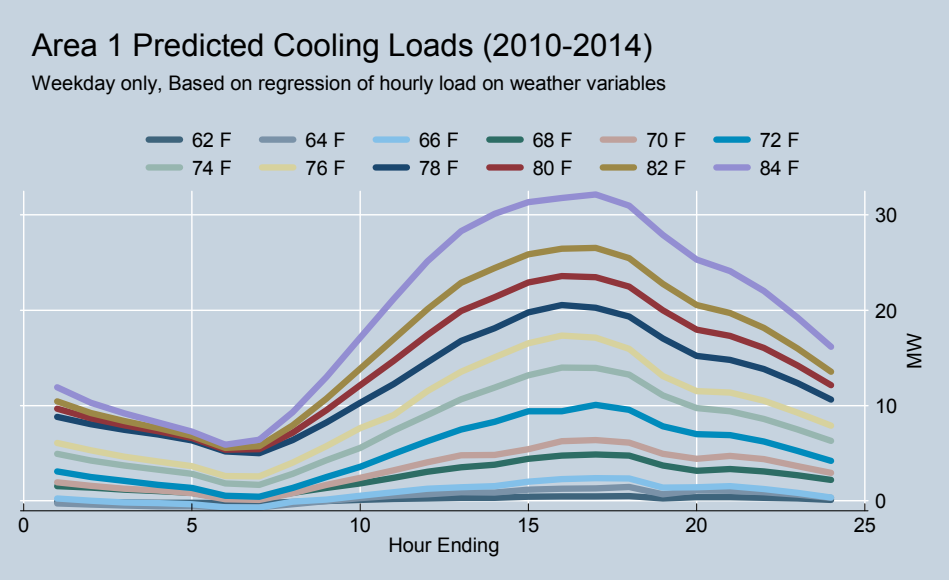


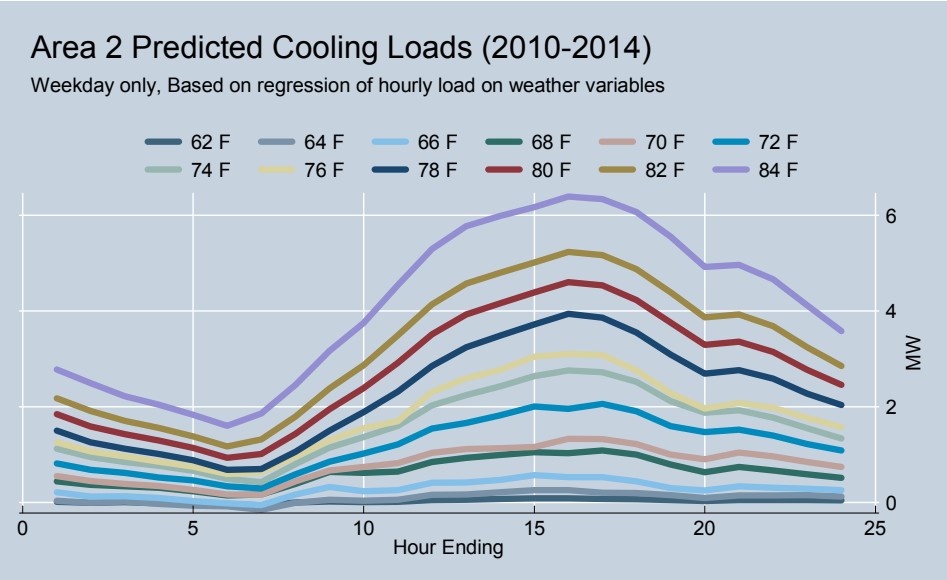


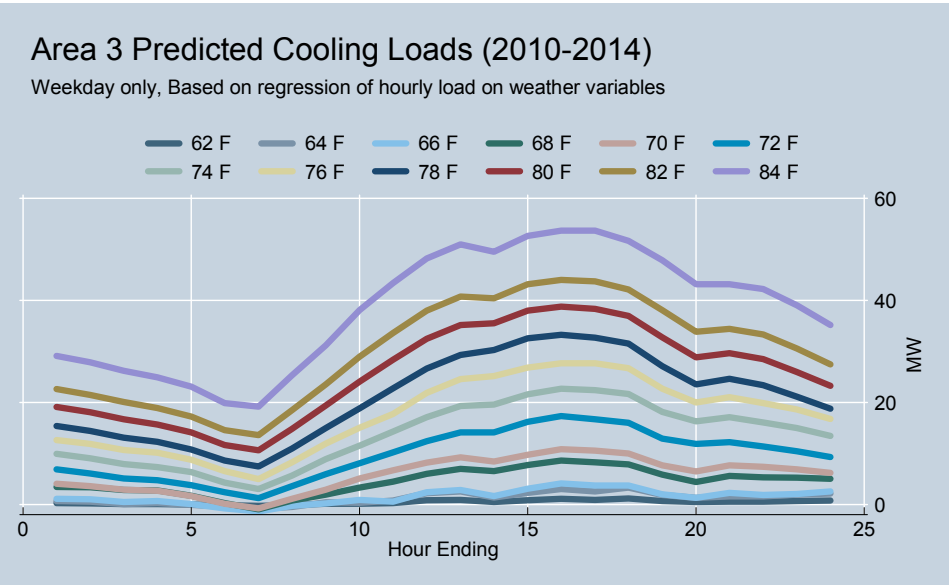


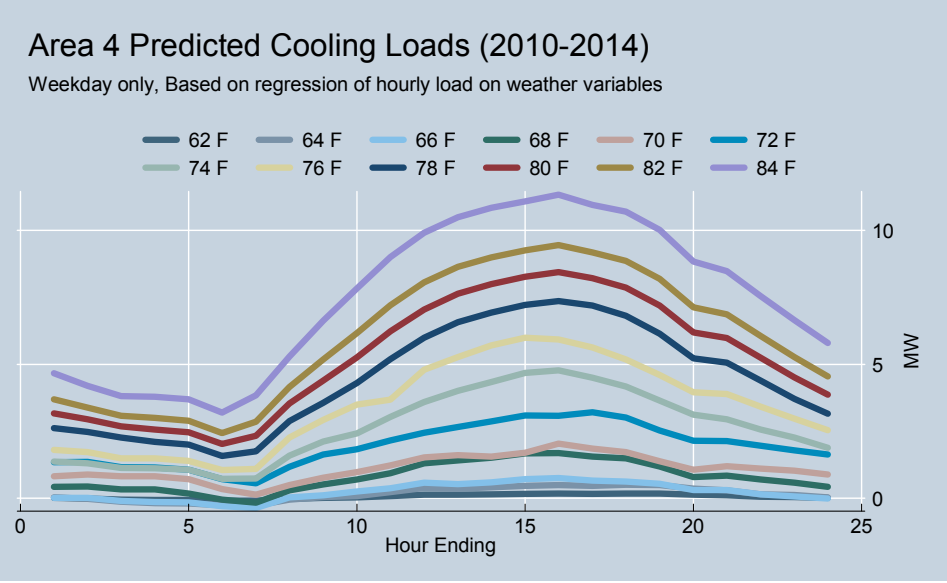


How weather sensitive are cooling loads in each area?

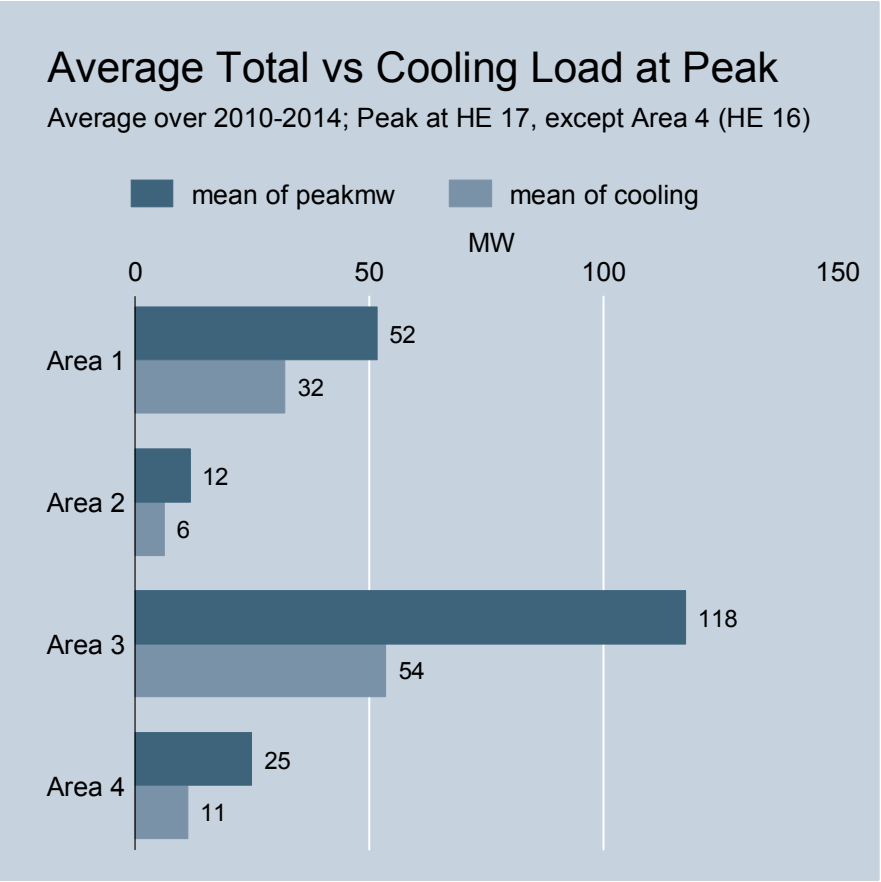


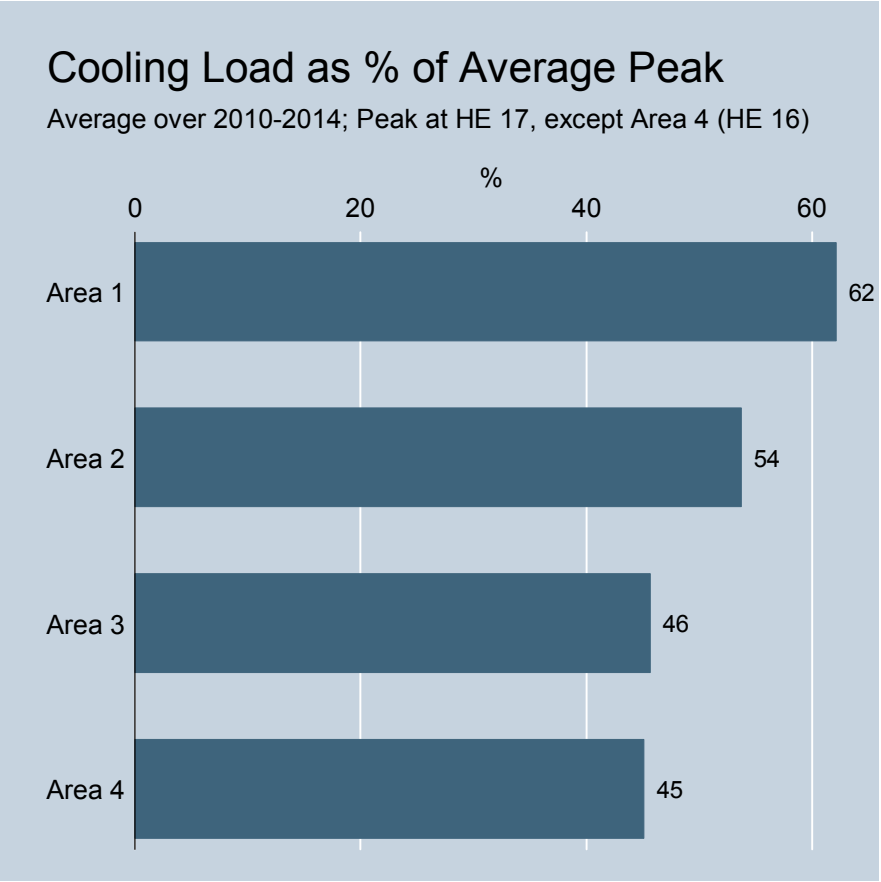




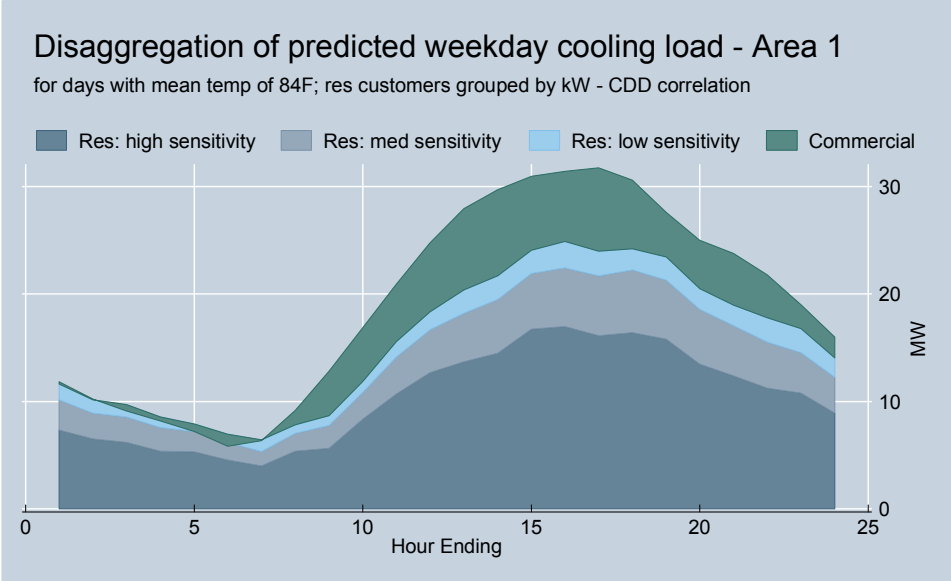


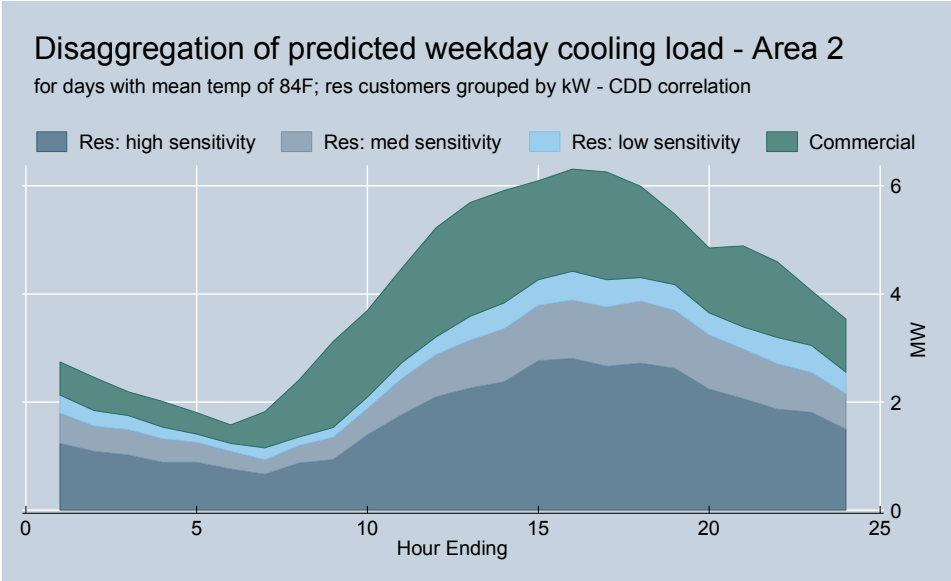
Cooling loads comprise the majority of peak load

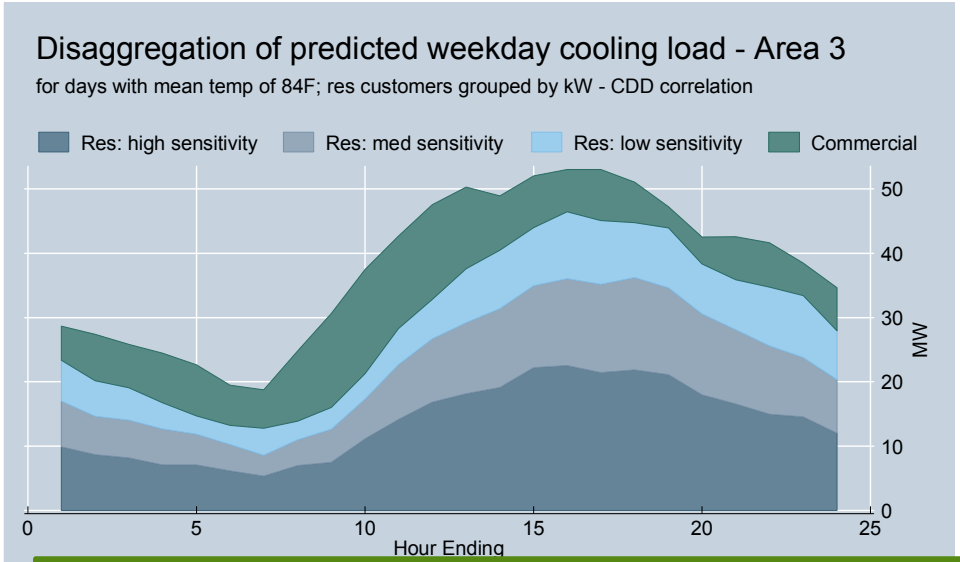


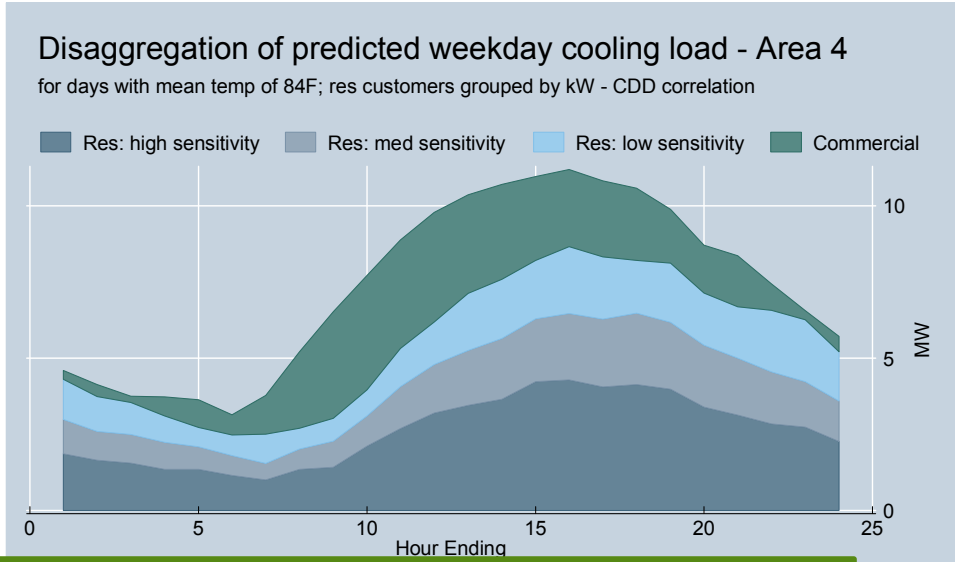


How are cooling loads disaggregated between customer segments?









Highly weather sensitive residential loads contribute almost half of peak cooling loads in target areas (~45 MW total)

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The Selection Criteria

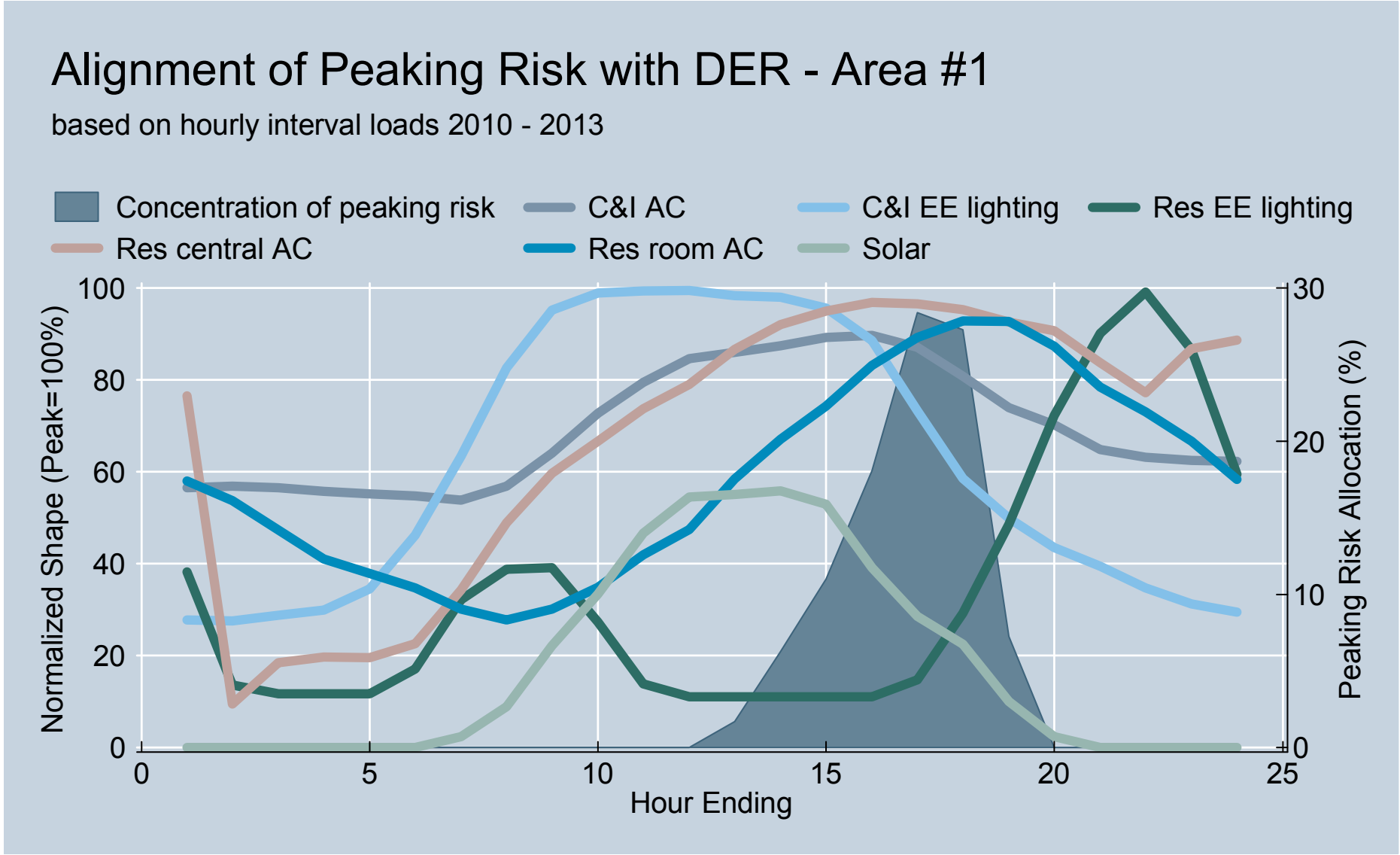
Selection criteria and weights

Criteria	Score Range	Weight	Scoring method
Hardware / Software – Customer Side	1-5	5%	Qualitative
Hardware / Software – Utility Side	1-5	5%	Qualitative
Cost per Effective MW	1-5	15%	Numeric
Event Impact Measurement and Verification	1-5	15%	Numeric
Marketing Initiatives/ Customer Engagement	1-5	15%	Qualitative
Adoption and Feasibility – Qualitative	1-5	15%	Qualitative
Adoption and Feasibility – Quantitative	1-5	15%	Numeric
Client Experience (References)	1-5	10%	Qualitative
Financial Viability	1-5	5%	Qualitative

Hardware / Software

Customer side	Utility side
▪ What types of hardware options are available to customers? ▪ Do customers have a choice or is the technology proprietary (e.g. for thermostat)? ▪ How do customers engage? Do they have multiple ways to access information? ▪ How easy is it to use the technology? How frequently is it used?	▪ Does the software include Open ADR? ▪ Can it incorporate other control devices? ▪ How easy is it to schedule/dispatch events? ▪ How easy is it to extract data? ▪ How easy is it to integrate software into utility systems?

How do you compare resources with different levels of flexibility, different load shapes, and different operating characteristics?



Cost per Effective MW

Calculation method for cost per effective MW
$\frac{\$}{Effective\ MW} = \frac{\$}{Nameplate\ MW\ * LCCF}$

- Total costs are annualized
- Load carrying capacity factor (LCCF):
  - Factors in resource flexibility, alignment of load shapes with peaking risk, and any material constraints that affect ability to manage loads when needed
  - It allows comparison between resources with inherently different characteristics
  - Based on back-casting. If we had been trying to shave peaks loads in area, would resource have delivered when it is was needed?

Event Impact Measurement and Verification

- Based on the technology, is it possible to determine if a resource has been dispatched? Is dispatch needed?
- Does the M&V method rely on a proven, unbiased method?
  - Preferred options were randomized control trials (RCT), randomized encouragement designs (RED), regression discontinuity, difference-in-differences with matched control groups, and technologies that do require a baseline or counterfactual.
  - Less robust options were within subject methods or engineering estimates
- How precise are the estimates?
  - How confident can CH be the resource was delivered?
- Are the event impact estimates delivered in near real-time?

Vendors were sent follow up questions to ensure CH had full data about M&V methods that would be applied

Marketing Initiatives/ Customer Engagement

- How much upfront education do customers receive?
- Do they receive ongoing communications and messages to engage them?
- How easy is it to enroll? Are there multiple options for how to enroll?
- Does the campaign include email, direct mail, phone marketing, door-to-door, community events?
- What is the quality of the marketing materials?

Adoption and Feasibility – Qualitative

- Did they discuss the customer enrollments levels or penetration/participation rates needed to attain goals?
- Did they document how their marketing strategy would attain the penetration levels needed?
- Did they discuss reductions per participant?
- Did they cite examples where the proposed penetration rates were attained?
- Have they attained those penetration rates themselves?

Customer Adoption and Feasibility – Quantitative

- Nexant developed estimates of market potential for each area and resource type
- Vendor estimates were compared to Nexant's assessment to ensure they were reasonable
- If vendors demonstrated they could achieve higher rates, they receive extra points
- Scores were scaled to 1-5

Client Experience

- Who did the vendor include as references?
- How much prior similar work had they done?

Financial viability

- Did the company have the resources to execute projects of the scale proposed?
- Is the company likely to be around long enough to complete the project?
- Do they have any pending legal actions?
- If they are start-up, what is the quality of financial backing (e.g. seed funding versus substantial rounds)?

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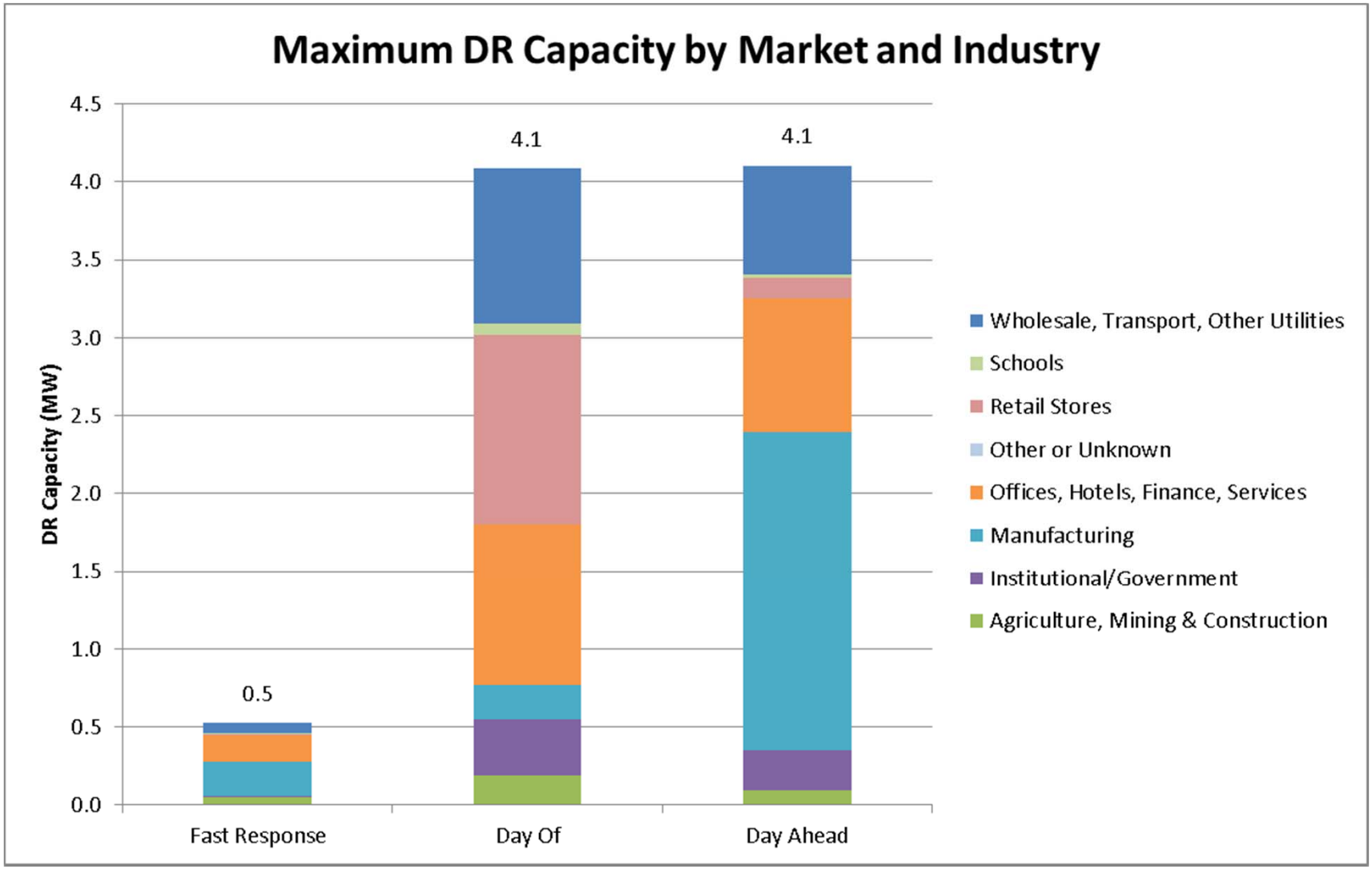
Assessing Feasibility

Customer Adoption and Feasibility – Quantitative: DR market potential modeled using Nexant calculator



Customer Adoption and Feasibility – Quantitative: AC load potential incorporated verified program participation rates

Table 4-1: Actual Participation Rates Achieved by Electric Utility Residential Central A/C Load Control Programs in the US (Sorted from Highest to Lowest)

Utility	% of Eligible Residential Customers Participating Based on Data Obtained Directly from Utility	Year
SMECO	60.2%	2013
Dakota Electric Association	59.2%	2013
PEPCO	53%	2013
SMECO	50%	2013
BG&E	38%	2013
DPL	37%	2013
BG&E	36.5%	2013
NOVEC	36.2%	2013
Public Service Company of New Mexico	25.4%	2013
Sacramento Municipal Utility District	25.4%	2013
Connexus Energy	21.5%	2013
DTE Electric Co.	19.3%	2013
PECO	10.80%	2012
Dairyland Power Cooperative	7.1%	2013
PPL	6%	2012
FE: Met-Ed	5.20%	2012
Georgia Power	4.2%	2013
FE: Penelec	3.40%	2012
FE: Penn Power	3.20%	2012
Duquesne	0.45%	2012
Average Participation Rate	25.1%	

- Verified participation rates for utility residential AC programs from DR potential study for Pennsylvania
- Attainable participation assumption used for Central Hudson AC load control programs:
  - Residential: 35%
  - Commercial: 25%
- Participation is for customers with AC

Source: Demand Response Potential Pennsylvania, Prepared For: Pennsylvania Public Utility Commission by consultant team including Nexant

Customer Adoption and Feasibility – Quantitative: AC load control potential modeled using disaggregated cooling load

- Participation and impact assumptions applied to modeled commercial and residential cooling loads
- Total residential cooling loads allocated 50:50 to room AC and central AC
  - Room AC penetration 57%
  - Central AC penetration 32%
  - Household loads from room AC typically about half those for central AC, but penetration is roughly double
- Impact assumptions
  - Residential: 50%
  - Commercial: 33% (less flexibility due to higher building occupancy)

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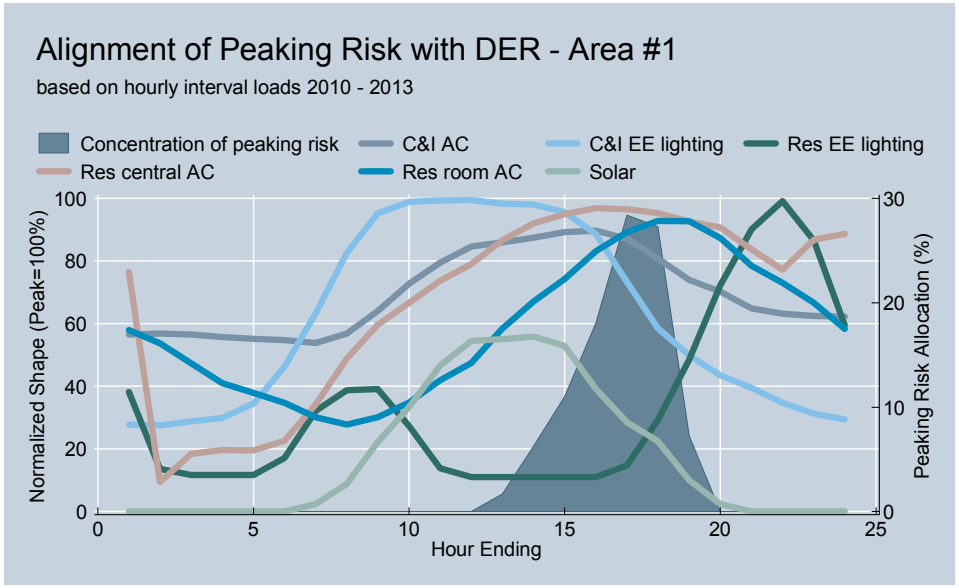
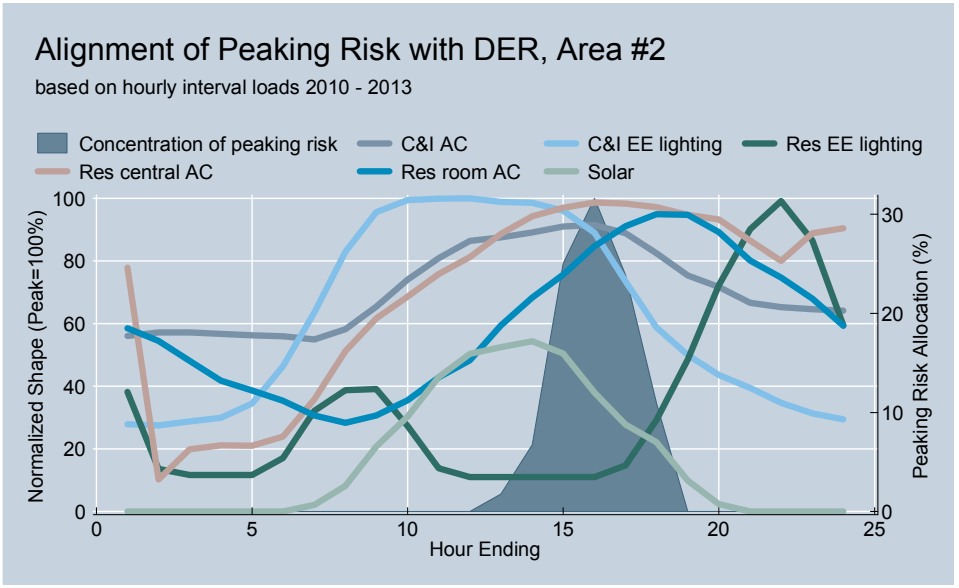
Comparing resources with different operating characteristics

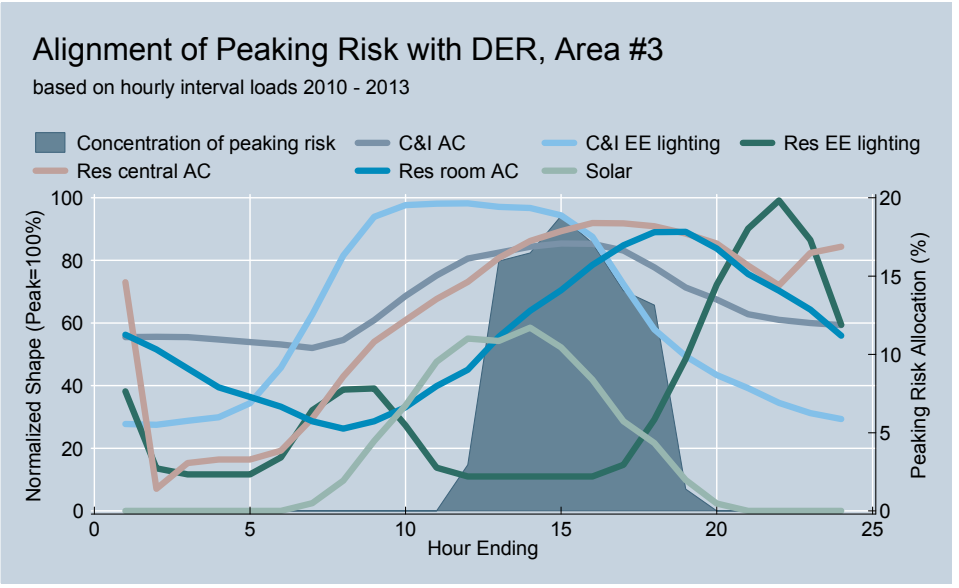
Peaking risk best aligned with residential AC load profile, especially in high risk concentration areas

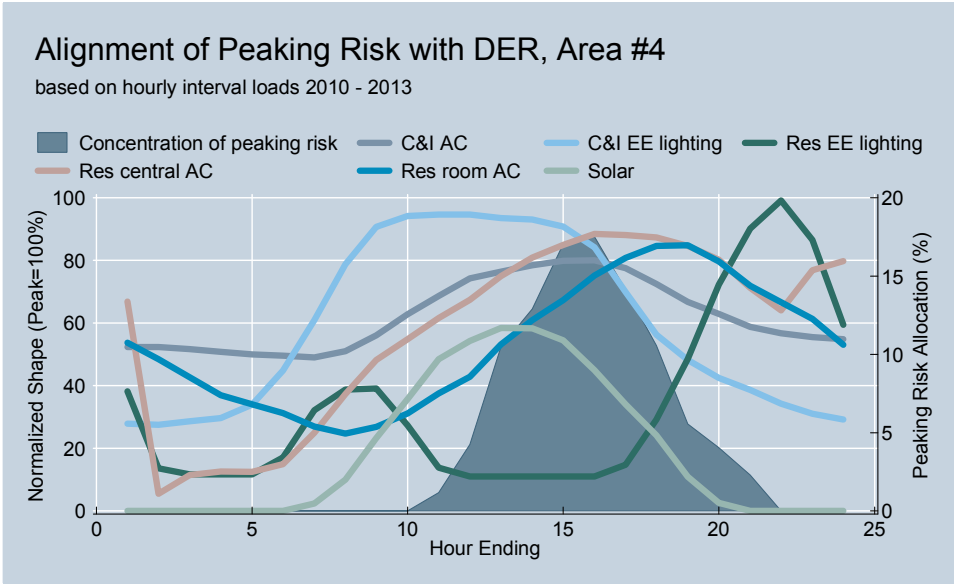
Concentrated risk





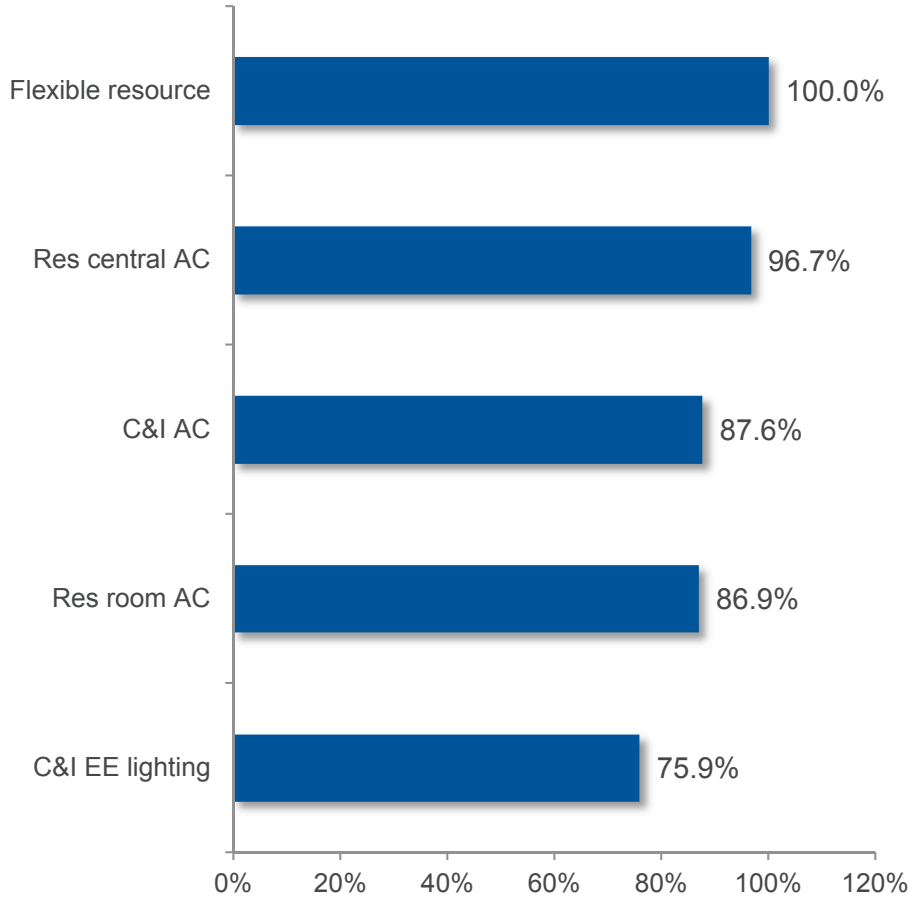
Less concentrated risk



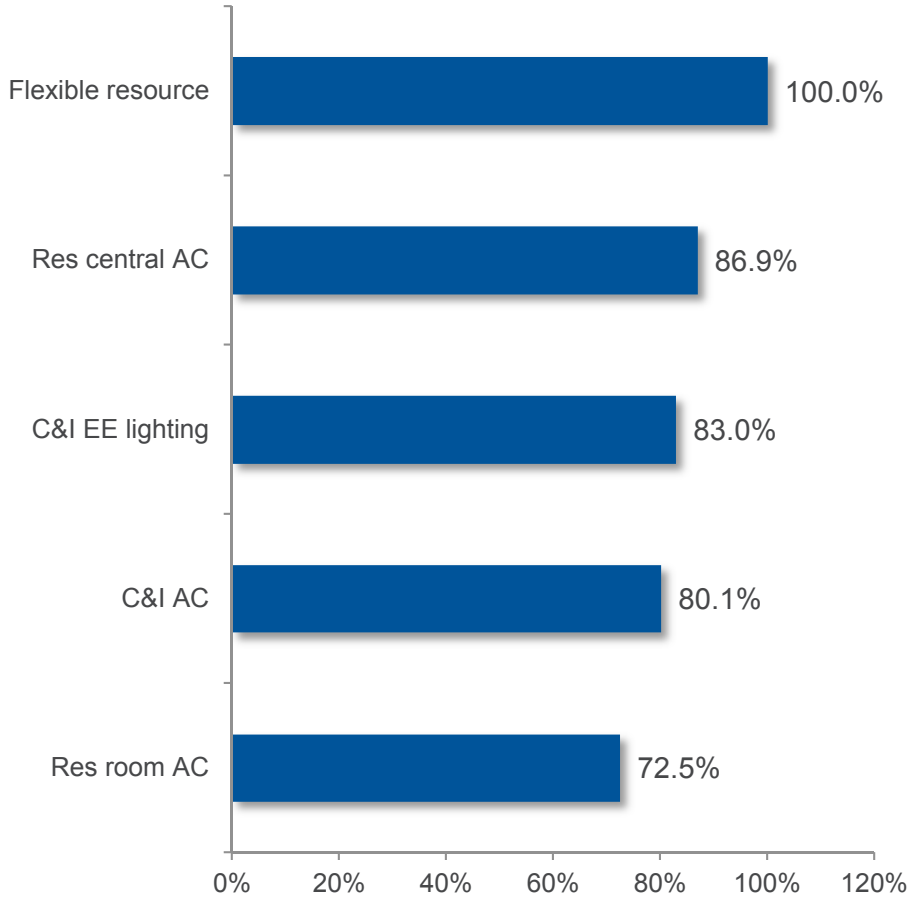


Load profiles were applied to certain types of DER, lowering LCCF for DERs with poor alignment with area peak

Areas with concentrated risk



Areas with less concentrated risk



Figures do not include all technologies evaluated

Example LCCF calculations for residential central AC in concentrated versus less concentrated risk areas

Hour (End)	Areas with concentrated risk			Areas with less concentrated risk		
	Peaking Risk Allocation	Resource production (per nameplate kW)	LCCF interim calculation	Peaking Risk Allocation	Resource production (per nameplate kW)	LCCF interim calculation
	(A)	(B)	(A X B)	(A)	(B)	(A X B)
1:00	0.0%	0.76	0.00	0.0%	0.68	0.00
2:00	0.0%	0.09	0.00	0.0%	0.06	0.00
3:00	0.0%	0.18	0.00	0.0%	0.12	0.00
4:00	0.0%	0.19	0.00	0.0%	0.14	0.00
5:00	0.0%	0.19	0.00	0.0%	0.13	0.00
6:00	0.0%	0.22	0.00	0.0%	0.16	0.00
7:00	0.0%	0.34	0.00	0.0%	0.26	0.00
8:00	0.0%	0.49	0.00	0.0%	0.39	0.00
9:00	0.0%	0.59	0.00	0.0%	0.49	0.00
10:00	0.0%	0.66	0.00	0.0%	0.56	0.00
11:00	0.0%	0.73	0.00	0.7%	0.63	0.00
12:00	0.0%	0.79	0.00	3.7%	0.69	0.03
13:00	1.7%	0.86	0.01	12.9%	0.76	0.10
14:00	6.3%	0.92	0.06	14.5%	0.82	0.12
15:00	12.4%	0.95	0.12	17.8%	0.86	0.15
16:00	19.4%	0.97	0.19	17.3%	0.89	0.15
17:00	28.0%	0.97	0.27	14.1%	0.89	0.13
18:00	25.7%	0.96	0.25	11.7%	0.88	0.10
19:00	6.6%	0.93	0.06	3.7%	0.85	0.03
20:00	0.0%	0.91	0.00	2.3%	0.81	0.02
21:00	0.0%	0.84	0.00	1.3%	0.73	0.01
22:00	0.0%	0.77	0.00	0.0%	0.66	0.00
23:00	0.0%	0.87	0.00	0.0%	0.78	0.00
24:00	0.0%	0.89	0.00	0.0%	0.81	0.00
	Max average hourly production		0.97	Max average hourly production		0.89
	LCCF		0.95	LCCF		0.84

Note: Example LCCFs vary slightly from figures on previous slide because this is a simplified example. Actual calculation is a sum product of risk allocation and scaled resource production for all 8760 hours for each year of data

- Inputs:
  - A. Peaking allocation risk (project area peak load)
  - B. Resource production on peak risk days (including all constraints, load profile, etc.)
- Resource LCCF Calculation:
  - $A \times B = LCCF_{Resource}$
- Calculation assumes resource production is scaled so that max production = 1. For proposals where average or minimum values were given, adjustments were made

In areas with concentrated risk, peak risk is limited to very few days

Days with peak risk	Areas with concentrated risk	Areas with less concentrated risk
6-Jul-10	✓	✓
7-Jul-10	✓	✓
8-Jul-10		✓
9-Jul-10		✓
15-Jul-10		✓
16-Jul-10		✓
19-Jul-10		✓
21-Jul-10		✓
24-Jul-10		✓
28-Jul-10		✓
4-Aug-10		✓
5-Aug-10		✓
9-Aug-10		✓
10-Aug-10		✓
31-Aug-10		✓
1-Sep-10		✓
2-Sep-10		✓
21-Jul-11	✓	
22-Jul-11	✓	
21-Jun-12	✓	
18-Jul-12	✓	
15-Jul-13	✓	
17-Jul-13	✓	
18-Jul-13	✓	
19-Jul-13	✓	✓

- Characteristics of days on which risk occurred is different for areas with concentrated vs less concentrated risk
  - **Concentrated risk**: 10 days over 4 years, 2 days per year except 2013 where there were 4 days
  - **Less concentrated risk**: 18 days, all but 1 day was in 2010
- Dispatch constraints such as limits on total days in the year, total consecutive days did not impact LCCF for areas with concentrated risk because the risk occurs on so few days
- Constraints will have a small though limited impact on LCCF in areas with less concentrated risk because risk was spread across 18 days but just one year

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Conclusions

Conclusions

- A substantial amount of analysis has been done over a short period
- The characteristics of DM area loads very much affects the types of DER needed
- The value of DER resources varies based on their operational characteristics and how well they align with the targeted area
- Attaining deep enough penetration of DER quickly enough is essential for T&D deferral to be effective

Next steps

- Crosscheck inputs and calculations
- Finalize scoring of proposals
- Compare cost of proposed DER solution to T&D solutions
- Recommend solutions to the collaborative

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For comments or questions, contact:

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San Francisco, CA 94104
415-777-0707

Smart Meter and Customer Portal

Request For Proposal

Confidential and Proprietary

This Request for Quote ("RFP") has been prepared by Central Hudson Gas & Electric ("CHGE") and is being furnished to provide you with an opportunity to bid, in consideration of your agreement to treat this RFP as confidential. The information enclosed in this document is proprietary to CHGE and is CHGE confidential. CHGE is not conveying any ownership to any party by disclosing this information. By accepting this document, you agree that you will treat the information herein as confidential, you will not allow any other person or entity to see it or use it, and you will not use it in any way other than to prepare the requested response. You must return this document, and all copies you have made of it, to CHGE upon request or if you should decline to submit a response.

Agreed and accepted:

By:

Name:

Date:

Table of Contents

Introduction

1.1 Organization Background

Central Hudson Gas & Electric Corporation ("Central Hudson" or "the Company"), is incorporated in the State of New York with its principal offices at Poughkeepsie, New York, and is a subsidiary of Fortis Inc. Central Hudson is a regulated transmission and distribution utility serving approximately 302,000 electric customers and 80,000 natural gas customers in eight counties of New York State's Mid-Hudson Valley that extends from the suburbs of metropolitan New York City north to the Capital District at Albany. Central Hudson's service territory is comprised of five operating districts: Kingston, Catskill, Poughkeepsie, Fishkill and Newburgh. For a map of Central Hudson's service area, see Appendix B.

1.2 Objectives of this RFP

As part of the Reforming Energy Vision (REV) initiative commenced by the New York State Public Service Commission (Case 14-M-0101) as referenced in Appendix F and incorporated in Central Hudson's recent rate filing (Cases 14-E-0318 and 14-G-0319), Central Hudson set forth concepts for four demonstration projects. In this Request for Proposal ("RFP"), Central Hudson seeks to establish the platform and infrastructure necessary to provide greater access to energy consumption data for our customers. In addition Central Hudson would like to partner with service providers to enable services and products to our customer base that are currently unavailable.

Central Hudson Gas & Electric is soliciting proposals in order to provide up to 1,000 Central Hudson customers the opportunity to receive enhanced energy consumption data through the use of a smart meter in order to better manage their energy bills. In an effort to increase customer engagement in how they manage and consume energy, Central Hudson customers will be able to opt into receiving a smart meter and be able to access their energy consumption through a customer interface such as a web portal or mobile application. Through this demonstration project, The Company expects to offer both utility branded and non-utility products and services to its customers.

The purpose of this RFP is to enter into a firm fixed price agreement with a vendor or multiple vendors for the Company's demonstration project. The project will provide Central Hudson customers with enhanced energy consumption data through the use of an electric meter providing interval data and a customer interface. The RFP is split into three sections. It is the expectation that vendors will respond to any one section in its entirety or any combination of the three.

1. Section 1 seeks vendors or a team of vendors who will supply all aspects of the following:
    a. A smart meter and/or module
    b. A meter data management system
    c. Meter head-end software
    d. Ability to host all communications to/from the customer's smart meter and back to the Company's data interface.
2. Section 2 seeks a customer interface for customers that choose to utilize the interface for the Company's products and services offerings, or for third parties who sell products or services but do not have their own customer interfaces for their products and services.
3. Section 3 is surveying bidders' requirements and details for customer service offerings. The intent of this section is to ensure Central Hudson is designing its infrastructure and front end standard portal in a way which encourages third party service providers to engage customers within the Central Hudson territory.

1.3 Project Requirements

Find below the outline of activities and associated deliverables expected to be completed. The project is comprised of three sections. Vendors may partner with third parties or solely submit proposals for one or multiple sections. **Multiple vendors may be selected to complete these activities and produce these deliverables.**

Section 1.

Central Hudson is interested in offering up to 1,000 Central Hudson customers the opportunity to opt into receiving a smart meter. The program will be open to all customers within the service territory and customers who opt in may not be concentrated geographically. Therefore all proposed solutions should take this into consideration when proposing technology recommendations.

Central Hudson is seeking a vendor in order to purchase smart meters and/or modules and to host all related communications, meter head-end software, and meter data management systems. The meter head-end software and meter data management system must interoperate with the smart meters and provide the following:

i. Secure communications between meters and servers.
ii. A data warehouse to store meter asset information and data collected from meters.
iii. A user interface in order to view meter communication status, configure individual meters, add and remove smart meters to the network, and initiate tasks such as on-demand reads.
iv. Compatible with New York State approved GE, Landis & Gyr, and Itron electric meters. Vendors must assist in gaining New York State approval if meters are currently not approved in New York State.

Vendors seeking to bid on Section 1 are required to complete Appendix A, Section 6.1 – Metering, Appendix B, Section 7.1 - Head End Software and Meter Data Management System, and the provided Cloud questionnaire.

Section 2.

In order for Central Hudson customers to better manage their energy usage, Central Hudson is seeking a vendor to host and provide a customer interface which displays enhanced energy consumption data for 1,000 Central Hudson branded customers who have opted into receiving a smart meter. To retain the customer's engagement in their energy consumption, the customer interface shall provide further insight into how their energy is being consumed and offer tips to better conserve energy. The customer interface shall provide the following:

i. Capability to interface with a meter data management system of Central Hudson's choosing.
ii. Ability to track user activity on customer interface.
iii. Provide some sort of social aspect amongst users (i.e creation of a virtual community).

Vendors seeking to bid on Section 2 are required to complete Appendix C, Section 8.1 – Customer Interface – Administrative, Section 8.2 – Customer Interface – User, and the provided Cloud questionnaire.

Section 3.

Consistent with REV, Central Hudson is seeking to establish the infrastructure to enable and promote partnership with third party service providers. Central Hudson recognizes the challenges associated with engaging customers in programs offered beyond the meter. There are a number of vendors that specialize in this space. Therefore Central Hudson aims to establish opportunities for third party service providers to leverage meter data to provide the customers within Central Hudson's service territory with advanced services. In order to best enable this form of partnership and gauge interest, Central Hudson looks to survey and identify the requirements of said service providers.

Vendors seeking to respond to Section 3 are required to complete a survey at https://www.surveymonkey.com/s/CHGESmartMeterRFPSurvey.

1.4 Expected Benefits of the Demonstration Project

Through this demonstration project Central Hudson aims to gain insight into the willingness of its customers to engage in advanced energy usage analytics and measure how various offerings impact the level of engagement.

1. In the context of Customer Engagement we will:
    a. Measure consumer participation based on various service offerings.
    b. Measure consumer engagement based on different channels of communication (web portal, mobile app, in home display).
    c. Measure impact on energy use due to additional consumption data and energy tips.
    d. Measure consumer engagement based on customers who have interval data vs. bimonthly reads.
2. In the context of new technology we will:
    a. Measure Customer acceptance of smart meters.
3. In the context of data we will:
    a. Determine the granularity of data required for customers to be engaged in their energy consumption.
    b. Determine the granularity of data required to maximize 3rd party service offerings.

2.0 RFP Calendar

This section documents the scheduled events and timeline for the RFP process.

2.1 Proposal Timeline

The following dates are the proposal timeline. All dates relevant to the creation and submission of this proposal are contained within this section. These dates are referred to within this RFP but will not be repeated to avoid unnecessary errors.

Event	Scheduled Date
1. RFP is delivered to vendors.	3/25/2015
2. Pre-bid conference call hosted by Central Hudson	4/3/2015
3. Intent to bid form due.	4/10/2015
4. Vendor responses are due by 5:00 PM EST (close of business).	4/17/2015

3.0 RFP Response Guidelines

3.1 Intent to Bid

Firms interested in submitting a proposal should notify Tom Su of their intent to bid via email at tsu@cenhud.com no later than 4/10/2015. The notification of the intent to bid should include which sections of the proposal the firm will be responding to.

Only those firms or individuals notifying Central Hudson of their intent to bid will be assured of receiving amendments (if any) to the RFP or clarifying statements therewith. Please include contact information for the lead person who will be coordinating the proposal including name, title, affiliation, mailing address, telephone and fax numbers, and email address.

For firms that do not plan to submit a proposal, please notify Central Hudson via the email above of your intent NOT to bid by 4/10/2015 with an explanation of the reason that the firm has chosen not to participate in the bidding process.

Failure of firm to notify Central Hudson of its intent to bid shall not preclude a firm from submitting a proposal by the specified date and will not prejudice its review.

3.2 Proposal Submission

This RFP is not an offer to contract.

Award of any contract will be based upon the most responsive vendor whose offer is the sole opinion of Central Hudson is most advantageous in successfully meeting Central Hudson's needs.

Five (5) signed original proposal must be delivered to the recipient named below no later than 5:00 PM, on the vendor response date (refer to Section 2.1 Event 4).

Ms. Robin Harbold

Central Hudson Gas & Electric Corporation

284 South Avenue

Poughkeepsie, NY 12601

Attn: Ms. Robin Harbold

Tel. (845) 486-5333

E-Mail addresses: rharbold@cenhud.com and tsu@cenhud.com

All supporting materials and documentation must be included with the completed proposal. Late proposals will not be considered and requests for extensions will not be granted.

This document and the response that is provided by the vendor will form part of any contract between Central Hudson and the vendor.

There will be no charge to Central Hudson for the response to this RFP.

The vendor shall state the proposal is good for 90 days after submission to Central Hudson.

3.3 Proposal Format

Proposals should be prepared simply and economically, providing a straightforward, concise description of the vendor's capabilities. The proposal will contain information that will describe the time and cost to complete each element of the proposed schedule. Please do not include sales and marketing "brochure ware" in the body of your response. Failure to comply with the format, as described, may result in lower overall evaluation scores for your organization.

The proposal must contain the following elements:

Transmittal Letter

The Submission of the signed proposal authorizes Central Hudson to include the document in its entirety as part of the procurement agreement.

- A primary contact person, title, address, email address, telephone, and fax numbers.

The RFP Response

1. Executive Summary

   This section presents a high level synopsis of the vendor's response to the RFP. The Executive Summary should provide a brief overview of the engagement and should identify the main features and benefits of the proposed work.

2. Vendor Qualifications

   In order for Central Hudson to make a qualified judgment regarding the applicability of the product/service and the offering vendor, please provide the following information:

   - Vendor Overview.
   - Screenshots of any applicable software.
   - How long the firm has offered these services.
   - Describe the firm's specific services experience.
   - Provide the number and size of the firm's services clients. Note the companies of similar size, industry, and organization to Central Hudson.

3. Response to required templates in Appendixes A, B, and C and Cloud questionnaire

   It is the expectation that responding bidders complete the templates provided which correspond to the appropriate section. Bidders responding to sections 1 or 2 must complete the Cloud questionnaire provided by Central Hudson.

4. Scope, Approach, and Methodology

   Detail your proposed implementation approach in the form of a classic project: Phase, Deliverables, Tasks and Task Resource required (vendor, Central Hudson or other third party) and project duration. This section will serve as the vendor's proposed Statement of Work. The implementation approach will also be included in an overall Central Hudson project SOW and project plan that will be used to manage the project implementation.

5. Project Team Staffing

   Provide proposed internal support requirements for Central Hudson in implementing and utilizing your solution.

6. Detailed and Itemized Pricing

Provide a fee breakdown by project phase and/or deliverable and estimates of other project related expenses. All fees should be identified as one time or recurring fees. Provide a fixed bid pricing proposal inclusive of travel for the following:

- Proposed fees for professional services
- Proposed billing basis
- Proposed payment schedule
- Implementation fees
- Required hardware
- Software licenses
- Maintenance and support

Provide pricing of the aforementioned for project sizes comprised of the following:

- 0 – 1,000 customers
- 1,001 – 5,000 customers
- 5,001 – 10,000 customers
- Over 10,000 customers

7. Service Level Agreement

   Describe your escalation procedures and SLA options.

8. Signature Section

   Provide space for an Authorized Vendor Signature and a Central Hudson Signature Acceptance.

3.4 General Information

Please note the following general instructions for RFP response preparation and submission:

- Response to this RFP does not commit Central Hudson to pay any costs incurred in the preparation of bids. Therefore, all costs associated with responding to this RFP are to be borne by the vendor.
- Central Hudson reserves the right to make an award without further discussion of the proposal submitted. Therefore, the proposal should be submitted initially in the most favorable terms the vendor can propose.
- Failure to respond in the template formats included and requirements of the RFP may result in rejection of the vendor's proposal at the discretion of Central Hudson.
- Central Hudson reserves the right to reject any and all proposals received. If a final selection is made it will be the proposal that is in the best interest of Central Hudson, in the opinion of Central Hudson.
- Vendors, whose proposals have not been selected for further consideration, will be notified in writing/email at the address/email address provided within the RFP response.
- Information in the RFP is strictly confidential and is proprietary to Central Hudson. Any release of information contained in the RFP to a third party without the prior written consent of Central Hudson will result in the rejection of the vendor's proposal.

- Vendor must agree that its proposal shall remain open and firm for 90 days after being submitted to Central Hudson.
- All agreements resulting from this RFP are preliminary. Central Hudson has no obligation to the vendor until a formal agreement is executed or a written authorization to proceed is given by Central Hudson.

3.5 RFP Clarifications

While every effort has been made to provide the necessary degree of system requirements definition, it is recognized that clarification, interpretation or other additional details regarding this RFP may be required. The vendor may submit questions to Central Hudson. All questions will be shared with all participants.

3.6 RFP Questions

Technical questions regarding this RFP should be submitted to Central Hudson Gas & Electric Corporation:

Central Hudson Gas & Electric Corporation

284 South Avenue

Poughkeepsie, NY

Attn: Tom Su

Tel. (845)-486-5287

E-Mail address: tsu@cenhud.com

Questions (as provided by the bidders) and responses will be kept confidential of all identifiable information. Contractor's contact information will not be displayed on the questions and answers.

Central Hudson will coordinate the conference call procedure for the Pre-Bid Conference Call on 4/3/2015. Questions arising on the Pre-Bid Conference Call that cannot be answered at that time will be addressed in a subsequent email to bidders who indicated their intent to bid, as soon as possible after the completion of the conference call. Bidders may participate in the conference call using the following call in number:

Call- number – 1-845-486-6070

PIN - 060624

4.0 Proposal Evaluation Approach

Central Hudson will evaluate the proposals and select finalists to present their solution to Central Hudson stakeholders. A Central Hudson team comprised of subject matter experts will evaluate the finalist's proposals and vendor demonstrations.

The vendor with the highest score will be selected to negotiate for the contract. If a contractual agreement cannot be reached, Central Hudson has the option to negotiate with the next highest scoring vendor or re-bid the project in its entirety.

The provider will assume all costs it incurs in providing responses to the RFQ prior to executing a definitive contract and for providing any additional information required by Central Hudson to facilitate the evaluation process.

4.1 Provider Evaluation Criteria

Central Hudson will evaluate competitive bids received from various Providers. No requests for exclusivity will be accepted by Central Hudson during the evaluation process. Central Hudson will evaluate Provider proposals on the basis of criteria that include but are not limited to:

a. Management Commitment: The credibility of the Provider's commitment to provide the requested services, to meet or exceed all requirements, and desire/willingness to develop and maintain a good business relationship.
b. Work Approach: The completeness of the services proposed in the RFP response, the willingness to satisfy or exceed the RFP requirements and Central Hudson business needs, and the approach to be used to assure consistently high quality service.
c. Provider Viability: The Provider's size, financial stability, industry track record, and capacity to provide the managerial, customer service, sales and physical resources necessary to deliver the required services over the life of the contract.
d. Experience in Providing Comparable Services: The Provider's specific experience and demonstrated ability in providing the required services to companies on a scale and/or complexity comparable to that described in this RFP.
e. Cost: Provider's commitment to comprehensively set out a fees proposal for all required services.
f. Plan of Attack: Provider's ability to describe and deliver the methods, practices, tools and techniques that will result in the proposed cost savings and will meet Central Hudson overall sourcing objectives.
g. Contract Terms: The Provider's ability and willingness to propose terms that are appropriate to the dynamic and competitive environment in which Central Hudson operates. Provider's willingness to accept Central Hudson contract terms.

5.0 RFP Process

5.1 Disclaimer

Central Hudson makes no representations or warranties regarding the accuracy or completeness of the information contained in the RFP and Appendices. The Provider is responsible for making its own evaluation of information and data contained in this RFP and in preparing and submitting responses to this RFP.

5.2 Termination of RFP Process

Central Hudson reserves the right to discontinue the RFP process at any time, and makes no commitments, implied or otherwise, that this process will result in a business transaction with one or more Providers

6.0 Appendix A

6.1 Metering

Sequence	Metering Information & Requirements		Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
1	Communication methods of meter within proposed solution.	Cellular							
		900 Mhz Mesh							
		2.4 Ghz Mesh							
		Point to Point							
		Zigbee							
		Other							
2	Length of intervals in meter.	5 minute							
		15 minute							
		60 minute							
		Real-time							

Sequence	Metering Information & Requirements		Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
3	Days of non-volatile data storage in meter at stated intervals.	5 minute							
		15 minute							
		60 minute							
		Real-time							
4	Meter types available.	Net metering							
		Demand							
		FM2S							
		FM12S							
		FM16S							
		Other							
5	Ability to display metering data visually on meter for manual reads from field.								
6	Behind the glass soft reconnect – rearming of meter allowing on-site reconnection via button on the meter.								

Sequence	Metering Information & Requirements	Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
7	Behind the glass remote disconnect with system confirmation.							
8	Behind the glass load limiting capability.							
9	Remote meter firmware upgrade capability.							
10	Describe the release schedule for meter firmware upgrades.							
11	Approved for use in New York State.							
12	Warranty term.							

7.0 Appendix B

7.1 Head End Software & Meter Data Management System

Sequence	Head End Software & MDMS Information & Requirements		Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
1	Compatibility of different meter manufacturers.	GE							
		Itron							
		Landis & Gyr							
2	Frequency of meter data updates to MDMS.	Daily							
		Hourly							
		On demand							
		User Configurable							
3	Data exporting frequency.	Daily							
		Hourly							
		On-demand							
		User Configurable							

Sequence	Head End Software & MDMS Information & Requirements		Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
4	Data export file format.	Flat file							
		XML							
5	Describe system's standard reporting capabilities and ability to create custom reports.								
6	Ability to perform on demand reads.								
7	Ability to detect meter tampering.								
8	Outage notification and reporting.								
9	Voltage recording and reporting.								
10	Describe the communication latency across the network.	Single Read							
		Complete System Read							
11	Compatibility with net metering.								
12	Compatibility with demand metering.								
13	Describe the validation, estimating, and editing rules.								
14	Ability to configure validation, estimating, and editing rules.								

Sequence	Head End Software & MDMS Information & Requirements	Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
15	Describe percentage of meters successfully read on a daily basis.							
16	Green button download availability.							
17	Green button connect My Data availability.							

8.0 Appendix C

8.1 Customer Interface - Administrative

Sequence	Customer Interface – Administrative Information & Requirements		Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
1	The ability to configure look and feel of interface.	Change between displaying kW and $.							
		Ability to move widgets or modules around screen.							
		Change graph types. (bar vs. line)							
		Change colors of graphs and icons.							
2	The ability to cross promote programs.								
3	The ability to modify branding.								

4	The ability to import various data formats exported from MDMS or other systems.	XML							
		Flat file							
5	The ability to track user activity on customer interface.								
6	Green button download availability.								
7	Green button connect My Data availability.								
8	Interface for customer service representatives in order to view customer usage history and assist with customer inquiries.								

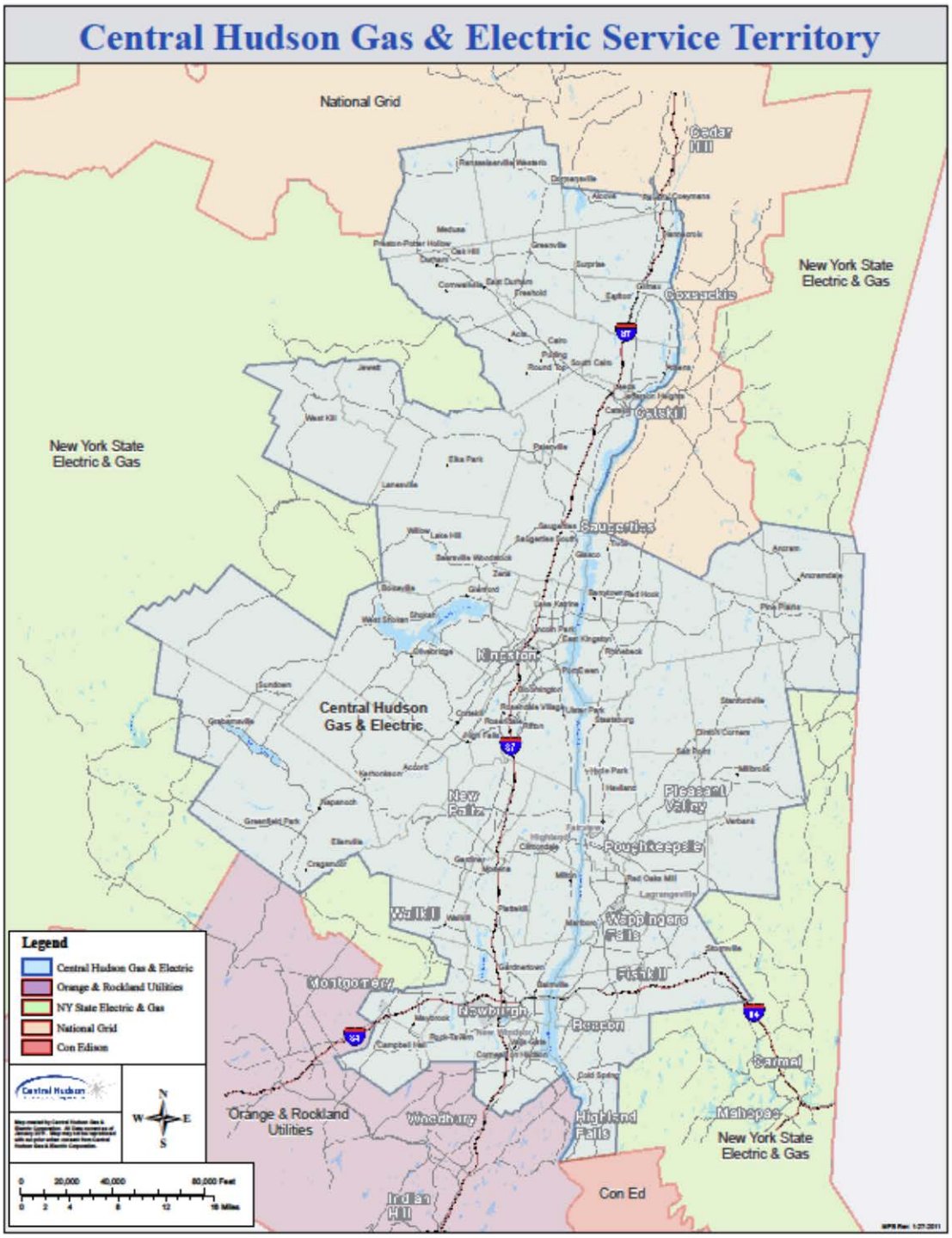
8.2 Customer Interface - User

Sequence	Metering Information & Requirements	Baseline	Other Software by Offerer Required	Third Party Software Required	Code-based Enhancement	Gap. Not Covered.	Name of Other or Third Party Solution Being Recommended.	Describe what your software provides to meet this requirement.
1	The ability to view usage in kW.							
2	The ability to view usage in $'s.							
3	The ability to access through single sign on.							
4	The ability to receive consumption related send alerts - text and email.							
5	The ability to create consumption goals.							
6	The ability to issue energy saving tips.							
7	The ability to gamify the customer experience through virtual tokens, points or some other means.							

8	Describe the system's ability to create a social atmosphere among users through idea sharing or user forum.							
9	Ability to create customer interface for customers with bi-monthly reads.							
10	Ability to display generation and delivered readings. (net metering)							
11	Ability to display demand meter readings in addition to consumption data.							
12	Ability to view more granular data by drilling down into charts.							
13	Availability of mobile application. Compatibility with Windows, Android, iOS.							
14	Green button download availability.							
15	Green button connect My Data availability.							
16	Ability to analyze different rate options based on energy usage history.							
17	Load disaggregation.							

9.0 Appendix D

9.1 Service Territory Map



10.0 Appendix F

10.1 Case 14-M-0101

Principles for REV Demonstrations

The intent of early REV demonstrations is to advance the development of new utility and third party service or business models and to gain experience with integration of distributed energy resources. Demonstrations will inform regulatory changes, rate design, and provide utilities with the opportunity to learn how best to use these resources in system development, planning, and operations.

1. REV demonstrations should include partnership between utility and third party service providers. These partnerships may be unique to each demonstration depending on the situation. Utilities should endeavor to support demonstrations where third parties use their own capital.

2. The utility should identify questions it hopes to answer or problems or situations on the grid and the market should respond with solutions. Hence, third party participation through a traditional RFP/RFI method where the utility has pre-diagnosed the solution(s) does not meet this requirement. Data sharing will be essential to enable market participants to propose solutions.

3. Demonstrations should delineate how the generated economic value is divided between the customer, utility, and third party service provider(s). The demonstrations should propose how much of the projected capital expense needs to go into the rate-base versus competitive markets.

4. The market for grid services should be competitive. The regulated utility should only own distributed energy resources if market participants are unwilling to address the need and the utility is acting as the service provider of last resort (in this instance, "provider of last resort" and "needed" means that no one in the market is providing the solution and the distributed solution is less costly than alternatives for the problem).

5. While some demonstrations may be bilateral, and therefore may not be "competitive" per se, utilities and service provider should propose rules (data, terms, standards, etc.) that will help create subsequently competitive markets. In addition, utility and third party providers need to establish regulatory proposals to ensure safety, reliability and consumer protection. Service providers can retain intellectual property that results from base data that would be available to others.

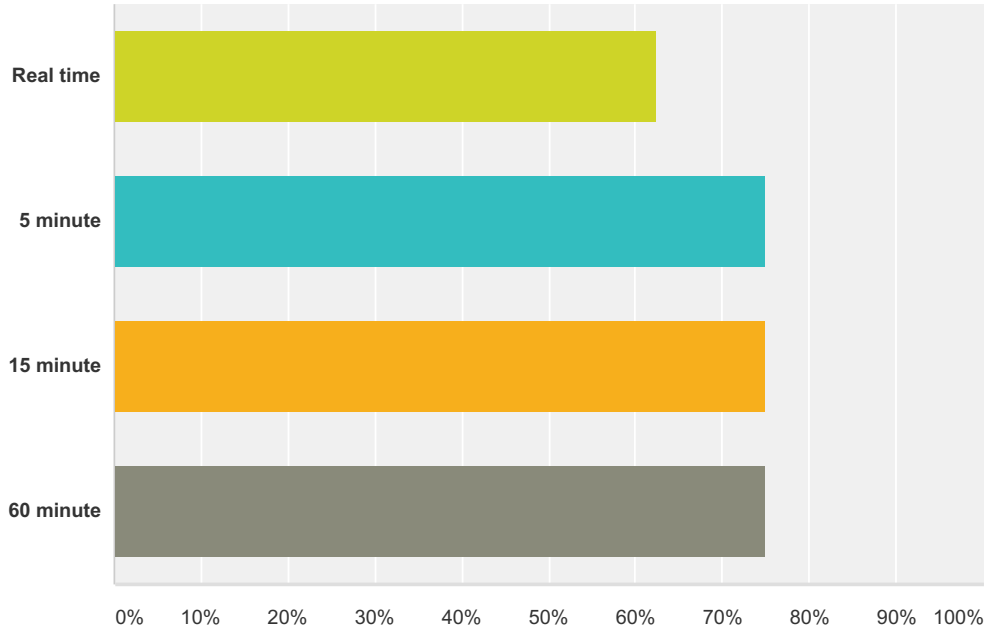
6. Demonstrations should inform pricing and rate design modifications. For example, a component of a trial can test demand response, real time, or time of use pricing to better understand how to motivate different consumers. Demonstrations should include opportunities for third parties to demonstrate how various rate designs, information sharing, adjusted standby tariffs, and other technologies can be used to benefit consumers, encourage customer participation, and achieve REV's efficiency and bill management objectives.

7. Utility and third party service provider(s) should consider deploying in their demonstrations advanced distribution systems, including two way communications, real time operation of dynamic load, and other system technologies that support awareness, flexibility, efficiency and cost-effectiveness.

8. Utilities should explore opportunities in their demonstrations to work with and include various residential, commercial, institutional and industrial customer participants.

Q1 What granularity of data is required for the proposed solution?

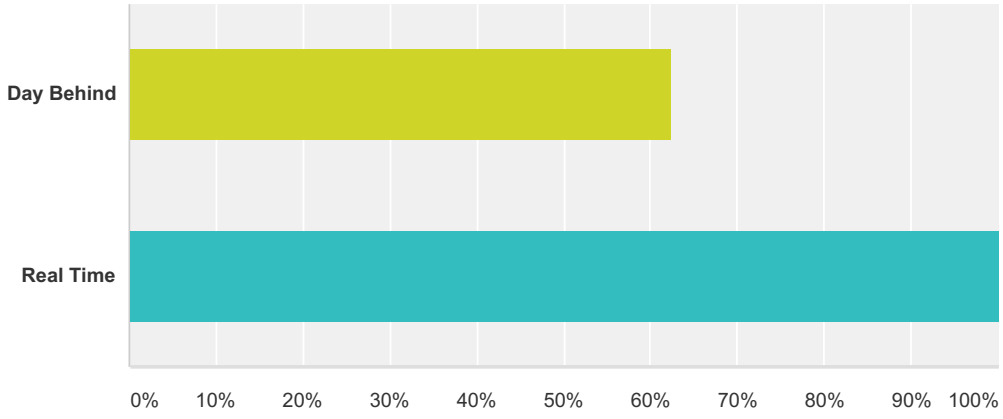
Answered: 8 Skipped: 0



Answer Choices	Responses	
Real time	62.50%	5
5 minute	75.00%	6
15 minute	75.00%	6
60 minute	75.00%	6
Total Respondents: 8		

Q2 What data availability within the meter data management system is preferred?

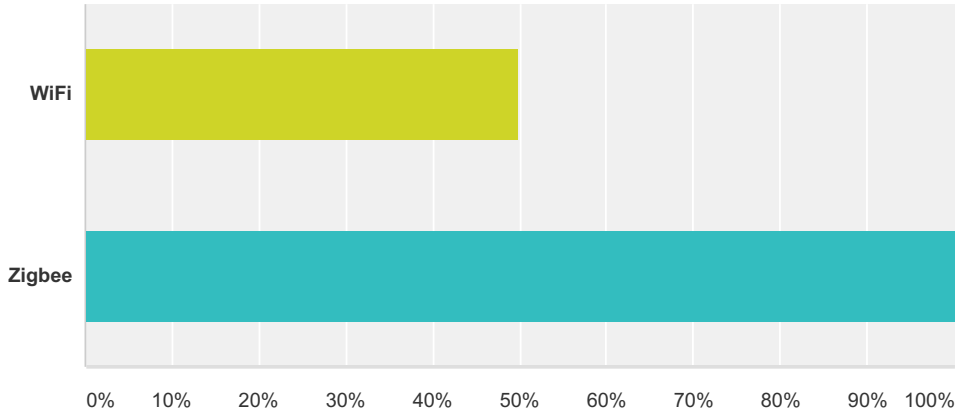
Answered: 8 Skipped: 0



Answer Choices	Responses	
Day Behind	**62.50%**	5
Real Time	**100.00%**	8
Total Respondents: 8		

Q3 Please note any communication requirements within the meter

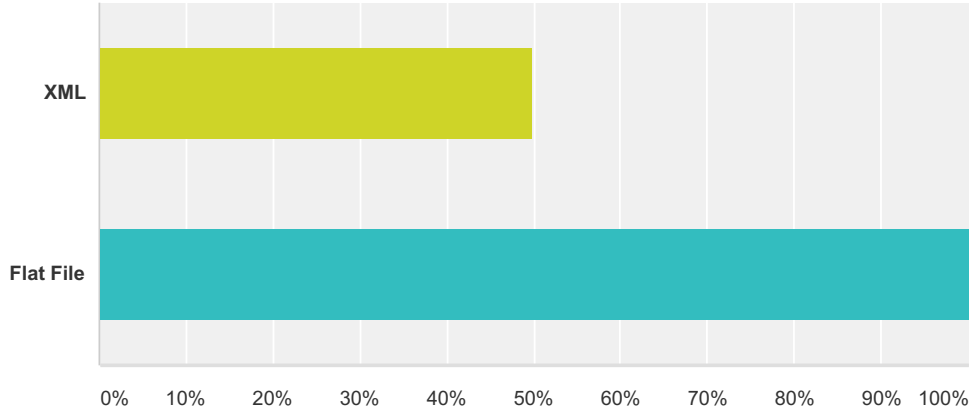
Answered: 2 Skipped: 6



Answer Choices	Responses	
WiFi	50.00%	1
Zigbee	100.00%	2
Total Respondents: 2		

Q4 If metering data is required from Central Hudson to enable or enhance your service offerings, in what file format is it required?

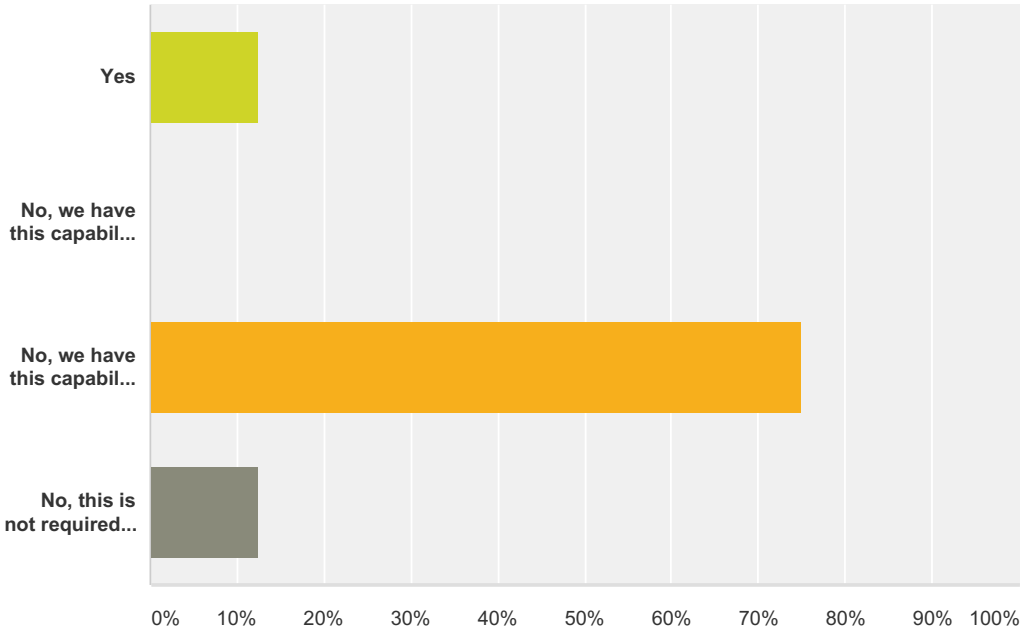
Answered: 6 Skipped: 2



Answer Choices	Responses	
XML	**50.00%**	3
Flat File	**100.00%**	6
Total Respondents: 6		

Q5 Would you require a customer interface utilizing smart meter data provided by Central Hudson?

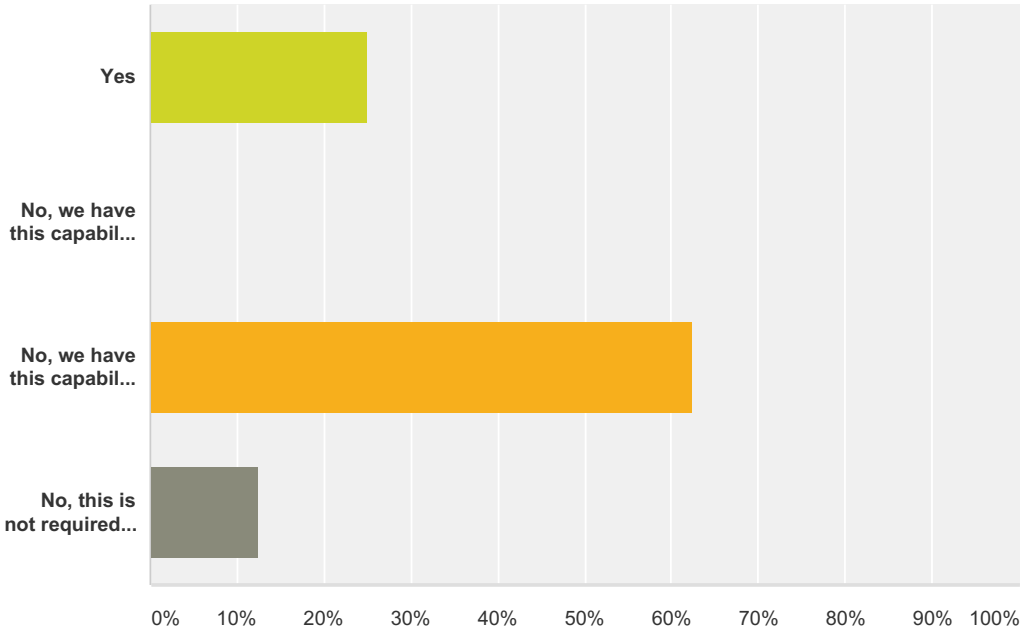
Answered: 8 Skipped: 0



Answer Choices	Responses	
Yes	12.50%	1
No, we have this capability through a partner firm	0.00%	0
No, we have this capability internally	75.00%	6
No, this is not required for our service offerings	12.50%	1
Total		8

Q6 Would you require the use of a standard user inferface for non-smart metered customers provided by Central Hudson?

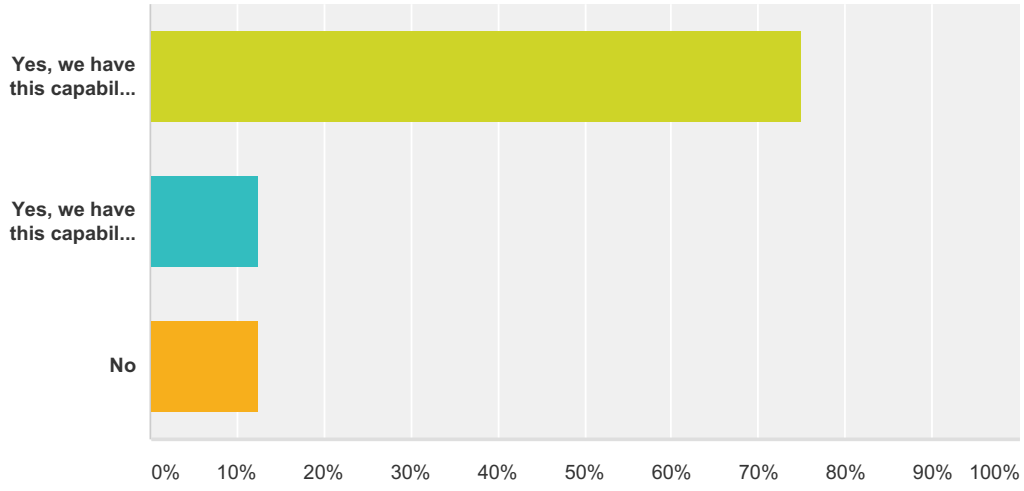
Answered: 8 Skipped: 0



Answer Choices	Responses	
Yes	**25.00%**	2
No, we have this capability through a partner firm	**0.00%**	0
No, we have this capability internally	**62.50%**	5
No, this is not required for our service offerings	**12.50%**	1
Total		**8**

Q7 Is Call Center support available to handle customer inquiries?

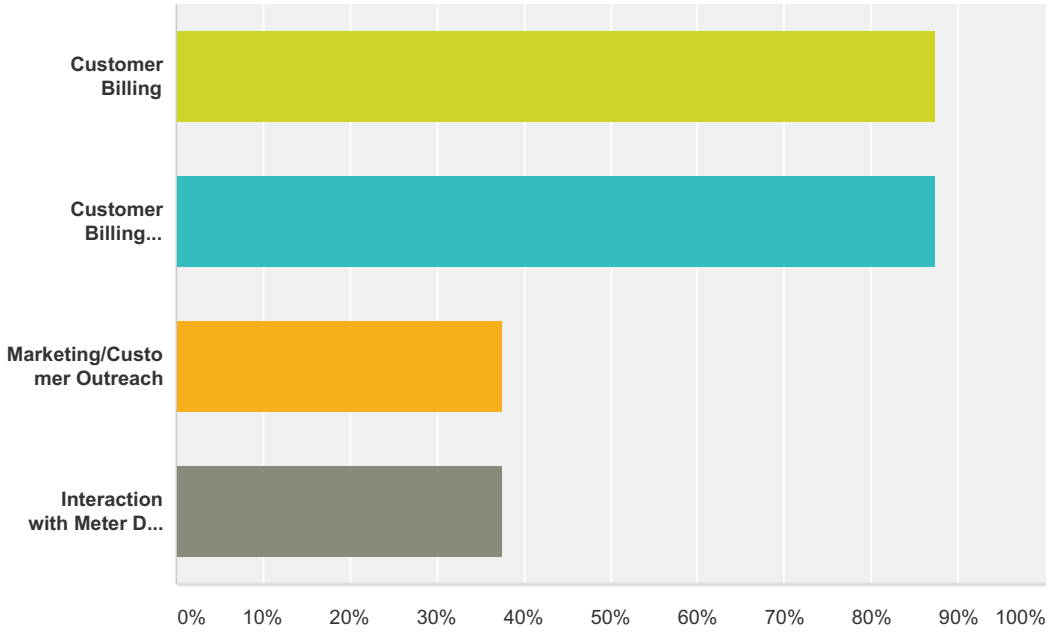
Answered: 8 Skipped: 0



Answer Choices	Responses	
Yes, we have this capability internally	**75.00%**	6
Yes, we have this capability through a partner firm	**12.50%**	1
No	**12.50%**	1
Total		**8**

Q8 Would you prefer Central Hudson to handle any of the following directly with customers receiving your servcies? Choose all that apply.

Answered: 8 Skipped: 0



Answer Choices	Responses	
Customer Billing	87.50%	7
Customer Billing Inquiries	87.50%	7
Marketing/Customer Outreach	37.50%	3
Interaction with Meter Data Management System	37.50%	3
Total Respondents: 8		

Q9 What was not asked that we should understand about your business in order for Central Hudson to establish infrastructure that eliminates barriers to offering your products and services?

Answered: 4 Skipped: 4

Q10 Name of responding party

Answered: 8 Skipped: 0

CLP ATTACHMENT I

Lessons to be learned by the Ulster County CCA Demonstration Project

1. What types of DER resources (such as solar, biomass, wind, low-impact hydro, combined heat and power (CHP), efficiency, demand response) are most prevalent and available in participating upstate communities of the mid-Hudson region?
2. Which of these resources is most likely to reduce load, especially peak load, and produce system benefits?
3. What are the potential benefits and risks to different customer classes (residential, small business, industry) of participation in a CCA, and what are the respective short- and long-term benefits they can expect?
4. What are the most effective methods of reaching and engaging these consumers?
5. What are the most appropriate forms of organization (authority, local development corporation, inter-municipal agreement, or other) to implement this model of CCA?
6. What is the role of consultants in helping municipalities carry out long-range energy planning and implementation?
7. What staffing and organizational needs must be met so that municipalities are capable of effectively exercising local control over energy planning and build-out, while meeting statutory obligations, ensuring reliability and rate stability, and strengthening consumer and other market participation?
8. What existing barriers hinder introduction of DER in local communities (permitting, zoning, land use, interconnection, etc.) and how and when can they be addressed during the process of CCA formation?
9. What are the start-up costs?
10. What financing methods and tools can be effectively utilized by the CCA to introduce DER (long-range PPAs, H-bonds, on-bill financing, targeted rate adjustments)?
11. What types of rate design appeal to customers?
12. What are the risks and benefits of this form of CCA, and what are some of the ways municipalities can mitigate the risks and maximize the benefits?
13. What are the partnership opportunities between the CCA and Central Hudson in fulfilling REV goals and enhancing implementation of DSP functions?

CLP ATTACHMENT II

Timeline of Activities and Milestones

PHASE I: Start-up (6 months)

- CLP hires CCA project management team.
- CLP, with support from the County and municipal leaders, organizes meetings with municipalities, key stakeholders and the public; conducts broad outreach and publicity.
- CLP, working with the County, forms a Steering Committee including representatives of interested municipalities, the County, community organizations and other stakeholders.
- CLP, with assistance of a consultant, builds a website devoted to the development of the CCA.
- CLP, with assistance of a consultant, produces a White Paper describing the reasons why the project is being undertaken; the economic benefits for participants and government; the need for additional data and information from municipalities; the role of Central Hudson in funding the project and its prospective role as DSP; and a description of the public process leading to CCA creation.

Phase I Milestones:

- **Steering Committee established; municipalities commit to participating.**
- **White paper prepared and discussed with the Steering Committee.**
- **Project website launched.**

PHASE II: Preliminary Planning (8 months)

[Note: This phase requires that utility data has been received by the County.]

- CLP, in consultation with the Steering Committee and the County, continues outreach to municipalities, large customers and other key stakeholders, and the public. Steering Committee meets monthly to develop consensus on CCA policy values and goals (e.g., environmental, economic development, performance, rates and rate stability), and to give input on and hear reports on the research described below. (Note: Steering Committee will not have access to granular data from the utility.)

- Consultants undertake preliminary planning study, including analysis of load data together with collection and assessment of resource data, and local information on potential barriers such as zoning and permitting, resulting in a report containing a preliminary analysis of benefits, costs, risks, regulatory and other barriers, and DER commercialization pathways. CLP and consultants collaborate with NYSERDA community resource mapping project, with the goal of providing a template and information that will streamline the data collection and resource mapping process for other NYS communities seeking to implement CCA.
- Steering Committee discusses and adopts a recommendation regarding CCA policy values and goals.
- CLP, with input from the Steering Committee and with legal research assistance from the County, investigates potential institutional forms for the CCA (local development corporation, authority, or other entity), their requirements for formation, and their relative advantages and disadvantages for a CCA. Results are summarized in a report to the Steering Committee that recommends and explains its reason for choosing the institutional and governance structure of the future Ulster County CCA.
- On the basis of preliminary studies and consensus on goals, the Steering Committee makes a formal decision on whether to move forward with CCA development; County/Consultant develops and issues RFP for Resource and Business Planning study, based on findings of the Preliminary Study and CCA policy values and goals.

Phase II Milestones:

- Two preliminary studies completed.
- Recommendation of the Steering Committee on CCA policy values and goals.
- Steering Committee decides whether to proceed with Phase III of CCA development. If there is a decision to move forward:
- Recommendation of the Steering Committee on a CCA governance structure and a process for municipalities to opt in to the CCA.

PHASE III: Resource and Business Planning (8 months)

- CLP, in consultation with the Steering Committee, continues education and outreach to municipalities, key stakeholders, and the public; broad outreach and publicity.
- The preliminary reports are made available to communities and the general public, including municipalities elsewhere that are interested in forming a CCA.
- Consultant is hired and works with Steering Committee to prepare Resource and Business Plan, including collection of any additional data for production of a report that includes detailed mapping of local resources; market, cost, and pricing analysis; load and resource adequacy requirements; supply options; pathway for moving from initial supply contracts to local investment in DER solutions over first several years of CCA existence; financial requirements; and economic development implications.
- The County and/or interested municipalities, in consultation with the Steering Committee, undertake legal and other work necessary to establish the CCA legal entity.
- Development of RFPs for initial supply and build-out options, including long-term power purchase agreements (PPAs) for renewable energy supply.
- Participating municipalities prepare for holding public hearings, referenda or other mechanisms to ensure broad public support of the CCA.

Phase III Milestones:

- Resource and Business Plan completed.
- Legal groundwork laid for CCA formation.

PHASE IV: Formation of Ulster County CCA (8 months)

- Municipalities create legal entity and join CCA through the appropriate legal and public process. Representatives of municipalities that opt in assume powers of CCA governance.
- Consultant develops Implementation Plan, which is then submitted to outside reviewers for evaluation.
- Municipalities hold public hearings on Implementation Plan.

- Consultant to CCA entity gathers indicative pricing and prepares report on rate implications for municipalities and customers to consider.
- CCA entity submits Implementation Plan to PSC for certification.
- Immediately following Implementation Plan certification, CCA procures energy based on RFP offers.
- Member town customers who do not opt out are transferred to the CCA, with 60 day opt out period. (Customers will receive initial rate information, and will continue to be able to opt out later, with exit fees and procedures defined in the Implementation Plan

Phase IV Milestones:

- Interested municipalities join CCA through appropriate public process.
- CCA is formed and begins self-financing its operations and programs.

CLP ATTACHMENT III

DATA REQUEST LIST

The following data is requested for the Ulster County CCA Demonstration Project, to be protected under strict Non-Disclosure Agreements:

Aggregate Data

1. Aggregate usage (kWh) by rate schedule, monthly or bimonthly as applicable: energy consumption (kWh) for the most recent 60 months of complete information for each customer class for a given period of time for each municipality in Ulster County.
2. Aggregate monthly/bimonthly usage (kWh) by political district.
3. Where time of use meters are in place, monthly/bimonthly residential, small commercial, large commercial, industrial, and government kWh usage and/or kW demand aggregated according to applicable Time of Use (TOU; in cases where historic data is available) rates or other meter-specific rates, for example on/off peak, energy and demand, or other breakdowns, as available.
4. Estimation of peak coincident and non-coincident demands by sector for the County.
5. Number of accounts (CH and ESCO) in each class, rate schedule within Ulster County.
6. The aggregate gas and electric usage of all customers, by class served, for the 60-month period preceding the request.
7. The Zone G system peak hour, or hours, that determines capacity buying requirements, and to the degree that it is available the aggregated load factor by class served for the 60-month period preceding the request.
8. Total kWh loads of Central Hudson customers and customers receiving ESCO service, first on a monthly/bimonthly basis and second, annually on a rate schedule basis within the Ulster County service territory, for the past sixty months.
9. Annual aggregate spending by Central Hudson customers and customers receiving ESCO service for energy supply for the past sixty months.

Customer-Level Data: ELECTRIC

10. Customer-specific information (absent names and addresses) from the current billing periods, as well as the prior sixty months, consisting of the following: meter number, latitude and longitude with political district, monthly/bimonthly kWh usage, monthly maximum demand where available, Baseline Zone, low income residential participation (Home Energy Assistance Program or HEAP), End Use Code (Heat Source), Service Voltage, Medical Baseline, Meter Cycle, Bill Cycle, Level Payment Plan and other plans, HP Load and Number of Units, monthly rate schedule for all accounts within Ulster County.

Customer-Level Data: GAS

11. Natural gas consumption and billing data for all customers (absent names and addresses) located within the service area boundaries of Ulster County, including customer/meter data, consumption data at the most granular interval available, monthly bills with unbundled charges, and all data necessary to calculate those charges.
12. Clarification and datasets used to associate gas meters with electric meters at the building level and customer level.

System Data

13. System-wide residential and non-residential load shapes for Zone G for the most recent sixty months for which Central Hudson has complete information.
14. Standard system average load profiles by rate class, also referred to as Dynamic Load Profiles and Static Load Profiles, within Ulster County and/or Zone G as available.
15. Data fitting Ulster County's annual usage to New York Control Area load shapes; estimation of peak coincident and non-coincident demands.
16. All electricity usage data, latitude and longitude of meter and meter number at the shortest time-interval recorded by interval meters on all Central Hudson distribution systems (e.g., substations and feeders) within Ulster County in the past sixth months, including substation dynamic load data, latitude and longitude of meter and meter number.

17. Shapefiles or other geographic descriptions of territories served by substations and feeders.
18. Best available research meter data to describe time-of-use by end use and customer class.

DER Build-Out Data

19. Quarterly or monthly aggregated participation data for Central Hudson energy efficiency programs.
20. All energy efficiency program data for each customer (by account number, service ID number, latitude/longitude, etc.), listing all recorded activity and information, including but not limited to on-site or online audits, benchmarking, retro-commissioning, and energy use analyses and efficiency recommendations, and paperwork filed by customers or contractors, and financing information, as well as any associated data sets such as building information on tenant/owner occupancy, square footage and year built, and/or rebate code and measure tables, as available.
21. Demand response program participation, when available, and all relevant metrics recorded for these programs.
22. The type of interconnection agreement (IEEE standard) and all relevant metrics associated with customers who have already interconnected distributed generation to the distribution utility's distribution grid.

CLP ATTACHMENT IV

DRAFT PRELIMINARY BUDGET

ITEM	AMOUNT	#	TOTAL
Consulting – Staffing			
Project Management Team/week	$1,950	120	$234,000
Preliminary Study			
CCA Analysis Expert/day	$1,335	75	$100,125
Local Data Expert/day	$800	60	$48,000
Resource and Business Plan			
CCA Analysis Expert/day	$1,335	75	$100,125
Local Data Expert/day	$800	60	$48,000
Implementation Plan and RFP Development			
CCA Analysis Expert/day	$1,335	30	$40,050
Local Data Expert/day	$800	20	$16,000
SUBTOTAL Consulting - Studies			$344,300
Consulting – Other			
Website development, maintenance			$12,000
White Paper			$10,000
Final Report			$10,000

Attorney/hour	$350	30	$10,500
Other consulting			$30,000
SUBTOTAL Consulting - Other			$72,500
Services			
Data hosting & security, per month	$300	30	$9,000
Meetings, events			
Municipal meetings	$150	50	$7,500
Public forums and conferences	$3,000	5	$15,000
SUBTOTAL - Meetings, events			$22,500
Travel			
Auto mileage reimbursement - local meetings	$1	2,500	$1,400
Airfare - CCA Experts	$1,000	6	$6,000
Trips to Albany	$140	30	$4,200
Per diem - CCA Experts (Ulster County rate)	$66	18	$1,188
SUBTOTAL - Travel			$12,788
Materials			
Office supplies			$10,000
Printing			$14,000

Telephone			$3,000
Meals, entertainment	$100	35	$3,500
SUBTOTAL - Materials			$30,500
Subtotal			$725,588
Contingency @ 10%			$72,559
TOTAL			$798,147

ULSTER COUNTY EXECUTIVE

244 Fair St., P.O. Box 1800, Kingston, New York 12402
Telephone: 845-340-3800
Fax: 845-334-5724

MICHAEL P. HEIN
County Executive

ADELE B. REITER
Chief of Staff

ROBERT SUDLOW
Deputy County Executive

KENNETH CRANNELL
Deputy County Executive

March 17, 2015

Audrey Zibelman, Commissioner
New York State Public Service Commission
3 Empire State Plaza
Albany, NY 12223-1350

RE: Case 14-E-0318 Community Choice Aggregation Wave 1 Demonstration Project – Submitted by Citizens for Local Power, in cooperation with Central Hudson.

Dear Commissioner Zibelman:

I am writing in support of the Ulster County Community Choice Aggregation Project (CCA) proposed by Citizens for Local Power(CLP) in the Central Hudson rate case (14-E-0318). CLP as a Party to case 14-E-0318 has proposed a demonstration project on CCA in cooperation with Central Hudson. It is my belief that the planning and exploration process proposed by CLP holds significant potential benefit to the County. The individual residents and municipalities would still retain the ability to decide if CCA is the right choice as part of the planning process. I feel the information about potential renewable energy generation and distributed energy production as well as the focus on efficiency and conservation for both residential and commercial customers is a great benefit to the entirety of Ulster County and support this process.

In addition, in Case 14-M-0101 Reforming the Energy Vision, the Public Service Commission (PSC) emphasized "the priority of demonstration projects involving third party market participants and demonstrating business models and customer engagement (p.115)." Customer engagement is obviously critical to the success of a CCA. Any CCA demonstration project must give customers and municipalities a clear opportunity to join a CCA. To date, CLP has done extensive outreach work to inform the public about CCA including organizing two forums for the public and municipal officials, all of which were co-sponsored by local governments and/or Ulster County. There have been numerous meetings with municipal leaders and letters of support for CCA have been signed by the Town of Rosendale and the City of Kingston (entered into the Commission's Record at the Hearing on February 4, 2015, in Kingston). CLP has assured me of their commitment to continue this outreach work.

Finally, I believe Ulster County is the appropriate venue for this demonstration project. It offers a diverse economic base of small businesses and a range of income levels. Its geographic extent and land use pattern offer opportunities to take advantage of solutions that can generate system load efficiencies as does its availability of water and solar generation resources and presence of large institutional users where combined heat and power or mico-grids may be feasible. The County also has a high number of early adopters of solar and an engaged citizenry on environmental issues. Ulster County government has committed to taking aggressive steps to protect the environment, having recently achieved net carbon neutrality, and we support the planning process surrounding CCA and the exploration of implementation as a way to further our collectively vision of a more sustainable Ulster County.

Sincerely,

Michael P. Hein
County Executive

Ulster County Association of Town Supervisors & Mayors

March 15, 2015

Audrey Zibelman, Chair
New York State Public Service Commission
Empire State Plaza
Agency Building 3
Albany, NY 12223-1350

Dear Chair Zibelman:

As the Supervisor of the Town of Rochester and President of the Ulster County Association of Town Supervisors and Village Mayors, I would like to express my strong support for the Ulster County Community Choice Aggregation (CCA) demonstration project proposed by Citizens for Local Power (CLP) as part of the Central Hudson rate case. I would like to encourage the Commission to dedicate to this project a portion of the funds set aside in the Central Hudson rate plan for demonstration projects. This funding will be needed to undertake the technical analyses and carry out planning for a model of CCA that seeks to strengthen our reliance on local, distributed energy resources.

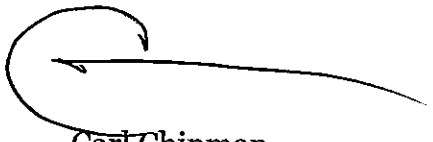
Over the past couple of years, as President of the Ulster County Association of Supervisors and Village Mayors, I have worked closely with CLP to inform and educate municipal officials and the public on energy issues affecting our communities, and to lay the groundwork for CCA in particular. The Association co-sponsored with CLP and the Ulster County Planning Department a very successful forum on CCA attended by over 100 municipal officials and community members. The panel for the forum included experts and municipal officials involved in different CCAs in Massachusetts and California, who provided valuable insights into the variety of approaches they have taken. I have personally moderated two other informational forums

organized by CLP, and have been impressed by the extent of interest in CCA among citizens and municipal colleagues. I spoke in support of CCA at the March 11 rate case hearing in Kingston.

In Ulster County, I believe we have the capacity, will, and support across the political spectrum to make a CCA demonstration project into a model that can help other communities in upstate New York take an energy-planning based approach to CCA. The result can offer important lessons for, and assistance to, these communities as they develop their own CCA programs.

Some months ago I accompanied CLP to a meeting with you and members of your staff in Albany, at which CCA was discussed. I greatly appreciate your interest and thank you in advance for your attention to this important matter.

Sincerely,



Carl Chipman
President

Testimony Presented at the meeting of the Public Service Commission
Kingston City Hall, Kingston, NY
March 12, 2015

Dear Public Service Commission members,

We are aware that the Public Service Commission has included Community Choice Aggregation (CCA) in its "Reform the Energy Vision" (REV) proceedings for New York and in December 2014 Governor Cuomo named it as one of five key energy initiatives.

The City of Kingston, county seat of Ulster County, applauds the PSC and the Governor for taking the initiative to consider actions that will enable municipalities to introduce Community Choice Aggregation (CCA). We ask that you to ensure that the regulations give municipalities in New York State the full range of tools to become more resilient, achieve greater control over energy resources, and grow the local economy.

The Public Service Commission (PSC) has issued a call for demonstration projects, which the Commission views as an important step in implementation of Reforming the Energy Vision (REV) policy, and has called for proposals for demonstration projects as part of utility rate cases. The parties to the Central Hudson rate case are currently developing utility and third-party demonstration project proposals to recommend to the Commission for approval, and have agreed to set aside funding to support those projects.

On behalf of the City of Kingston, I am here to express our strong support for the proposal by Citizens for Local Power for an Ulster County Community Choice Aggregation (CCA) demonstration project, including funding for investigating and planning CCA formation. This support is evidenced by the testimony submitted on behalf of Mayor Shayne R. Gallo at the January 28, 2015 PSC meeting in Kingston City Hall and by Resolution #60 of 2016 passed by Common Council by unanimous vote on March 10, 2015 and signed by the Mayor.

Community Choice Aggregation (CCA) has been identified by the Commission as one promising means of achieving REV goals, and an Ulster County CCA demonstration project will provide valuable information on the potential for an energy-planning-based model of CCA in New York. We are particularly interested in this model based on its potential for increasing energy reliability, resiliency, and local jobs. A CCA demonstration of this type can also provide templates for other New York communities that share these goals and are interested in pursuing a model of CCA that encourages local investment in distributed energy resources.

Gregg Swanzey, Director
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CITY OF KINGSTON

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SHAYNE R. GALLO
MAYOR

Phone (845) 334-3902
Fax (845) 334-3904

February 3, 2015

Audrey Zibelman, Chair
NYS Public Service Commission
Empire State Plaza
Agency Building 3
Albany, New York 12223-1350

Dear Chairwoman Zibelman

We are aware that the Public Service Commission has included Community Choice Aggregation (CCA) in its "Reform the Energy Vision" (REV) proceedings for New York and in December 2014 Governor Cuomo named it as one of five key energy initiatives.

The City of Kingston, county seat of Ulster County, applauds the PSC and the Governor for taking the initiative to consider actions that will enable municipalities to introduce Community Choice Aggregation (CCA). We ask that you ensure that the regulations give municipalities in New York State the full range of tools to become more resilient, achieve greater control over energy resources, and grow the local economy.

In the mid-Hudson Valley, we are acutely aware of the need to do more to solve our energy issues. As a result of storms Irene, Lee, and Sandy and severe winter peak price hikes last year, followed by the imposition of the New Capacity Zone (NCZ), an unfairly imposed rate hike of 6-10% from the Federal Energy Regulatory Commission (FERC), we believe more than ever that collective efforts are required to address our energy supply needs. We support Community Choice Aggregation (CCA) as a tool that, with State enabling action, empowers municipalities to aggregate energy supply, stabilize energy costs and encourage clean energy investments that align with community energy goals.

CITY OF KINGSTON

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SHAYNE R. GALLO
MAYOR

Phone (845) 334-3902
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Through energy planning based on an assessment of local renewable energy resources and granular load and grid data, CCAs enable towns and cities to unleash their potential to expand investment in local renewable energy, energy efficiency and demand management. In this way, CCAs can be an important tool for meeting New York State's energy goals at the same time as they contribute to economic development. Instead of sending our energy dollars elsewhere, we can build stronger local economies and keep jobs at home.

Finally, CCAs afford transparency and accountability in energy decision-making and ensure adherence to State procurement regulations that protect customers. They are uniquely positioned to involve their residents in taking steps to introduce energy efficiency and renewable generation.

To achieve these goals, municipalities that are planning to form a CCA need access to granular data (not just aggregated data) *before* the CCA program is created. This is necessary in order for our planning to include the formulation of renewable energy and energy efficiency goals and implementation strategies from the outset. This level of forward planning will also better positions CCAs to seek the financial resources they will need to build out distributed energy resources over a period of years or decades.

Enabling a strong version of CCA in New York will position our communities to achieve local, regional and state energy goals to the benefit of our electricity consumers and our local economy.

We ask you to ensure that CCA is available to New York's towns, cities and counties in a flexible form that will allow communities' elected bodies to make the region more resilient and less dependent on volatile fossil fuels, while enhancing investment in the local economy.

Sincerely

Shayne R. Gallo
Mayor

RESOLUTION #60 of 2015

MEMORIALIZING RESOLUTION OF THE COMMON COUNCIL OF THE CITY OF KINGSTON, NEW YORK, SUPPORTING THE NYS PUBLIC SERVICE COMMISSION'S STUDY TO BRING COMMUNITY CHOICE AGGREGATION (CCA) TO NEW YORK STATE

Sponsored by: General Government / Public Safety Committee
Aldermen Carey, Seche, Mills, Will, Brown

WHEREAS, New York State is currently considering actions that will enable municipalities to introduce Community Choice Aggregation (CCA); and

WHEREAS, enabling a strong version of CCA in New York will position communities to achieve local, regional and state energy goals to the benefit of our electricity consumers and our local economy;

NOW, THEREFORE, BE IT RESOLVED BY THE COMMON COUNCIL OF THE CITY OF KINGSTON, NEW YORK, AS FOLLOWS:

SECTION 1. That the Common Council of the City of Kingston hereby authorizes a letter of interest to be signed by the Mayor and sent to the NYS Public Service Commission in support of their study to bring Community Choice Aggregation (CCA) as a viable energy distribution option to New York State.

SECTION 2. That this resolution shall take effect immediately.

Submitted to the Mayor this _____

day of_____2015.

_____
CARLY WILLIAMS, CITY CLERK

Approved by the Mayor this _____

day of_____2015.

_____
SHAYNE R. GALLO, MAYOR

Adopted by Council on

CCA

Town of New Paltz, New York
Susan Zimet, Town Supervisor
PO Box 550 • 1 Veterans Drive • New Paltz, NY 12561
Phone: 845/255.0604 • TTY: 800/622.1220 • Fax: 845/255.4084
www.townofnewpaltz.org

The Hon. Audrey Zibelman
Chair
NYS Public Service Commission
Three Empire State Plaza
Albany, NY 12223-1350

CC: Parties to the Central Hudson Rate Case Collaborative on REV Demonstration Projects

March 16, 2015

Dear Chairwoman Zibelman:

As Supervisor of the Town of New Paltz, NY, in Ulster County, I would like to ask the Public Service Commission (PSC) to support the Ulster County Community Choice Aggregation (CCA) demonstration project that is proposed by Citizens for Local Power (CLP) in the context of the Central Hudson rate case, and to secure the funding so it can go forward.

The Town of New Paltz is keenly aware of the impacts energy policy and prices have on our citizens. Many of them express concerns about resiliency and reliability, and about rate stability. They want to keep jobs local and strengthen the local economy. Many of them are outspoken about their desire to reduce their reliance on fossil fuels and increase renewable energy. Most importantly of all, they want a say in making decisions about their energy future.

CCA seems like a perfect tool for achieving all these things. Citizens for Local Power has been laying the groundwork for CCA in Ulster County through their education and outreach programs, and we would look forward to working with them and Ulster County to make the demonstration project successful.

Thank you for your consideration of this request.

Sincerely,

Susan Zimet

Susan Zimet
Town Supervisor, Town of New Paltz

PO Box 423
Rosendale, NY 12472

(845) 658-3159
Fax (845) 658-8744

Jeanne L. Walsh
Rosendale Town Supervisor

March 12, 2015

Dear Members of the Public Service Commission,

As Supervisor of the Town of Rosendale I have participated in meetings organized by Citizens for Local Power on Community Choice Aggregation and I see it as a promising tool for addressing energy issues that our community members face, including rising and fluctuating energy prices and an over-reliance on imported fossil fuels.

Energy costs are particularly tough on our local businesses, residents and on municipalities for the running of public facilities that service our community. The 2.0 version of Community Choice Aggregation that we want to explore at this meeting, addresses these energy concerns while also potentially creating much needed jobs and supporting our local contractors and companies in the energy efficiency and renewable energy business.

We urge the Public Service Commission to support the Ulster County Community Choice Aggregation demonstration project as well as the request for allocating a portion of the funds for this project that have been set aside for demonstration projects in the Central Hudson rate case.

Thank you,

Jeanne L. Walsh
Supervisor – Town of Rosendale