



Consolidated Edison Company of New York, Inc.

Request for Information (RFI)

Non-Pipeline Solutions to Provide Peak Period Natural Gas System Relief

2020

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Introduction

Consolidated Edison Company of New York, Inc. (the “Company” or “Con Edison”) is extending a request for information (“RFI”) for the submission of Responses from qualified and experienced vendors, suppliers, and customers (“Respondents”) with the capability to deliver innovative Non-Pipeline Solutions that provide natural gas supply or Demand Relief during Peak Days and peak periods. The Company previously issued a solicitation for Non-Pipeline Solutions in December 2017 and executed on some of the proposals received. Con Edison has identified gaps in market segments and technologies of its combined portfolio of energy efficiency, demand management and gas supplies. Con Edison is issuing this RFI to pursue additional new ways to meet customer needs on Peak Days by expanding our portfolio. Defined terms used and not otherwise defined in the body of this document or its attachments or appendices shall have the meanings provided in the Definitions section below.

Background

Consolidated Edison, Inc., is one of the nation’s largest investor-owned energy companies, and provides a wide range of energy-related products and services to its customers through its two regulated energy distribution subsidiaries: Consolidated Edison Company of New York, Inc., (Con Edison or the Company, as defined above) which provides electric, gas and steam services to New York City and Westchester County; and Orange & Rockland Utilities, Inc. (“O&R”), which provides electric and gas services in Rockland County and Orange County of New York State, and also parts of New Jersey. This RFI is specific to Con Edison, which provides electric service to approximately 3.3 million customers and gas service to approximately 1.1 million customers.

Definitions

Alternative Fossil Fuel Supplies: Supplies of natural gas and/or other combustible hydrocarbons, such as butane or propane, produced by conventional means and suitable for injection into Con Edison’s Distribution System. Alternative Fossil Fuel Supplies include temporary deliveries of supplies delivered to Con Edison’s natural gas service territory by means other than interstate natural gas pipeline, such as trucks, ships or barges. Alternative Fossil Fuel Supplies also include local storage of pipeline-delivered gas supplies as CNG or LNG.

Benefit-Cost Analysis (BCA): The use of consistent and transparent methodologies that calculate the benefits and costs of potential demand side projects and investments to weigh the relative value to the Company of those initiatives, and as shall be informed by the “Interim Benefit-Cost Analysis Handbook for Non-Pipeline Solutions” filed with the New York State Public Service Commission by the Company on September 28, 2018 and any successor handbook or manual. Additional information on the major benefit and cost streams are detailed in Appendix C of this RFI.

Compressed Natural Gas (CNG): Natural gas in high-pressure containers that is highly compressed (though not to the point of liquefaction) that can be used as a transportation fuel or as an alternative source of supply when injected into the Distribution System, and that can be transported overland from the point of compression to the point of injection in high-pressure containers, or compressed and stored on site for injection in the Distribution System at a later time.

Dekatherm or Dt: A unit of heating value equivalent to 10 therms or 1,000,000 British Thermal Units (Btu) that is typically used as a measure of the energy content of natural gas and that is also the unit of purchase for most natural gas.

Delivered Services: Short-term (typically 1 to 5 years) products that provide firm natural gas delivered to the Con Edison “city gate” for a specified number of days during the Winter Season, offered by third parties that have firm primary delivery point contractual rights to pipeline capacity.

Demand: The level of need for natural gas at a specific location or customer end use.

Distribution System: Con Edison’s gas distribution mains and services.

Firm Gas Customer: A Con Edison natural gas customer offered service (regardless of class of service) under schedules or contracts that anticipate no interruptions.

Gas Day: 24-hour period beginning at 10:00 AM Eastern Standard Time

Hydrogen Blending: The commingling of hydrogen produced through electrolysis or other industrial processes into the natural gas stream.

Interruptible Customer: A Con Edison customer offered natural gas service under schedules or contracts that anticipate and permit interruption on short notice, generally in peak-load seasons.

Liquefied Natural Gas (LNG): Natural gas that has been liquefied by reducing its temperature to minus 260° F at atmospheric pressure. LNG can be transported overland from the point of liquefaction to the point of injection in cryogenic containers, or can be liquefied and stored on site for vaporization and injection in the Distribution System at a later time. LNG remains a liquid at minus 116° F and 673 psig; in volume, it occupies 1/600 of that of the vapor at standard conditions; it can be used as a transportation fuel or as an alternative source of supply when vaporized and injected into the transmission or distribution gas system.

Measure: Individual Non-Pipeline Solutions included by a Respondent in a Response.

MMBTU: A unit of heating value equivalent to 1 million British Thermal Units (BTU) that is typically used as a measure of the energy content of natural gas, heating oil and other fossil fuels.

Non-Pipeline Solution(s) (NPS): A demand-side or supply-side solution (whether a singular project or a portfolio of multiple projects) that allows Con Edison to reduce the amount of natural gas supplied to the Con Edison distribution system on peak winter days for use by Con Edison’s Firm Gas Customers.

Peak Day: The coldest day to which Con Edison plans its gas system and supply portfolio to meet the full requirements of Firm Gas Customers, which is currently any day where the average temperature is 0° F (Fahrenheit) or lower.

Pipeline Capacity: The maximum quantity of gas that can be moved contractually through a pipeline system at any given time based on existing service conditions such as available horsepower, pipeline diameter(s), maintenance schedules, and regional Demand for natural gas.

Planned Gas DR Event: Con Edison’s request for Relief when event notification is issued at least 21 hours in advance and the Company’s prior-day weather forecast meets the event calling criteria.

Power-to-Gas: The production of methane, through electrolysis, where the production process is considered to have greenhouse gas emissions benefits.

Relief: A reduction in Demand or an increase in local gas supply that reduces or offsets the Peak Day gas requirements in Con Edison’s gas service territory.

Renewable Natural Gas or RNG: A form of methane usable as fuel that comes from organic sources such as landfill waste, sludge, agricultural residue and food waste, and considered to have greenhouse gas emissions reduction benefit due to its production from organic waste.

Respondent: A person and/or entity, or a representative thereof, replying to this RFI.

Response: A package submitted to Con Edison by a Respondent that explains Respondent’s Non-Pipeline Solution(s) and that complies with all requirements outlined in this RFI.

Snap Back Effect: And occurrence when Demand reductions that result in energy savings during a Demand reduction period are partially or fully offset by additional energy use immediately after the period causing a “snap back” in energy use.

Sustainable Supply Solutions: Supplies of natural gas or alternative gaseous fuels produced by unconventional means and having a beneficial impact on greenhouse gas emissions. Sustainable Supply Solutions include, but are not limited to, including RNG, Hydrogen Blending, and Power-to-Gas.

Therm: A unit of heating value equivalent to 100,000 British thermal units (Btu).

Winter Season: From November 1st through March 31st.

Overview

This RFI solicits responses from Respondents that have qualifications to supply Con Edison with Non-Pipeline Solutions to reduce or offset Peak Day natural gas demand in Con Edison's gas service territory. Con Edison is pursuing additional new ways to meet customers heating needs by expanding our portfolio of energy efficiency & demand management offers and sources of gas supply, based on the general approaches described below. To assist Respondents, this RFI provides information on the types of approaches that are underserved by our existing portfolio. However, Con Edison is requesting all innovative approaches to provide Relief, hence the types of approaches described below should be considered illustrative only and not prescriptive.

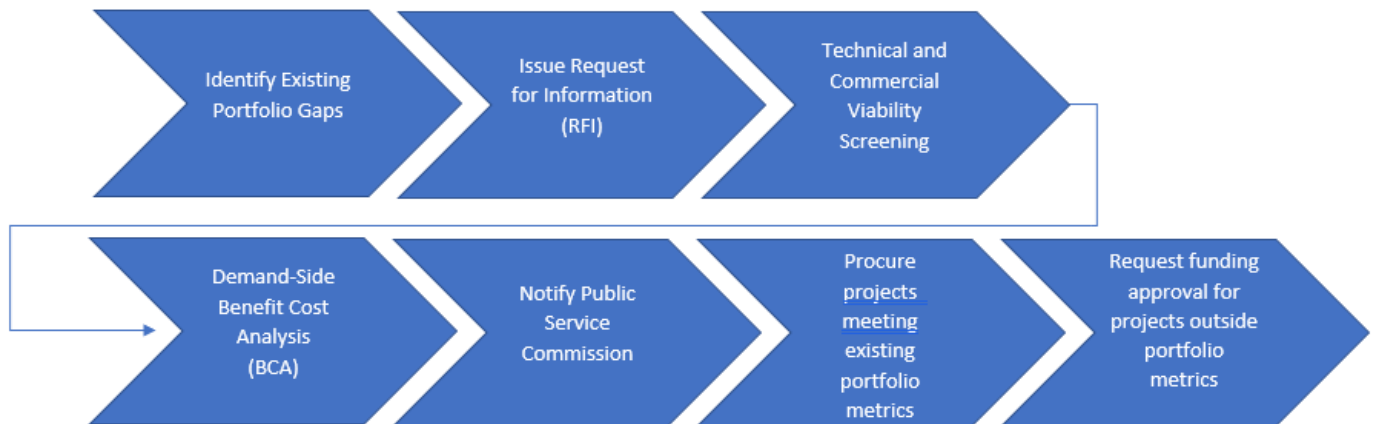
This RFI is open to all NPS projects that display the potential to provide Relief within Con Edison's natural gas service territory, consistent with current environmental policy, applicable laws and regulations, and reliable operation of Con Edison's gas system. Proposed solutions should decrease Peak Day gas Demand, provide an electric alternative for a gas heating use or increase Peak Day gas supply. They should also support system reliability, and be cost effective for Con Edison's customers. Con Edison intends to incorporate a variety of projects that will increase the diversity of its portfolio and increase benefits to customers.

Con Edison expects that each Response to this RFI should at a minimum provide a plan for a potential supply-side alternative to pipeline delivered natural gas or Peak Day demand reduction or electrified heating, and a timeline for implementation as outlined in the [Non-Pipeline Solutions RFI Response Requirements](#) section of this RFI. Technology types with limited availability or performance duration, such as storage should also include the maximum hourly duration of the solution's ability to provide Relief, the total annual number of days and number of consecutive days that the solution would be available at its maximum hourly duration, and the time required to restart or refill capacity. Respondents are also expected to demonstrate financial and technical capability to develop, construct and operate the proposed solution(s) such that the anticipated benefits can be realized. In addition, as an appendix, the cost for completing and operating the solution(s), a project development and funding plan or response and for Demand side solutions, a fully completed **NPS Questionnaire (Attachment A)** must be included. Further details about submission requirements appear in the [Non-Pipeline Solutions RFI Response Requirements](#) section of this RFI.

Respondents are permitted to propose compensation arrangements and commercial terms appropriate to their proposed projects. Con Edison will consider the risks and costs in connection with the proposed terms during its evaluation process. All solutions would be subject to verification milestones to ensure it is on track to provide Peak Day relief, may require a security deposit and will be subject to underperformance fees.

Non-Pipeline Solutions High Level Process

The process shown below is an example of the high-level steps with multiple actions in between each step that occur prior to contracting identified solutions. Please note that supply and demand side solutions have different funding mechanisms which impacts their progression paths.



Non-Pipeline Solutions Project Description

Project Description

Con Edison has established a moratorium on new firm gas connections in portions of Westchester. A solicitation for Non-Pipeline Solutions was previously issued in December 2017 and the Company executed on some of the proposals received in that December 2017 solicitation, launching a variety of Non-Pipeline Solutions for customers across our entire gas service territory, with a focus on Westchester County. The goal of this RFI is to identify additional solutions not served by our existing programs that will reduce customer loads, offer an efficient electric heating alternative or provide new supply that is not delivered by a pipeline that are complementary to our existing portfolio. The primary capacity constraint is for daily deliveries of natural gas into Con Edison’s service territory from upstream pipelines; the Company’s internal distribution capacity is adequate to meet fluctuations in customer Demand throughout the day. As a result, NPS projects must be able to provide Relief for a minimum of 24 consecutive hours at least 5 days per Winter Season, including 3 consecutive days for the coldest days of the year, to be useful to Con Edison with maximum value provided at 30 days. The duration of relief needs to be at least 3-5 years with longer periods up to 10 years preferred.

Con Edison has already been authorized as part of New Efficiency New York to spend \$174.5 million on gas energy efficiency measures and heat pump projects from 2020 to 2022. The Company has also been authorized to collect costs for alternative supply sources through our existing gas commodity cost recovery mechanisms, which would allow us to fund more non-pipeline supply assets. Con Edison is seeking multiple additional solutions for integration with the existing portfolio of demand-side and alternative supply-side solutions to increase the benefits to a variety of customers.

Each Respondent's submission must at a minimum provide the following:

1. At least 100 Dt/day of Relief in the aggregate on the Peak Day, with a strong preference for submissions that provide more than 250 Dt/day of Relief
2. A net reduction in Firm Gas Customer load or increase in local gas supply over a 24-hour period corresponding to the Peak Day beginning at 10 AM. Note that Relief does not necessarily need to be provided in *each* hour of the 24-hour period, but there must be a net load reduction or increase in supply over that period
3. A net reduction in Firm Gas Customer load, or increase in local gas supply, on at least 5 days per Winter Season when Con Edison needs Relief, which typically would be the coldest days of the year. In addition, Respondents will be required to provide load reductions or supply increases on at least 3 consecutive days

Eligible Projects

This RFI is open to a broad array of potential NPS projects, recognizing that the Responses must reduce peak day gas demand, provide new non-pipeline sources of supply or offer an efficient electric heating alternative in a safe, cost-effective, reliable and environmentally-sound manner. This RFI is open to innovative NPS approaches, and the Company's objective is to identify multiple complementary additions to our existing portfolios. For demand-side NPS responses, the RFI is open to applications directly by end-use customers, project developers with specific customers identified, and project developers that have not yet identified customers, as long as the responses meet the eligibility criteria for minimum size and provide benefits identified as desirable by this RFI. For supply-side NPS proposals, the RFI is open to Proposals that include transportation or storage service, with or without the provision of commodity, and to Proposals to locally produce natural gas or alternative fuels (e.g. hydrogen).

Con Edison expects to receive varied demand-side reduction Responses as well as alternative supply-side Responses from market participants. The Company is particularly interested in NPS Responses in the following areas, but is open to other solutions that meet the eligibility criteria for this RFI:

- 1) Energy efficiency measures that reduce Peak Day Demand by Firm Gas Customers
 - Weatherization of non-residential customers
- 2) Measures that convert existing firm gas, current oil heating or new construction in Con Edison's gas service territory to efficient electric applications
 - Electrification of non-residential (including multifamily), space heating and/or hot water heating, including installation of geothermal and cold-climate air-source heat pumps
 - Dual-fuel gas/electric space heating or water heating applications, that switch Firm Gas Customers from natural gas to electricity or other low carbon fuel during peak Demand periods
 - Space heating and/or hot water for new construction, including multifamily, that is exclusively efficient electric applications
 - Residential or commercial appliances such as electric induction ranges and heat pump clothes dryers

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- 3) Demand response measures that reduce Peak Day natural gas Demand of Firm Gas Customers not similar to Con Edison's [Gas Demand Response Pilot](#)
 - Gas curtailment or usage reduction by customers
 - Installation of Thermal energy storage measures
 - Installation of electric devices capable of replacing or reducing natural gas use during Peak Days
 - Installation of controls (e.g. allowing direct control of water heater temperatures) to enable the participation of Firm Gas Customers in Demand Response programs
 - Other innovative demand response measures
 - 4) Sustainable Supply Solutions gas service territory-wide
 - Renewable Natural Gas options, produced locally
 - Power-to-gas
 - Hydrogen blending
 - 5) Alternative fossil fuel Peak Day/peak period supply options exclusively for the Westchester moratorium area
 - CNG or LNG by barge or ship
 - CNG or LNG storage
 - LNG liquefaction
 - Delivery of propane, butane or other fossil fuels suitable for injection into Con Edison's distribution system in limited quantities
 - Other innovative supply-side solutions

Additional considerations and information specific to individual types of solutions are included in [Appendix B](#).

Areas of Need

Although Con Edison's need for Relief is system-wide, the value of a proposed NPS to Con Edison will vary based on the location of the NPS project. Con Edison will place a higher value on proposed solutions that provide Relief in the zones with the highest assigned value, and will prioritize incorporating those projects in the portfolio. The map below divides the Con Edison gas service territory into three zones, indicating the relative value of NPS in each zone. The value of NPS projects by zone can generally be ranked as shown in Table 1.

Table 1. Location and value of zones for Non-Pipeline Solutions within Con Edison’s Gas Service Territory.

Zone	Value	Description
1	Highest	Westchester moratorium area
2	Significant	New York City portion of Con Edison’s gas service territory
3	Moderate	Westchester north of moratorium area within Con Edison’s Gas Service Territory

Specific information about the zip codes comprising each zone shown in Figure 1 appears in [Appendix D](#). Respondents are encouraged to consult Appendix D when developing customer acquisition and marketing plans for demand side Measures or when selecting locations for supply side Measures. For projects under consideration near the boundaries of each zone or near the boundaries of Con Edison’s gas service territory, Respondents are encouraged to seek confirmation from Con Edison on the exact boundaries of each zone. For projects being considered in zip codes that are also served by other gas utilities, that are adjacent to the service territories of other utilities, or where access to gas service is limited, Respondents should confirm that the customer or location in question is in fact an eligible Con Edison Firm Gas Customer or is located in Con Edison’s gas service territory.

Figure 1 provides a simplified representation of Con Edison’s gas system needs, and is intended as general guidance only. Con Edison expects to evaluate the impacts of particular solutions or combinations of solutions under a variety of potential conditions. Depending on those conditions and the specific projects received, the value of Relief provided by projects in a particular location may vary.

Targeted Area

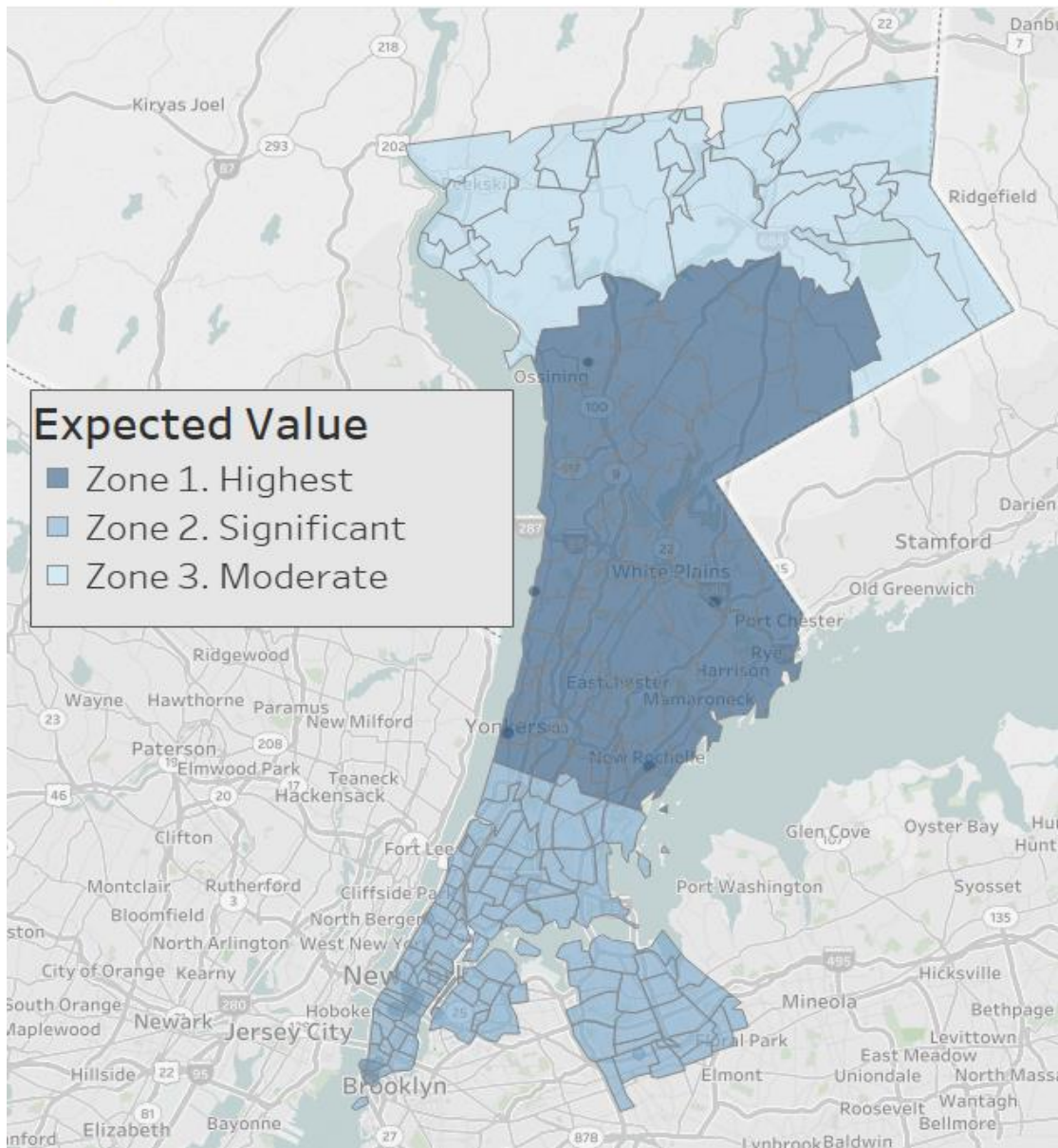


Figure 1. Approximate Boundaries of Con Edison’s Natural Gas Service Territory and the Zones Most Affected by Gas Supply Constraints

It is Con Edison’s desire to build a portfolio of Non-Pipeline Solutions that includes multiple Responses in all zones highlighted above. In the **NPS Questionnaire (Attachment A)**, which is mandatory for demand-side solutions, Respondents are given an opportunity to indicate whether their proposed solution is specific to a particular zone(s), or will be implemented in multiple zones. Respondents proposing supply-side solutions are also encouraged, but not required, to identify possible locations.

Scale & Timing of Opportunity

The Company seeks additional Non-Pipeline Solutions to fill gaps in our existing NPS portfolio, supplement its pipeline-delivered supplies, and assist customers in making demand reductions on Peak Days or converting to efficient electric heating. Through this RFI, the Company is turning to the ingenuity of the market for the best Responses to help address this need. Individual customer Responses must be of sufficient size to contribute meaningfully to Con Edison’s efforts to reduce Peak Day Demand and acquire additional supply resources. Respondents proposing to provide Relief of less than 100 Dt/day of Peak Day savings will not be considered and preference will be given to Responses that provide 250 Dt/day of Relief or more. Respondents are encouraged to provide the greatest Relief possible and may also propose variants on their approach. For example, a dispatchable resource could offer to be available for more days, to be activated more quickly, or provide a greater quantity of Relief, depending on the compensation provided. Responses should be specific about levels of performance that would be provided, and the compensation required.

Given the current moratorium in Westchester, Responses that provide Relief as soon as November 2021 are most valuable to the Company and will be preferred. All responses are required to provide Relief for at least three to five years, depending on the measure employed. Demand response measures will be required to provide a minimum of three years of Relief, while other measures must commit to provide at least five years of Relief. Responses providing up to 10 years of Relief are preferred.

Measure	Preferred In-Service Date	Min. Duration	Max. Duration
Demand Response	Nov. 2021	3 years; 10+ preferred	NA
Demand-side (non-DR)	Nov. 2021	5 years; 10+ preferred	NA
Alt. Fossil Fuel Supplies	No later than Nov. 2024	5 years; ≤10 preferred	20 years
Sustainable Supply Solutions	NA	5 years	20 years

The Company may require financial assurances to ensure that Non-Pipeline Solutions will be installed and operational in accordance with the timeline provided for an in-service date. Failure to meet contracted milestones may result in underperformance fees.

Alternative Fossil Fuel Supplies are intended to provide temporary Relief while more sustainable measures are developed and deployed. Respondents proposing such supplies should endeavor to bring their projects on-line as soon as possible, and must be in service no later than November 2024. They also must agree to provide 5 or more years of Relief, and should not expect to contract for more than 10 years. Respondents proposing Sustainable Supply Solutions may propose projects that will enter service at a date appropriate for their technology and development plan. Sustainable Supply Solutions, like Alternative Fossil Fuel Supplies, must provide service for at least 5 years. However, Con Edison may be willing to enter into contracts longer than 10 years with Sustainable Supply Solutions if they could potentially assist in meeting city or state climate goals. Con Edison does not intend to enter into any contracts having a for a term longer than 20 years for either Alternative Fossil Fuel Supplies or Sustainable Supply Solutions.

Value of Opportunity

Con Edison has already been authorized as part of New Efficiency New York to spend \$174.5 million on gas energy efficiency and heat pump projects from 2020 to 2022. The Company has also been authorized to collect costs for alternative supply sources through our existing gas commodity cost mechanisms, which would allow funding for more for non-pipeline supply assets. New demand-side solutions should be of the scale New Efficiency New York targets and supply-side solutions that provide immediate relief in Westchester or long-term sustainable supplies across the service territory of all sizes will be considered.

Responses will be evaluated based on their scale, location, cost-effectiveness, feasibility, timing and environmental sustainability. Con Edison has provided guidance on the [Response Evaluation Criteria](#) and is committed to procuring cost-effective solutions. Respondents must identify other potential revenue streams or funding sources that may be utilized to mitigate funding requested from the Company (including City, State, and Federal funding, in the form of grants, tax credits or other incentives, participant contributions or third-party revenue streams) in the **NPS Questionnaire (Attachment A)** for demand-side solutions or a detailed explanation of project costs must be submitted as an attachment for supply-side solutions. Con Edison is prepared to give additional weight to Responses that achieve other significant savings or provide other significant social benefits. These could include avoided infrastructure development costs within the Con Edison gas service territory, reduced emissions, increased gas system reliability, social value associated with benefits to low income customers, and other factors.

Duration of Peak Reduction Requirements

Responses must provide Con Edison with a net Peak Day Demand reduction, or with an increase in local supply during a Peak Day, measured over a minimum 24 hour period. The natural gas system has an inherent capability to store natural gas within the supply day (for example, by increasing pressures prior to peak hours), but in order to reduce Peak Day pipeline capacity needs, the net reductions must occur for a 24-hour period beginning at 10:00 AM Eastern Standard Time. This requirement influences the design of the Company's program: individual customer actions that shift gas consumption from one portion of the Gas Day to another portion of the Gas Day without achieving a net reduction of gas usage over the Gas Day do not provide the necessary Relief. Similarly, the value of demand response measures is reduced if there is a Snap Back Effect that increases natural gas consumption above baseline levels to recover heat subsequent to the period of demand reduction but during the 24-hour Gas Day or longer period that Relief is required.

In addition to the requirement that Responses provide net Relief over a 24-hour period, the value of NPS projects to Con Edison will depend both on the solution's flexibility and its availability to provide Relief during the coldest winter conditions. In general, the more days a solution is available during winter peak periods, including consecutive multi-day periods, the more it will be preferred by Con Edison. The specific days that the NPS projects are needed will be driven by ambient air temperature. The daily volume of natural gas required is strongly dependent on temperature, and the Company uses NPS projects to reduce or offset demand on the coldest days.

The opportunities and requirements for NPS measures at specific temperature levels are discussed in more detail below:

-
- The proposed measure (or portfolio of measures) must be available at its expected level of Relief on at least 5 days per Winter Season when Con Edison determines it needs Relief, which will typically be the coldest days of the Winter Season. Respondents should assume that average daily temperatures could fall below 5° F on the 5 days on which they must perform, and that at least one Peak Day could occur (i.e., a day during the winter where the daily average temperature falls to 0° F).
 - Since cold weather days are often consecutive, both demand-side and local alternative supply measures (or a proposed portfolio of measures) must be available at their promised level of relief for at least 3 consecutive days
 - For measures that provide additional supply for a limited number of days per season, such as gas storage, Respondents are encouraged to consider strategies to maximize their resource capacity during Winter Season peak period days. For RNG responses, this could include incorporating compression and storage of RNG to increase peak day capacity. Consideration will also be given to the number of days, and number of consecutive days, that a resource can provide supply during the Winter Season over and above the minimum requirements specified above. In the case of storage measures, the time required for storage to refill or recover will also be a factor
 - Increased availability of resources increases the value of the measure. The maximum Peak Day Relief value of the measure will be reached if the measure is available on at least 30 days per Winter Season. To determine whether a measure will provide Relief for 30 days per Winter Season, Respondents should examine performance under conditions when average daily temperatures may fall below 23° F

Customer Profiles

The following information is provided to assist with the development of Proposals that include demand-side measures. Table 2 details the number and annual gas use of the Company's Firm Gas Customers in each of the targeted zones and represents a potential pool of candidates for Demand-reducing Non-Pipeline Solutions. All Firm Gas Customers, oil heated customers and new construction in Con Edison's gas service territory are potential candidates, including customers who purchase their natural gas commodity through an energy marketer. Customers on interruptible rates are already curtailed on the coldest days, and therefore Interruptible Customers are not candidates for Non-Pipeline Solutions Demand reduction projects but may be able to participate in other existing Con Edison energy efficiency or Demand Response offers. Table 2 does not include information regarding Interruptible Customers.



Non-Pipeline Solutions RFI

Table 2. Aggregated Customer Load and Segment Information for Con Edison Firm Gas Customers by Zone.

Customer Segmentation	Zone 1				Zone 2				Zone 3			
	Heating - Firm		Non-Heating Firm		Heating - Firm		Non-Heating Firm		Heating - Firm		Non-Heating Firm	
	Annual Consumption (Dt)	Customer Count	Annual Consumption (Dt)	Customer Count	Annual Consumption (Dt)	Customer Count	Annual Consumption (Dt)	Customer Count	Annual Consumption (Dt)	Customer Count	Annual Consumption (Dt)	Customer Count
Single Family - Res	11,554,096	86,039	610,860	17,824	8,358,907	73,888	1,108,355	41,103	544,008	6,097	30,468	1,180
Small Multi-Family - Res	2,402,740	17,650	441,775	27,934	10,245,107	59,413	1,265,908	75,533	235,400	2,243	21,952	1,195
Large Multi-Family Res	1,821,270	7,041	270,583	39,976	34,415,620	26,324	3,617,316	464,457	82,373	401	5,205	286
TOTAL	15,778,106	110,730	1,323,218	85,734	53,019,634	159,625	5,991,579	581,093	861,781	8,741	57,625	2,661
Multi-Family Common Area	2,901,430	3,934	688,448	2,245	21,358,494	27,846	3,850,747	16,174	90,836	160	15,901	65
TOTAL	2,901,430	3,934	688,448	2,245	21,358,494	27,846	3,850,747	16,174	90,836	160	15,901	65
Grocery	194,550	346	26,003	132	561,660	1,105	270,233	606	14,320	21	2,683	9
Miscellaneous - Entertainment	560,337	995	88,608	367	1,449,578	2,763	1,140,569	1,364	33,289	69	1,391	19
Nursing Home - Lodging	285,461	312	52,898	132	993,617	1,113	701,309	1,080	20,106	22	9,756	10
Restaurant	439,211	976	675,500	1,010	1,596,050	2,526	4,960,814	5,931	26,970	80	46,703	78
Small Office	2,185,564	5,334	673,537	2,083	5,306,148	10,834	4,741,672	8,286	100,873	444	25,055	126
Small Retail	510,116	2,132	280,352	488	1,500,983	6,243	3,855,030	2,624	24,065	122	9,236	23
TOTAL	4,175,239	10,095	1,796,898	4,212	11,408,036	24,584	15,669,627	19,891	219,623	758	94,824	265
Education	430,713	505	146,588	194	813,488	983	223,055	640	10,109	21	446	2
Hospital	114,605	35	2,901	20	160,900	153	657,774	101	1,062	8		
Large Office	315,728	84	37,648	21	706,451	181	435,279	159	19,706	2		
Large Retail	176,192	158	32,781	20	325,504	346	245,640	107	20,337	16	4,587	1
Warehouse - Industrial	747,567	2,120	386,685	483	1,534,071	4,064	829,375	1,538	69,928	158	1,326,440	32
TOTAL	1,784,805	2,902	606,603	738	3,540,414	5,727	2,391,123	2,545	121,142	205	1,331,473	35

Con Edison is focused on Peak Day Relief, but the quantities provided in Table 2 above are based on annual consumption data. To more closely reflect the Firm Gas Customers’ Peak Day Demand levels that the Company is seeking to reduce, Table 3 below provides illustrative load factors which can be used to estimate daily peak period impacts from annual consumption data, for different customer segments. These are also available for reference in the **NPS Questionnaire (Attachment A)** for demand-side solutions, where Respondents are required to demonstrate the savings of their measures. Respondents are encouraged to use these illustrative factors, but may present their own calculations of a measure’s peak gas day impacts as a supplement, as long as supporting data and explanations are provided to justify the approach.¹

Table 3. Illustrative factors to convert annual gas use to peak use.

Sector	Customer Segment	Equipment End-Use Category			
		Space Heating	Domestic Hot Water	Interior Equipment (Cooking & Laundry Appliances)	Total Facility
Residential	Single Family - Res	2.72%	0.33%	NA	2.02%
	Small Multi-Family - Res	2.72%	0.33%	NA	2.02%
	Large Multi-Family Res	2.72%	0.33%	NA	2.02%
	Smart Thermostat Measure	0.70%	NA	NA	NA
Multifamily	Multi-Family Common Area	4.20%	0.33%	NA	4.20%
	Boiler Energy Management System Measure	0.82%	NA	NA	NA
Small Business	Grocery	1.38%	0.30%	0.27%	1.30%
	Miscellaneous - Entertainment	1.76%	0.33%	0.27%	1.00%
	Nursing Home - Lodging	0.90%	0.34%	0.27%	0.40%
	Restaurant	1.59%	0.34%	0.27%	0.89%
	Small Office	1.31%	0.42%	NA	1.30%
	Small Retail	1.92%	NA	NA	1.92%
Commercial & Industrial	Education	1.64%	0.50%	0.36%	1.59%
	Hospital	0.73%	0.35%	0.27%	0.67%
	Large Office	1.31%	0.42%	NA	1.30%
	Large Retail	1.88%	NA	NA	1.88%
	Warehouse - Industrial	2.45%	NA	NA	2.45%

Non-Pipeline Solutions RFI Response Requirements

This section outlines the requirements for responses to the RFI. Responses including appendices and attachments should be at a minimum 10 pages and no longer than 25 pages. The **NPS Questionnaire (Attachment A)** must be fully completed and submitted with all demand-side Responses. For Responses including supply-side measures, a detailed explanation of project costs must be submitted as an attachment. Failure to complete the specified attachments in detail may result in a Response not being

¹ Con Edison reserves the right to use alternative methods to evaluate projects and actual performance.

reviewed. All information necessary for Con Edison to evaluate the proposed solution should be included within these two documents.

Limitations on Acceptable Responses

The intent of this RFI is to solicit a wide range of innovative Non-Pipeline Solutions, to be proposed by Respondents, to complement our existing portfolio of offerings in the zones described in this RFI during Peak Days and peak periods. As such, Con Edison will consider a wide range of different types of options. However, Con Edison expects all Responses to be consistent with environmental and public policy objectives, and will not consider any options that:

- 1) Lead to significant shifts in end-use natural gas consumption to other fuels with higher local emissions, including fuel oil or wood
- 2) Lead to significant increases in end-use carbon emissions
- 3) Meaningfully reduce the reliability of the natural gas supply to Con Edison customers.
- 4) Require construction of new interstate pipeline capacity
- 5) Deliver CNG by truck
- 6) Require significant direct investments by the Company for facilities or services outside of the Con Edison service territory
- 7) Require additional research and development and/or the development of a technology prototype(s)

In the **NPS Questionnaire (Attachment A)**, which is mandatory for demand-side solutions, Respondents are given an opportunity to indicate whether their proposed solution is consistent with these criteria. Supply-side solutions should clearly demonstrate their consistency as part of their Response.

Professional Background and Experience with the Proposed Solution

Respondents must provide the following:

- Executive Summary of Response
- Firm's core business, organizational structure and resumes of key project personnel
- Planned source(s) of financing for the NPS
- Examples of prior project experience that is similar in nature and relevant to the NPS requirements, with particular emphasis on implementation of the solution, such as at other utilities, large municipalities, co-ops, or any other applicable facilities that include the specific location of successful technology deployment and past experience with permitting and site acquisition similar to those necessary to implement the proposed solution, with emphasis on experience in the New York City metropolitan area, if any
- Any other relevant information deemed appropriate and noteworthy supporting and validating the proposed solution

Proposed Solution Description

Responses must demonstrate how the proposed solution will achieve the Demand reductions or supply increases sought and maximize value to Con Edison's customers. Detailed project information should include:

- Technology/solution description, including a demonstration that the technology is sufficiently advanced to meet Con Edison's needs:
 - Demand-side solutions must demonstrate that the technology type is commercially ready
 - Alternative fossil fuel supplies must provide evidence that the technology type is commercially proven
 - Sustainable gas supplies must demonstrate that the proposed technology type has been thoroughly researched and developed, a function prototype or commercial installation exists, and that it is ready for commercial demonstration or more widespread deployment
- Type of compensation that the Respondent would seek from Con Edison (e.g., shared savings, performance contract, sale, lease-purchase, gas supply agreement, tolling agreement)
- Description of business and ownership arrangements proposed to implement the Response, including financing, construction, operation, maintenance, and warranties
- Performance characteristics of the technology, including the Response's specific ability to reduce Peak Day gas need or provide local supply enhancements on Peak Days, in dekatherms, and the Response's impact on Con Edison's Firm Customer Gas load or local supply volumes on annual basis, in dekatherms²
- Schedule for development of NPS measure(s), date(s) that the measure could be in service, increments of the Relief provided at each date, and the time required to be refilled or restored to readiness
- Duration of the technology's ability to reduce consumption or provide supply, details of any Snap Back Effects, and the number of consecutive days of Relief availability
- Community and environmental impacts, both negative and positive, derived from the solution
- Risks, barriers, challenges, and other factors that could prevent the Respondent from providing the Relief including an accounting of financial, permitting, project/construction, operating and technology risks
- Specifications and details associated with implementing the proposed solution (e.g., technology and installation standards and permitting requirements)
- Detailed description of non-energy benefits associated with the proposed solution, such as benefits accruing to low-income customers or environmental benefits not otherwise quantified

² For demand-side Measures, the Response must specify the data, methodology and detailed calculations used to determine the consumption reduction utilizing Technical Resource Manual version 7 as the preferred method for each NPS measure proposed in a Response.

-
- Responses with supply-side solutions should also include
 - Any potential impacts on Con Edison’s natural gas or electric transmission and distribution system and any external impacts on the equipment of non-participating customers
 - A list or description of the major facilities and equipment that will be required to implement the Response and the likely source of those facilities and equipment
 - A description of the space and location requirements of the proposed solution(s)
 - A detailed list of required federal, state and local permits
 - Alternative Fossil Fuel Supplies should also include the source(s) or expected source(s) of natural gas or other fuels that will be delivered
 - Sustainable Supply Solutions should also include the source(s) or expected source(s) of any feedstocks, electricity or other process inputs that will be required

Project Plan and Timeline to Implement Solution

Proposed Non-Pipeline Solutions Response must specify proposed timeline from contracting to an in-service date to provide Relief.

- Responses must contain a detailed plan to implement each Measure including:
 - General scope of work
 - Implementation plan and project schedule
 - Site acquisition and permitting plan (if applicable)
 - Operation and Maintenance plan (if applicable)
 - An attachment that details financing, including transaction structures and pricing formulas
- Responses must outline a detailed timeline, from contracting to implementation and completion of the proposed solution. Responses that include supply-side solutions should include a comprehensive timeline which identifies the time required to acquire real estate, permits, financing, upstream supplies (if needed), equipment procurement, and construction.
- Respondents proposing to market the installation of demand-side Measures to customers should provide an assessment of the NPS opportunities within targeted market segments and locations. This assessment should include a description of the markets, such as one-to-four family homes, multifamily buildings (specifying low-to-moderate income when applicable) small commercial buildings (e.g., retail stores, restaurants), large commercial buildings (e.g., office buildings, industrial) and government or institutional buildings (e.g., hotels, schools, colleges), and the applicable NPS measures and technologies to be directed at each selected market or customer segment. Preference will be given to Respondents with pre-existing customer agreements to deploy the solution
- Responses must provide information on how the Response will affect the community (both positively and negatively) including, but not limited to, associated Greenhouse Gases (GHG) and other pollutant emissions, electric system savings, low-income community support, waste

streams and management, job creation potential, community disruption and community engagement.

- All Responses should describe the services that are assumed to be provided by Con Edison to facilitate and support implementation of the Response, such as marketing, labor, equipment, and/or real property.

Detailed Costs Associated with Proposed Solution

Cost-effectiveness will be a key metric used by Con Edison to evaluate Responses. Pricing information should not be included in the main body of the Response. Respondent must include the following **as an attachment** to their Response to aid in Con Edison's evaluation and selection process:

- Respondents must provide explanations and validation of the price and cost breakdown included in the **NPS Questionnaire (Attachment A)** for demand-side solutions or a thorough project specific cost detail for supply-side projects
- Respondents should identify other revenue streams, incentives, or cost savings that may be utilized to mitigate costs (i.e., City, State, and Federal funding opportunities, participant contributions, third-party revenue streams, and other Con Edison programs). Respondents should also identify if private sector financing will be utilized
- Responses including demand-side measures need evidence and examples demonstrating that the funding strategies are provable and repeatable
- Responses including supply-side measures also require a detailed pricing and cost schedule for each Measure proposed. The schedule should be provided in a stand-alone document separate from the other components of the Response. The detailed pricing and cost of a Response should include, at a minimum:
 - A detailed estimate of any up-front costs that would be borne by Con Edison, including interconnection costs
 - All applicable rates for on-going supply services that would be borne by Con Edison, such as capacity and commodity charges
 - Optional terms and rates permitting Con Edison, if it so chooses, to purchase any environmental credits or renewable attributes generated by the supply-side Measure
 - A detailed estimate of any costs that would be passed through to Con Edison, such as property lease or utilities costs
 - A detailed estimate of the operations and maintenance costs that would be borne by Con Edison to implement the Response, including those associated with interconnection facilities
 - Additional costs included in proposed pricing for incremental insurance and/or performance assurance in connection with the proposed Measures
 - Applicable labor and other variable charges
 - An explanation of any calculations and a description of all assumptions and exclusions

Non-Pipeline Solutions Questionnaire

Demand-side Respondents have been provided with an **NPS Questionnaire (Attachment A)** that must be fully completed. Respondents should provide responses in each tab of the file and submit with the Response. All fields in the questionnaire are critical to allow for a thorough review of a potential NPS. All tabs within the questionnaire must be fully completed. Failure to submit a fully completed questionnaire may lead to disqualification. Questions regarding the questionnaire should be submitted to npsrfi2020@coned.com.

Response Evaluation Approach

Solutions proposed in response to this RFI will be reviewed in detail by Con Edison. The Company utilizes an evaluation framework for all NPS projects to determine if they can fulfill areas of need in our existing portfolio. Some primary criteria to be applied to review qualified Responses received are listed below. The review process is intended to be fair and equitable, with the objective being to achieve the greatest overall value for customers.

Respondents should note that although Con Edison will be reviewing Respondent's solution if the submission criteria are met, there is no guarantee that a Respondent's solution will be included in a following Request For Proposals or that Con Edison will enter into a contract with a Respondent.

As a general matter, each Measure of any Response submitted, whether part of a single-Measure Response or a multiple-Measure Response, will be evaluated against other like Measures for equal comparison; and, thereafter, the Company may evaluate all Measures in the aggregate in a manner that considers the overall benefit to the Company and its customers based on the criteria set forth in this RFI, and to include considerations that could allow for the selection of individual Measures across multiple Responses. Con Edison has a strong preference for incorporating a wide variety of Responses into our portfolio which is already comprised of different types of solutions, to mitigate the risk that individual Respondents or types of solutions may not perform as expected, and to maximize total Relief. The Company will place significant emphasis on the cost-effectiveness and feasibility of projects and Responses. Respondents are urged to tailor their Response accordingly.

Response Evaluation Criteria

Responses will be evaluated and scored on the basis of the following criteria which are not necessarily listed in order of significance:

Criteria	Objective
Response Content	All information requested by Con Edison in this RFI has been provided and is comprehensive enough to allow Con Edison to evaluate the Response. Provided information should include a fully completed NPS Questionnaire (Attachment A) for demand-side solutions or a detailed pricing and cost schedule for supply-side projects.
Relief Provided	The extent to which the proposed solution would meet the defined functional requirements and the ability to meet the needs outlined in this RFI through demand reduction or local supply, with emphasis on the time periods and locations discussed herein. Project scalability, or the maximum potential Peak Day Relief this type of solution could reasonably scale up to, as well as the accommodations required, will also be considered by Con Edison.
Benefits and Costs	Total compensation requested by the Respondent, based on the unit cost of the Response (\$ / Peak Day Dt of Relief) and the relative value of any other net benefits or costs associated with the Response. A Benefit Cost Analysis will be applied to demand-side solutions by Con Edison to determine the impact of the solutions on the existing portfolio and the feasibility of implementing the proposed Non-Pipeline Solution in combination with other proposed solutions (see Appendix C). This assessment will also consider potential positive and negative electric system impacts, particularly on constrained networks.
Project Risk	The expected ease of project implementation and the expected risks associated with project implementation within the timeframe required for the NPS, including consideration of potential financial, permitting, technology, construction, operating, and other risks that Con Edison, in its sole discretion, believes are applicable to the project.
Qualifications	The relevance of the Respondent’s qualifications, its experience and success in providing similar solutions and working in the New York metropolitan area, and its financial, technical, and other resources. Documented results will be used to assess Qualifications.
Community Impacts	The positive or negative impacts that the proposed solution may have on the community in the identified area (i.e., noise, pollution, support for low-income housing, etc.).
Greenhouse Gas Impacts	The expected impact of the Response on emissions of greenhouse gas emissions, relative to alternatives, and the potential benefit or cost of the NPS proposed in meeting state and local policy objectives.

Instructions to Respondent

Respondents are strongly encouraged to submit a Response in accordance with the summary instructions outlined in this section, the [Non-Pipeline Solutions RFI Response Requirements](#) section, and such other requirements as may be stated throughout this RFI. Responses including appendices and attachments, should be at a minimum 10 pages and no longer than 25 pages. In addition, Respondents are advised that a fully completed **NPS Questionnaire (Attachment A)** must be provided for demand-side solutions and a detailed cost explanation for supply-side solutions, and that Responses lacking these may not be considered. The **NPS Questionnaire (Attachment A)** will be considered one (1) page as part of Response page count.

Respondents are required to submit their RFI response through the Company’s Procurement System (“Oracle RFQ System”). Any potential Respondent who has not previously registered in the Oracle RFQ System should do so immediately as the deadline to register is approximately 30 days prior to the submission deadline. Any limitation regarding Respondent’s ability to supply information requested in this RFI (or to support or perform a particular function or service) should be explicitly stated in the Response. Any partnership with other solution providers to perform a particular function or service must be explicitly stated.

RFI Schedule

Below is the expected schedule to be followed for this solicitation:

RFI Solicitation Milestones	Completion Date*
RFI Issued	January 31, 2020
Introductory Webinar	February 13, 2020
Deadline to submit clarification questions (1 st round)	February 14, 2020
Second Introductory Webinar	February 25, 2020
Deadline to submit Supplier Enablement Template and W-9 Form	March 2, 2020
Responses to clarification questions published (1 st round)	March 2, 2020
Deadline to submit clarification questions (2 nd round)	March 5, 2020
Responses to clarification questions published (2 nd round)	March 19, 2020
Responses from procurement-enabled Respondents due	April 3, 2020 3 PM EDT

* **Con Edison reserves the right to change any of the above dates.**

Con Edison seeks a robust portfolio of non-pipeline solutions in response to this RFI to better meet customer needs on Peak Days and contribute to the achievement of state and local greenhouse gas emissions goals. Con Edison reserves the right to issue an additional RFI(s) or RFP(s) at a later date to solicit additional, more detailed Responses from multiple vendors, including vendors not participating in this RFI, regarding any solution.

Contact Information and Questions

All Respondents should direct questions during the clarification question timeframe via email to npsrfi2020@coned.com. All questions and answers deemed essential for a response will be publicly posted at <https://www.coned.com/en/business-partners/business-opportunities/non-pipeline-solutions>. Respondent names will be kept confidential. Respondents' pricing generally will not be made public by Con Edison; but, in certain circumstances, there is the potential that some public disclosures of information provided may occur due to required disclosures to regulators. When Con Edison is required by law or regulation to file or disclose to regulators information that may include Respondent's pricing, Con Edison will take reasonable measures to avoid disclosures to the general public of Respondent's Response in a form identifiable to Respondent.

The Company will have no obligation to evaluate late submissions, nor be responsible in any way for any consequences associated with late submissions. Potential Respondents are encouraged to check Con Edison's Non-Pipeline Solutions webpage periodically to keep apprised of additional information that may be of interest.

Response Submittal Instructions

All Responses must be submitted through the Oracle RFQ System on or prior to the due date and time. Respondents who fail to submit Responses by the due date and time will be locked out of the Oracle RFQ System and unable to submit Responses. Therefore, Respondents are encouraged to upload submissions well in advance of the closing time to avoid any potential issues that may occur, including due to unfamiliarity with the Oracle RFQ System, or otherwise. Respondents must take the following actions to ensure acceptance of a Response:

1. Download this Non-Pipeline Solutions RFI, the **Supplier Enablement Template** and if Response includes a demand-side solution **NPS Questionnaire (Attachment A)**
2. Become enabled³ in the Oracle RFQ System by submitting the below items to npsrfi2020@coned.com
 - a. W-9 form (version last updated October 2018)
 - b. **Supplier Enablement Template**
3. Receive invitation to respond to the Non-Pipeline Solutions RFI (Formal RFQ response request)
4. Submit Response and fully completed **NPS Questionnaire (Attachment A)** for demand-side solutions or a detailed project pricing and cost schedule attachment for supply-side solutions to Con Edison Procurement System

³ If you are already enabled in the Oracle RFQ System as a vendor, email npsrfi2020@coned.com to request the Formal RFQ response request.

Response Format

The response shall cover all criteria outline in the RFI and include as an attachment, either the **NPS Questionnaire (Attachment A)** for demand-side solutions with all tabs completely filled to the best of the Respondent’s ability or a detailed project pricing and cost schedule for supply-side solutions. The technical Response for this RFI shall be submitted as either a Word document or a PDF document, and shall be organized as follows:

Response Section	Response Section Title
N/A	Cover Letter
N/A	Respondent Checklist
N/A	Table of Contents
1	Executive Summary
2	Non-Pipeline Solution(s) & Respondent Qualifications
Separate Document	Non-Pipeline Solutions Questionnaire (Attachment A) or a detailed project pricing and cost schedule

Note: The Oracle RFQ System is only capable of accepting individual documents no larger than 5MB in size. Respondents may find it necessary to split up large documents into multiple smaller files.

Cover Letter

The cover letter shall include the following:

- The legal name and address of Respondent
- The name, title and telephone number of the individual submitting the Response and available for clarification questions

Respondent Checklist

Respondent should provide to the Company the properly completed [Appendix A: Respondent Checklist](#) as part of the Response.

Table of Contents

Include a clear identification of the Response by section and by page number as identified above.

Executive Summary

In this section, Respondent should provide an executive overview and summary of the key features of Respondent’s non-pipeline solution. In addition, Respondent should provide the following:

- Highlight where Respondent has performed industry-specific work that is relevant to the [Non-Pipeline Solutions Project Description](#) and [Non-Pipeline Solutions RFI Response Requirements](#) identified in this RFI
- Any other information relevant to Respondent’s solution for consideration

Non-Pipeline Solution

The Response must meet all the [Non-Pipeline Solutions RFI Response Requirements](#). The following information addresses major areas that shall be included in Response:

- [Proposed Solution Description](#)
- [Professional Background and Experience with the Proposed Solution](#)
- [Project Plan and Timeline to Implement Solution](#)
- [Detailed Costs Associated with Proposed Solution](#)

Responses may also identify areas not included in the Requirements that may be beneficial for consideration, along with rationale for why the additional recommendation(s) would better help achieve the proposed Relief.

Assumptions & Exceptions

Respondent should provide a list of assumptions made in developing the response to this RFI that should be considered when evaluating the response.

Glossary of Terms

Respondent should provide a glossary of terms that is specific to Respondent's solution.

Non-Pipeline Solutions Questionnaire

Respondents with demand-side solutions should attach the responses to the **Non-Pipeline Solutions Questionnaire (Attachment A)**, fully completed, with the RFI submittal.

RFI Terms and Conditions

It is solely the responsibility of each Respondent to ensure that all pertinent and required information is included in their submission. Con Edison reserves the right to determine at its sole discretion whether a submission is incomplete or non-responsive.

Respondents should state clearly all assumptions made with respect to this RFI. In the absence of an explicit statement to the contrary, each Respondent shall be deemed to have agreed with and understood the requirements of this RFI. While Con Edison has endeavored to provide accurate information, Con Edison makes no warranty or representation of accuracy.

Any exceptions to the terms, conditions, provisions, and requirements herein must be specifically noted and explained by Respondent in Respondent's response to this RFI. Con Edison will assume that any response to this RFI expressly accepts all the RFI terms, conditions, provisions and requirements, except as expressly and specifically stated by a Respondent in its response to this RFI.

Respondents agree to keep confidential all information provided by Con Edison in connection with this RFI.

Qualifications of Respondents

The Company may make such investigation as the Company deems necessary to determine the qualifications of Respondent and proposed subcontractors to perform the work. A Respondent should promptly furnish any information and data for this purpose as may be requested by the Company. The

failure of a Respondent to produce timely information and data requested by the Company may halt further review of the proposed solution.

Proprietary Information

If a Response includes any proprietary data or information that a Respondent does not want disclosed to the public, such data or information must be specifically designated as such on each page on which it is found. Con Edison shall be held harmless from any claim arising from the release of proprietary information by Con Edison not clearly identified as such by a Respondent. Because of the need for public accountability, the following information regarding the Response shall not be considered proprietary, even if such information is designated as such: pricing terms and non-financial information concerning compliance with RFI specifications.

Cost of response preparation

The cost of preparing a response to this RFI, including, but not limited to, the cost associated with site visits and preliminary engineering analysis, will not be reimbursed by Con Edison.

Right to Reject

This RFI shall not be construed to create an obligation on the part of Con Edison to enter into any contract, or to serve as a basis for any claim whatsoever for reimbursement of costs for efforts expended by Respondent. Furthermore, the scope of this RFI may be revised at the option of Con Edison at any time, or this RFI may be withdrawn or cancelled by Con Edison at any time. Con Edison shall not be obligated by any statements or representations, whether oral or written, that may be made by the Company, its employees, principals, or agents.

Con Edison reserves the right to accept any Response, to reject any and all Responses, and to waive irregularities or formalities relating to any Response if deemed to be in the best interests of the Company. Any such waiver shall not modify any remaining RFI requirements nor excuse any Respondent from full compliance with all other RFI specifications. Con Edison shall reject the Response of any Respondent that is determined not to be a responsible bidder, or whose Response is determined by the Company to be non-responsive.

Con Edison reserves the right to withdraw this RFI at any time and for any reason, and to issue such clarifications, modifications, and/or amendments as it may deem appropriate. Receipt by the Company of a response to this RFI confers no rights upon a Respondent, nor any obligations upon the Company.

Revision to the RFI

Con Edison reserves the right to make changes to this RFI by issuance of one or more addenda or amendments and to distribute additional clarifying or supporting information relating thereto. Con Edison may ask any or all Respondents to elaborate or clarify specific points or portions of their submission. Clarification may take the form of written responses to questions or phone calls or in-person meetings for the purpose of discussing the RFI, the responses thereto, or both.

If it becomes necessary to clarify or revise this RFI, such clarification or addendum shall be issued by posting to the [Non-Pipeline Solutions website](#). Any addendum to, and/or clarification or revision of this RFI shall become part of this RFI.

Appendix A: Respondent Checklist

The Respondent must complete and submit the following checklist with its Response.

Checklist Item	Initial
REVIEWED ALL RFI DOCUMENTS AND LAWS AND REGULATIONS THAT IN ANY MANNER MAY AFFECT COST, PROGRESS, OR PERFORMANCE	
FULLY COMPLETED RESPONSE ADHERING TO THE FORMAT PROVIDED WITHIN THIS RFI	
ENABLED IN CON EDISON PROCUREMENT SYSTEM	
FULLY COMPLETED NON-PIPELINE SOLUTIONS QUESTIONNAIRE (ATTACHMENT A) FOR DEMAND-SIDE RESPONSES OR APPENDIX OF DETAILED PROJECTS PRICING AND COST SCHEDULE FOR SUPPLY-SIDE RESPONSES, AS APPLICABLE	
<ul style="list-style-type: none"> • Summary 	
<ul style="list-style-type: none"> • Demand Impacts 	
<ul style="list-style-type: none"> • Financials 	
<ul style="list-style-type: none"> • Additional Review Criteria 	

NOTE: FAILURE TO COMPLY WITH RFI PROCESS, INCLUDING COMPLETION AND SUBMITTAL OF ALL THE ABOVE DOCUMENTS ON THE FORMS PROVIDED HEREIN, MAY RESULT IN YOUR RESPONSE NOT BEING REVIEWED.

By placing my initials in the boxes provided above, I acknowledge having read and that I understand fully all of the requirements, including with regard to each of the documents referenced herein.

RESPONDENT (SIGNATURE):

RESPONDENT (PRINT NAME):

DATE:

Appendix B: Additional Technology-Specific Information

Con Edison expects to receive varied demand-side reduction and non-pipeline supply-side solutions from market participants. While the Company welcomes projects different than those listed here, consistent with the [Limitations on Acceptable Responses](#) outlined earlier in this RFI, qualifying supply-side measures must inject gas directly into Con Edison's gas system. This section aims to provide additional guidance to inform potential Respondents that may be considering submitting Responses of the types discussed below.

Alternative Peak Day supply options

- **Renewable natural gas or biogas**
- **Power to gas**
- **Hydrogen, propane or butane blending**
- **Measures to store natural gas, including distributed CNG or LNG**
- **Delivery of LNG**
- **Delivery of CNG, other than by truck**
- **Other innovative non-pipeline supply-side solutions**

Respondent's should indicate their proposed contractual terms, such as the duration of contracts, and should indicate what terms will enable them to provide the best price for Con Edison.

Respondents proposing supply-side solutions should also consider and address the potential for their Responses to impact the public safety. Responses should briefly describe the measures that will be incorporated in the Response to maintain safety of the public and the physical security of the supply-side facilities and equipment.

Alternative Fossil Fuel Supplies

Respondents intending to include Alternative Fossil Fuel Supplies as a part of their Responses should be aware of the following:

- **Off-Peak Use:** Equipment and facilities devoted to Alternative Fossil Fuel Supply, including CNG or LNG storage, may be used by the Respondent for purposes other than providing Peak Day supply to Con Edison, if doing so does not interfere with their ability to meet their commitments to Con Edison. This could include sales of natural gas to other parties, use of ships or trucks to deliver supplies to other parties, use of storage capacity for Respondent's own purposes, or use of storage capacity to generate revenues from price arbitrage activities during the periods in the year when the NPS is not needed to meet Con Edison's peak demand. Any such arrangements should be described in the Response and revenues should be recognized in the Respondent's pricing.
- **Permitting:** Respondents including hydrocarbon transportation or storage as a part of their Response consider should carefully potential permitting issues. For example, state and local legal restrictions strictly limit the use of trucks to transport LNG and the development of LNG storage. Respondents are expected to discuss such limitations in their Response and to outline their plan(s) to address them.

Interconnection Facilities: The New York State Public Service Commission has authorized Con Edison to provide, at its own expense, some facilities necessary to interconnect some LNG and CNG operations to its Distribution System, including limited amounts of piping in public rights-of-way and certain safety-related equipment. For pricing purposes, Respondents proposing such projects should assume that they will be responsible for constructing, owning, operating and maintaining all gas conditioning equipment (including odorization facilities, if necessary), gas quality analysis equipment, heaters, compressors, regulators and a custody transfer meter.

Renewable Natural Gas

Responses including renewable natural gas projects, should include the following:

- **Interconnection Process and Gas Quality:** Con Edison expects to file a standardized Interconnection Agreement, including gas quality standards, with the New York Public Service Commission in March 2020. Con Edison also participated in the development of the Northeast Gas Association’s [Interconnect Guide for Renewable Natural Gas in New York State](#) which may serve as a useful reference source for Respondents considering RNG projects.
- **Interconnection Facilities:** The New York State Public Service Commission has authorized Con Edison to provide, at its own expense, some facilities necessary to interconnect some RNG facilities to its Distribution System, including limited amounts of piping in public rights-of-way and certain safety-related equipment. For pricing purposes, Respondents proposing RNG projects should assume that they will be responsible for constructing, owning, operating and maintaining all gas processing and treatment equipment (including odorization facilities), gas quality analysis equipment, heaters, compressors, regulators and a custody transfer meter.
- **Renewable Attributes and Environmental Credits:** Con Edison does not expect to purchase renewable attributes or environmental credits associated with the production of RNG. Respondents should assume for pricing purposes that such attributes will be sold to other parties. However, Respondents are encouraged to provide separate pricing for such attributes or credits to enable Con Edison to evaluate the potential costs and benefits of purchasing them.
- **Other Revenue Streams:** Con Edison expects there to be other revenue streams available for certain projects. This could include tipping fees and compost revenues for RNG (e.g., RNG fees), which may be shared, and Respondents are expected to recognize the value of such arrangements in their pricing.
- **Wastewater treatment digesters:** Based on discussions with the City, the following information can be provided about estimated unused biogas at The City of New York’s wastewater treatment plants in Con Edison’s natural gas service territory⁴:
 - The City of New York operates 14 wastewater treatment plants, five of which are in the Con Ed Service area. All of their wastewater treatment plants have anaerobic digesters.
 - Estimated excess biogas at the five wastewater treatment plants in Con Edison’s service territory is up to 1.1 MDt/day.

⁴ If working with the City for this RFI, Respondent’s should ensure they target facilities in Con Edison’s service territory.

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- **Food waste:** Respondent's should be aware that New York City and New York State have adopted mandatory organic waste source separation requirements for large commercial food retailers and food service establishments.
 - The New York City requirements cover 2,500 food-related businesses that may divert up to 100,000 tons of organic waste annually. The City has promulgated proposed rules that would expand the requirements to an additional 8,500 businesses that may divert an incremental 100,000 tons of organic waste per year. For inquiries related to the City's food waste opportunities, please contact Gregory Anderson, Assistant Commissioner for Policy and External Affairs at the NYC Department of Sanitation, at gpanderson@dny.nyc.gov.
 - If working with municipalities for this RFI, Respondent's should ensure they target facilities in Con Edison's natural gas service territory.

Power to Gas and Hydrogen Blending

Respondents proposing to develop Hydrogen Blending and Power-to-Gas projects should consider the following:

- **Greenhouse Gas Emissions Impacts:** Hydrogen Blending and Power-to-Gas technologies may provide for reductions in greenhouse gas emissions, compared to alternative sources of supply, particularly if hydrogen is produced using renewable electricity or as a byproduct of industrial processes. Respondents should explain and quantify how implementation of their Response would affect greenhouse gas emissions.
- **Hydrogen Blending Impacts:** Blending of hydrogen into the gas stream has the potential to affect the safe and reliable impact of Con Edison's Distribution System and customer equipment. Respondents proposing hydrogen blending should describe how they will work with Con Edison to identify and address the potential for such impacts, and should highlight their experience, if any, working with other gas utilities to perform a similar role.

Additional inquiries related to interconnection of supply-side Measures and gas quality should be directed to npsrfi2020@coned.com

Energy efficiency measures that reduce Peak Day Demand

Important considerations for Respondent's considering proposing energy efficiency solutions include the following:

- The ability to reduce Peak Day Demand in a reliable, quantifiable and sustainable manner is critical to the acceptance of any proposed energy efficiency NPS options.
- Customers served under interruptible rates are not eligible to participate. Most industrial and large electric generator customers in Con Edison's service territory are on interruptible rates.
- Information on existing Con Edison energy efficiency programs can be found at the following [website](#). Con Edison specifically seeks Respondents to propose energy efficiency opportunities that are unique from existing programs and will capture incremental savings opportunities.
- Although not a principal focus of this RFI, Respondents are encouraged to describe any positive impacts that their proposed measures will have on summertime electric load, particularly on electric networks that Con Edison has recognized as needing [Non-Wires Solutions](#).

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- Con Edison programs undergo rigorous measurement & verification consistent with the International Performance Measurement & Verification Protocol (IPMVP) standard including those that make up the existing non-pipeline solutions and incentives will be on a pay for performance basis. All measures and performance representations are subject to independent inspection and review by Con Edison or its agent.

Measures that convert natural gas or oil applications to electricity

- **Electrification of non-residential space heating and/or hot water heating, including installation of geothermal and air-source heat pumps**
- **Implementation of hybrid heating systems that switch from natural gas to electricity during peak demand periods.**
- **Conversion to other low carbon space/water heating applications**
- **Appliance alternatives to those that use natural gas such as induction cooktops and heat pump clothes dryers**

Important considerations for Respondent's considering proposing these types of solutions include the following:

- Heat pumps or other electric technologies must operate using electricity on Peak Days. Respondents are encouraged to employ technologies capable of operating efficiently at low temperatures. Responses to this RFI should demonstrate that intended measures can function at the required temperature levels in the **NPS Questionnaire (Attachment A)**.
- Con Edison has existing programs providing rebates for high-efficiency air-source heat pumps purchased from selected distributors and expects to expand incentives for residential ground-source heat pumps and as such is seeking non-residential, including multi-family, applications of these technologies.
- Respondents are encouraged to investigate Con Edison's electric voluntary time of use rates, and consider all rate options available when creating Responses involving conversion to electric heating.
- Although not a principal focus of this RFI, Respondents are encouraged to describe any positive impacts that their proposed measures will have on summertime electric load, particularly on electric networks that Con Edison has recognized as needing [Non-Wires Solutions](#).

Demand response measures that reduce Peak Day natural gas demand

- **Thermal energy storage measures**
- **Other innovative demand response measures**

Important considerations for Respondent's considering proposing demand response solutions include the following:

- Con Edison is open to Proposals for economic reductions in peak firm gas demand within its service territory. However, customers served under interruptible rates are not eligible to participate. Most industrial and electric generator customers in Con Edison's service territory are on interruptible rates

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- Respondents should ensure they are proposing a demand response solution that achieves net reductions in Peak Day demand whenever the company designates a Planned DR Event to be designated by Con Edison during the Winter Season. Demand reductions during each day will be measured over a 24-hour period. Snapback effects – i.e., shifting of load within the 24-hours period as well as impacts on total premise load e.g. curtailment of a process load needs to consider impacts to space heating – must be identified and subtracted from the net reductions in Peak Day demand. Con Edison recognizes that this requirement is different than the goals of many other demand response programs, which are focused on helping other utilities address shorter periods of constraint, but there is little value to the Company if a proposed solution shifts consumption between hours in the day without achieving a net reduction over the 24-hour day
 - Proposals that involve aggregation of demand response are encouraged to provide the scale, flexibility, and certainty required for the Company to rely on this option. Aggregators are encouraged to outline a plan to acquire and retain participating customers, so that the program can continue over time
 - An estimated schedule for the rollout of natural gas Advanced Metering Infrastructure (AMI) in different regions of Con Edison’s service territory is included below:
 - Westchester: Completed, except for “complex billing” gas customers
 - Manhattan: July 2018 – June 2022
 - Bronx: January 2019 – June 2022
 - Queens: July 2019 – June 2022
 - A separate, [Gas Demand Response Pilot](#) exists, also as part of the Smart Solutions for Natural Gas Customers program, all gas demand response solutions must be unique from the existing offer. Other differences between the existing Gas Demand Response Pilot and RFI gas demand response solutions that will be considered in this RFI include: the standard Gas program offers a standard payment structure to all participants, while the RFI gas demand response allows Respondents to propose performance and participation pricing; the Gas Demand Response Pilot has standard performance requirements for all participants (for example, hours of required performance) while this RFI gas demand response solutions can propose terms and conditions of performance
 - Respondents must explain how they intend to control, measure and verify performance of the demand response solutions to be implemented. The details of the proposed baseline methodology, consistent with the International Performance Measurement and Verification Protocol (IPMVP) standard, should be clearly explained. The methodology should take into account the possibility that AMI may not be available.
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Appendix C: Outline of Non-Pipeline Solutions Benefit-Cost Analysis (BCA)

Background

The “[Interim Benefit-Cost Analysis Handbook for Non-Pipeline Solutions](#)” has been developed to provide a common methodology for calculating benefits and costs of projects and investments related to gas Demand reductions, as an alternative to the procurement of natural gas supplies. This BCA framework will be used as part of the evaluation of demand-side solutions proposed by Respondents to this RFI and will help ensure that Con Edison maintains a cost-effective portfolio of options. The sections below outline the major elements of this approach, providing a preview to Respondents on how proposed solutions may be valued.

Cost Effectiveness Tests

The Societal Cost Test (SCT), Utility Cost Test (UCT), and the Rate Impact Measure (RIM) make up the relevant cost-effectiveness tests to be used in the Non-Pipeline Solutions BCA. Each cost test may be computed for each demand-side solution proposed in response to the RFI. The primary cost test is the SCT, which evaluates the net impact of each solution on society as a whole. It considers the incremental cost of the proposed solution (regardless of the compensation provided by Con Edison) and its benefits to society such as reductions in greenhouse gas emissions. The UCT cost test estimates the impact of the solution from the utility’s perspective, by considering the costs and benefits that accrue directly to Con Edison. The UCT does not consider external impacts, such as greenhouse gas emissions impacts. The RIM cost test estimates the impact of proposed solutions on non-participating firm natural gas customers by considering how their monthly bills will increase or decrease as an indirect result of the proposed load reductions which often reduce utility revenues. The Public Service Commission has specified that if a solution passes the SCT but its results do not satisfy the UCT and RIM tests, the solution could still be accepted if a complete bill impact analysis determines that the impact is of a “magnitude that is acceptable”.

Gross vs. Incremental Costs

Incremental project costs will be used where a viable alternative project can be identified for comparison and costs for that alternative are available.

- Energy Efficiency: incremental costs equal gross costs less the cost of a code-compliant measure alternative, if any.
- Demand Response: incremental costs are the compensation requested by the respondent plus any project enablement costs.
- Heat Pumps: incremental costs are gross costs less the cost of cost of a code-compliant measure alternative (e.g., fossil-fuel boiler and chiller).

Program Administration Costs

An adder will be applied to demand-side program and project costs to recognize costs that could be incurred by Con Edison for marketing, analysis, and M&V in connection with the program or project. Adders will be developed based on the characteristics of the particular program or project (e.g., rebate program vs. customer-proposed project).

Evaluation Period

Avoided costs in connection with demand-side measures will be evaluated over the measure's expected life. Measure lives presented in the NYS TRM will generally be used where available.

Avoided Cost of CO₂ Emissions

The net cost of burner-tip CO₂ emissions avoided as a result of the proposed solutions, less any increased consumption of other fuels, will be taken into account. Emissions reduction will be valued based on the interagency federal study⁵ on the societal cost of carbon emissions. Each solution will be evaluated based on its net impact on carbon emissions, recognizing any increased use of alternative fuels, such as electricity. Demand response solutions that increase electricity usage on peak winter days will be valued at a higher cost to account for higher emissions from electric generation plants that operate at those times. Proposed solutions that would significantly increase end user consumption of fossil fuels or carbon emissions will not be considered under the terms of the RFI.

Avoided Cost of On-System Gas T&D Projects

Con Edison will consider whether proposed solutions will enable it to avoid capital projects on its gas T&D system that would otherwise be required to serve forecasted load growth. The cost savings associated with avoiding capital projects will be estimated based on Con Edison's most recent system-wide marginal cost of service, which will be converted to gas capacity cost by using Con Edison's forecasted growth in peak demand. Solutions will only be considered to avoid on-system gas T&D costs where gas service is reasonably available.

Avoided Gas Supply Costs - Commodity

The cost of gas commodity purchases avoided as a result of the proposed solutions will also be taken into account, based on the forecasted cost of natural gas appearing in the New York Independent System Operator's most recent CARIS 2 study. The price of avoided commodity will be determined based on when the measures within the proposed solution are available:

- a. Seasonal gas prices will be used to recognize higher gas prices during winter months and lower prices during summer months.
- b. A multiplier will be applied to the winter seasonal price for measures that are only available on a limited number of peak days (e.g. demand response) in order to recognize the potential for higher prices on the coldest winter days.

Avoided Gas Supply Costs – Capacity

Demand-side solutions proposed in response to the RFI will be assumed to reduce upstream supply capacity costs to service Con Edison's natural gas customers, depending on the geographic location of the solution:

1. **Lower Westchester County (Moratorium Area):** Reductions in Demand resulting from proposed solutions in the Moratorium Area will be assumed to avoid capacity costs for trucked supplies of CNG.

⁵ See https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf

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2. **New York City:** Reductions in Demand resulting from proposed solutions in the New York City portion of Con Edison’s gas service territory will be assumed to avoid capacity costs for Delivered Services required to meet Peak Day requirements.
 3. **Northern Westchester County.** Con Edison does not procure Delivered Services or other short-term supplies for this portion of its service territory. Therefore, Demand reductions proposed in the northern portions of Con Edison’s service territory will not be assumed to reduce upstream supply capacity costs.

Avoided (or Increased) Electric Supply Costs – Commodity

Demand-side solutions that avoid or increase electric commodity usage (e.g. electric heat pump measures) will be taken into account, based on the forecasted cost of electricity during a typical winter season appearing in the New York Independent System Operator’s most recent CARIS 2 study.

Avoided (or Increased) Electric Supply Costs – Capacity

Demand-side solutions that avoid or increase electricity usage (e.g. electric heat pump measures) are not expected to have an impact on electric generating capacity costs. These solutions typically have an impact on winter peak electric capacity and, therefore, do not affect electric system generating capacity requirements which are based on summer peak load. To the extent that these solutions may have a positive or negative impact on summer peak electric capacity needs, the impact will be valued based on the forecasted installed electric generation capacity and unforced capacity price rates periodically, published by the NYS Department of Public Services in Case No. 14-M-0101.

Avoided (or Increased) Cost of On-system Electric T&D Projects

Demand-side solutions that avoid or increase electricity usage (e.g. electric heat pump measures) are not expected to have an impact on electric T&D capital costs. These solutions typically only have an impact on winter peak electric capacity and, therefore, do not interfere with Con Edison’s electric on-system T&D infrastructure requirements which are based on summer peak load. To the extent that these solutions have a positive or negative impact on summer peak electric capacity, the impact will be valued based on Con Edison’s most recent system-wide marginal cost of service study.

Avoided Other Fuel Costs

Some proposed solutions may increase or decrease the use of other fuels not described above, such as heating oil or district steam. The BCA will seek to recognize the costs or benefits resulting from changes in the use of those fuels use. Costs or benefits will be based on values determined by Con Edison to be reasonable indicators of the marginal costs or benefits for those fuels.

Appendix D: Areas of Need by Zip Code

Expected Value by Zip Code

Zone 1. Highest	Zone 2. Significant	Zone 3. Moderate
10502 10601	10001 10033 10154	10501
10503 10603	10002 10034 10162	10505
10504 10604	10003 10035 10165	10511
10506 10605	10004 10036 10166	10517
10507 10606	10005 10037 10167	10518
10510 10607	10006 10038 10169	10520
10514 10610	10007 10039 10170	10526
10522 10701	10009 10040 10172	10527
10523 10702	10010 10041 10173	10535
10528 10703	10011 10044 10174	10536
10530 10704	10012 10045 10175	10540
10532 10705	10013 10065 10176	10547
10533 10706	10014 10069 10178	10548
10538 10707	10016 10075 10271	10560
10543 10708	10017 10080 10278	10566
10545 10709	10018 10103 10279	10567
10546 10710	10019 10104 10280	10576
10549 10801	10020 10105 10281	10578
10550 10802	10021 10106 10282	10588
10552 10803	10022 10110 10285	10589
10553 10804	10023 10111 10451	10590
10562 10805	10024 10112 10452	10596
10570	10025 10115 10453	10597
10573	10026 10118 10454	10598
10577	10027 10119 10455	
10580	10028 10121 10456	
10583	10029 10122 10457	
10591	10030 10123 10458	
10594	10031 10128 10459	
10595	10032 10152 10460	
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