

#### Susan Vercheak\* Associate General Counsel

April 5, 2018

Kathleen H. Burgess Secretary New York Public Service Commission Three Empire State Plaza Albany, NTY 12223

Re: Matter 17-01276 – In the Matter of the Value of Distributed Energy Resources Working Group Regarding Value Stack

Matter 17-01277 – In the Matter of the Value of Distributed Energy Resources Working Group Regarding Rate Design

Dear Secretary Burgess:

Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. hereby submit for filing responses to the informal Information Requests received from the Utilities Intervention Unit of the New York State Department of State ("UIU"), Pace Energy and Climate Center ("PECC"), and the Solar Energy Industries Association ("SEIA") in the above-referenced matter.

If you have any questions, please do not hesitate to contact me.

Thank you.

Very truly yours,

7722

Susan Vercheak

**Enclosures** 

Response to Pace Interrogatories – Set Pace-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 1

- 1. Does the Company assert that economic efficiency is enhanced on a Company or societal basis when fixed costs are recovered using fixed charges? Is yes, please provide citations to any authorities that support this assertion. Please explain how the Company reflects its position in its cost of service approaches.
- 2. Please provide spreadsheets and data associated with the presentation to the VDER meeting on March 6, 2018.
- 3. Please provide spreadsheets for all data associated with the cost of service and rate design for all current mass market customer rates.

#### Response

1. Economic efficiency is enhanced when utility rates accurately reflect customer-related fixed costs in the customer charge, demand-related costs in the demand charge, and volumetric kWh-related costs in a kWh charge.

The NARUC DER Rate Design and Compensation Manual recognizes this approach:

There are many costs associated with a customer being connected to the grid, as well as benefits to the customer. Particularly to the extent that costs are recovered through volumetric rates, a DER customer may not be paying for all such costs. These costs would then be paid for by other customers, to the benefit of DER customers. (p.82).

The Department of Public Service Staff also emphasized the need for economic efficiency in utility rates in its White Paper on Ratemaking and Utility Business Models:

Efficient price signals and transparency are hallmarks of a successful market. Rate design and compensation mechanisms that accomplish these will help to optimize the investment in and use of DER, thereby reducing total system costs and customer bills, not only for customers with DERs. Conversely, rates that are bundled and mask the underlying costs of service will not facilitate efficient decisions. (Case 14-M-0101, issued July 28, 2015, p.81)

Finally, James Bonbright's <u>Principles of Public Utility Rates (1961)</u> also supports this assertion. Bonbright wrote that an objective of reasonable public utility rates should be "[t]he optimum-

use or consumer-rationing objective, under which the rates are designed to discourage the wasteful use of public utility services while promoting all use that is economically justified in view of the relationships between costs incurred and benefits received." (p. 292).

Bonbright further stated, "without doubt the most widely accepted measure of reasonable public utility rates and rate relationships is cost of service." (p. 294). He went on to describe a hypothetical example of the evolution of increased sophistication in rate structures for an electrical utility to better reflect cost of service. Bonbright began with a simplistic rate that only charges a uniform rate per kilowatt-hour. He stated the problem with this rate is that "in treating the total cost of the business as if it varied directly with the changes in the kilowatt-hour output of energy – a grossly false assumption – it violates the most widely accepted canon of fair pricing, the principle of service at cost." (p. 307). His hypothetical evolution of increasing rate sophistication went on to introduce a customer charge because a two-part rate based only upon energy and demand "overlooks the fact that a material part of the operating and capital costs of a utility business is more directly and more closely related to the number of customers than to the energy consumption on the one hand or maximum kilowatt demand on the other hand." (p. 311).

CECONY/O&R reflect their position in their cost of service approaches by classifying as customer-related any costs associated with the presence of customers on the electric delivery system and moving customer charges closer to such customer-related costs.

- 2. The attached spreadsheet includes the Joint Utilities data associated with the ECOS presentation on March 6, 2018.
- 3. Con Edison and O&R assert that this request is unduly burdensome and irrelevant because it does not contribute to the Commission's goal of developing a successor for Net Energy Metering rates by the end of 2018.

Response to Pace Interrogatories – Set Pace-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 2

Subject: Marginal Cost Recovery

- 1. Does the Company assert that its current mass market rates do or do not collect marginal costs for serving customers in the mass market classes? Please explain and provide documentation, including the marginal costs for each rate component of service and for each mass market rate classification.
- 2. Please provide an explanation of the sources of marginal costs recovered in mass market rates.

- 1. Con Edison's and O&R's current rates to all rate classifications, including mass market rate classifications, are not designed to collect the marginal costs for serving customers in each rate classification. Rather, Con Edison's and O&R's current rates to all rate classifications, including mass market rate classifications, recover the revenue requirement for each rate classification.
  - Concerning the request for documentation, this request is unduly burdensome because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018.
- 2. As explained in the response to JRP-2.1, Con Edison's and O&R's current rates are not designed to recover marginal cost for any rate classifications, including mass market rate classifications.

Response to Pace Interrogatories – Set Pace-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 3

Subject: Cost of Service Methodology

- 1. Please provide a detailed explanation of the cost of service methodology used by the Company in establishing mass market rates.
- 2. Please describe and numerically display the methodologies used for determining the classification and functionalization of costs in the cost of service study.
- 3. Please explain why the Company is using the methodology or methodologies that it is currently uses for each aspect of the ECOSS that the Company uses.
- 4. If the Company uses any form of minimum system, zero-intercept, zero-load, or other similar methodology, please provide a detailed description of the method. Please provide any citations or authorities supporting the selected method, and the reason for rejecting alternative methods.
- 5. Please provide a detailed list of the types and levels of costs that are: (1) included in costs that are classified as customer costs, (2) included in demand-related costs, and (3) included in energy-related costs in the cost of service study.
- 6. Please describe the Company's preferred cost of service methodologies. Please explain how the methods currently in use differ from the preferred approach. Please detail the cost and rate consequences of any deviation between the preferred method and the currently used methods. Please detail the Company's plans to change the methodologies that it currently uses in future rate proceedings.
- 7. Please detail the actual incremental costs the Company incurs to connect a new customer or initiate new customer service in each mass market rate class.
- 8. Please detail the costs that the Company would allocate to the customer cost category if the Company used a "Basic Customer Cost" methodology.

- 1. Please refer to the March  $6^{th}$  Joint Utilities' presentation and Con Edison's (Case 16-E-0060) and O&R's (Case 14-E-0493) last rate order.
- 2. Please refer to the March 6<sup>th</sup> Joint Utilities presentation.

- 3. The request is not relevant because it does not contribute to the Public Service Commission's goal of developing Mass Market NEM successor tariffs by the end of 2018. Notwithstanding the above, in overall response to this IR, Con Edison and O&R developed their most-recent ECOSs in accordance with prior practice and Commission precedent. Please also refer to the March 6<sup>th</sup> Joint Utilities presentation.
- 4. Please see slides 4 and 7 of the Joint Utilities' March 6 ECOS Analysis Presentation for Con Edison and O&R, respectively. These slides state that the Companies use the Minimum System method to determine the demand and customer classification of Primary Distribution Feeders and Secondary Distribution Conductors and Transformers. Both Companies use an average cost of a range of conductor/transformer sizes to develop the customer component of the distribution system. The minimum system method for Con Edison was first established in a collaborative process resulting in a Memorandum of Understanding ("MOU") in Case 04-E-0572. The Electric Utility Cost Allocation Manual published by the National Association of Regulatory Utility Commissioners ("NARUC") in January 1992 recognizes the Minimum System approach as an appropriate method to determine the demand/customer classification of distribution plant (p. 90). This methodology was fully vetted in the last Con Edison Electric Rate Case 16-E-0060 and was explicitly approved by the Commission in its Order dated January 25, 2017 and its Order Denying Rehearing issued September 14, 2017.
- 5. The requested information is provided in the Joint Utilities' March 6 presentation, [Slide 4 (Con Edison) / Slide 7 (O&R)]. This information is also provided on Excel spreadsheets in response to JRP-1.2.
- 6. The approach proposed by Con Edison and O&R in their last rate cases is the preferred cost of service approach.
- 7. This IR is not relevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018. Specifically, "the actual incremental costs the Company incurs to ... initiate new customer service in each mass market rate class" has no relevance in the determination of customer charges to Mass Market service classes that reflect the Commission's cost causation rate design principle.
- 8. Con Edison and O&R do not understand the meaning of the methodology characterized as "Basic Customer Cost."

Response to Pace Interrogatories – Set Pace-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 4

Subject: Cost Allocation

- 1. Please explain what cost allocation methods (i.e., coincident or non-coincident peak, and number of peak hours, months per year) the Company uses for each of the cost components of mass market rates. Please explain how these allocation methods operate to determine the revenue requirement associated with each component of each mass market rate. For example, if Cost "A" is allocated according to class NCP, please show the basis for calculating the class NCP, the costs to be allocated and their source, the calculations applying the allocator to the costs, and the resulting addition to the class revenue requirement.) Please provide electronic (Excel) tables with formulas intact for this information.
- 2. Please provide a detailed explanation and citations to authorities for each cost allocation method used in the Company's mass market rates. Please explain how these authorities support the use of the particular allocation method for that cost or category of costs.

- 1. The requested information concerning allocation methods is provided in the Joint Utilities' March 6 presentation, [Slide 4 (ConEd) / Slide 7 (O&R)]. This information is also provided on Excel spreadsheets in response to JRP-1.2.
  - Please see the testimony in Con Edison's (16-E-0060) and O&R's (14-E-0493) last rate cases for detailed information on the allocation approaches and results from the Con Edison's and O&R's most recently filed ECOS.
- 2. This request is unduly burdensome and irrelevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market successor tariff by the end of 2018.

Response to Pace Interrogatories – Set Pace-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 5

Subject: Rate Design

- 1. Does the Company agree with the content of the Brattle Group presentation that was discussed in the March 6, 2018 meeting? If there are any aspects of the presentation that the Company does not agree with, please identify them.
- 2. Does the Company agree with the statement of Dr. Faruqui that all policy matters (such as low income customer support or incentives for DG systems) should be excluded from rate design considerations? Would the Company support policy changes such as an increased and permanent ITC for solar and "e-stamps" to help reduce the energy burden on low income customers if these aspects were removed from rate design?
- 3. If the Company proposes a rate design that generally conforms with the Brattle Group recommendations (i.e. a three-part rate for mass-market customers), please describe the following aspects of the rate design:
  - a. What costs (e.g. primary distribution, secondary distribution, transformers, etc) will be recovered through the demand charge?
  - b. Will demand be measured based on NCP or CP? If based on CP, will it be based on the system (ISO) CP, the utility-specific CP, the zonal CP, the class CP, or some other measure?
  - c. What is the duration of the demand interval that would be used (i.e. 15 minute, 60 minute, etc)?
  - d. Will there be any time of use demand charges? If so, what will be the methodology for determining the peak seaons/days/hours?
  - e. For customers served by the Company under a standard offer service tariff, will any of the supply costs be recovered through demand charges? If so, please describe the demand rate structure for supply costs and whether it differs from the demand rate structure for T&D costs.
  - 4. If a customer whose previous highest individual peak demand was 10 kW hits a new highest individual monthly peak demand of 12 kW at a time when neither the system nor the class is peaking, what equipment must be added to serve this incremental peak demand? If no equipment must be added, what are the incremental costs associated with serving the additional 2 kW of customer peak demand?

- 5. What steps would the Company take to educate mass-market customers that would be subject to the three-part rate?
- 6. Does the Company believe that pilots or actions described on page 45 of the Brattle presentation should be performed before implementing mass-market three-part rates for NEM customers on January 1, 2020? Does the Company believe that there is sufficient time to design, implement, and learn from these pilots by January 1, 2020?
- 7. Slide 42 of the Brattle presentation shows that energy usage for medium and large customers increased by 0.8% and 2.1%, respectively, under the residential demand charge tariff compared to the flat rate. Does this increase in energy usage from this rate design concern the Company?
- 8. Will each of the Companies have metering infrastructure and billing systems in place that will:
  - a. Allow NEM customers to see the date and time of their peak usage in their monthly bill by January 1, 2020?
  - b. Allow all mass-market customers to see this value by January 1, 2020?
  - c. If the answer to either part (a) or part (b) is no, please indicate when the necessary metering and billing infrastructure will be operational for NEM and all mass-market customers to be able to receive this value on their monthly bill.

#### Response

- 1. Con Edison and O&R generally agree with the content of the Brattle Group March 6, 2018 presentation, "Rate Design for DER Customers in New York." The Joint Utilities especially agree with the overall focus of the Brattle presentation, which is summarized on slide 8 in the following quote from Principles of Public Utility Rates, James Bonbright, "One standard of reasonable rates can fairly be said to outrank all others in the importance attached to it by experts and public opinion alike the standard of cost of service."
- 2. This IR is not relevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018.

Notwithstanding the Join Utilities' assertion that this IR is not relevant, the Joint Utilities believe that it is Dr. Faruqui's position that electric rates should be determined in a manner that reflects the costs to provide service.

- 3. Con Edison and O&R cannot respond to the question at this time because it is premature. Rate design proposals will be submitted May 14, 2018 and Con Edison and O&R will provide a presentation on their rate design proposal on May 24, 2018.
- 4. This IR includes insufficient information to determine if any equipment must be added to serve the hypothetical incremental peak demand.

This IR is not relevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018. Specifically, the cost of additional equipment that may or may not be required if one mass market customer increases peak demand by 2 kW is not relevant to cost-based ratemaking. Rather, cost-based ratemaking for a service classification should be informed by the combined effect of all customers in the service classification on the utilization of Con Edison's and O&R's transmission and distribution systems.

Con Edison and O&R assert that cost -based rates should provide proper price signals related to the use of a utility's current transmission and distribution assets. Customers who increase demand from 10 kW to 12 kW is using the capacity-related components of the system, and should pay their fair share, according to the Commission's rate making principle of cost causation.

- 5. Con Edison and O&R cannot respond to the question at this time because it is premature. The approach to outreach must be coordinated with the recommended rate design approach which will not be submitted until May 14, 2018.
- 6. No, the Joint Utilities do not believe that it is necessary to perform pilots before implementing mass-market three-part rates for NEM customers on January 1, 2020. The Joint Utilities will be guided by the experience and learnings from other jurisdictions and utilities that have implemented demand charges for mass market customers.
- 7. No, the increase in energy usage that is shown on Slide 42 of the Brattle presentation is not concerning. The information presented by Brattle on Slide 42 is hypothetical, based on the assumed load profiles (shown on Slide 41) for Customers A (small but peaky), B (average customer) and C (large and less peaky) and the hypothetical "current," "TOU," and "Residential Demand" rate. The customer responses to the Brattle hypothetical TOU and demand rates that are summarized on Slide 42 are specific to the hypothetical load profiles and rates that were used in Brattle's example and are not indicative of the way that any group of actual customers would respond to any set of actual rate designs.

In addition, based on rate design principles, rate designs should empower economic decisions; it is an appropriate customer response to the introduction of properly-designed price signals with a demand charge that at least some customers would increase total usage. For example, a residential customer that could switch from the "Current" to "Residential Demand" rates on Slide 41 may respond by acquiring an electric vehicle that they charged at home during off-peak hours, when the EV charging would not affect the (on peak) demand charge. This customer's total usage would likely increase due to the EV charging that is deemed to be beneficial to society; this customer's on peak demand would likely decrease, in response to the on-peak demand charge.

8. a. The proposed rate design is targeted at new NEM customers after January 1, 2020 and those customers will be able to see the date and time of their peak usage.

- b. The Commission has not targeted this rate design for all mass market customers by 2020. Therefore, meter infrastructure and billing system capabilities will be in place to support those targeted customers by January 1, 2020.
- c. The implementation of rate design for all mass market customers will, as noted in Staff's January 30, 2018 rate design instructions (pp. 3,6) be dependent on the results of a bill impact analysis and reflect the principle of gradualism. All customers under the new rate design will have the necessary meters to provide this information.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 1

Since 2002 to present (which for most utilities will be approximately 5 rate cases), please indicate if the Company uses a historic embedded costs of service (ECOS), pro-forma (forecasted) ECOS, marginal cost of service (MCOS), or any other combination as a guide to allocate costs to service classes during an electric rate case. In addition, please describe how each study or multiple studies are used to develop customer charges and costs in each electric rate case.

Case	Type of Cost of Service Used	Explanation
18-E-xxxx	Combination of Pro- Forma ECOS, Historic ECOS, MCOS	
17-E-xxxx		
16-E-xxxx		
15-E-xxxx		
14-E-xxxx		
Etc.		

#### Response

The provision of the requested historical data requested is unduly burdensome and irrelevant to the Public Service Commission's goal of establishing a Mass Market NEM successor tariff by the end of 2018. As such Con Edison/ O&R provide the following latest available information.

#### For Con Edison:

Case	Type of Cost of Service Used	Explanation
16-E-0060		Monthly customer costs are calculated in the ECOS and are used as a guide in rate design.

#### For O&R:

Case	Type of Cost of Service Used	Explanation
18-E-0067		Monthly customer costs are calculated in the ECOS and are used as a guide in rate design.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 2

Please expla	ain in	detail any	y chang	ges i	n metl	nodolo	gy use	d in each	of the Co	mpa	ny's elect	tric
ECOS stud	lies c	onducted	since	200	)2. If	metho	odology	and/or	allocator	rs ha	ve chang	ged
throughout	the	various	steps	of	each	rate	case,	please	indicate	the	change	in
methodolog	gy:											

as filed in Direct Testimony
as per MOU, Stipulation Agreement, etc.
as modified per Joint Proposal
as modified per Commission Order

The table below can be used as a template for a response.

Case	Methodology Change	Methodology	Methodology	Methodology
	[as proposed in Utility	Change	Change	Change
	Direct Testimony]	[as per Joint	[as per	[as per MOU,
		Proposal]	Commission	Stipulation
		_	Order]	Agreement, etc.]
18-E-				
XXXX				
17-E-				
XXXX				
16-E-				
XXXX				
15-E-				
XXXX				
Etc.				

#### Response

Con Edison/ O&R assert that this request is unduly burdensome and irrelevant to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018.

Case: 15-E-0751

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 3

Please identify, in table format as illustrated below, the degree to which the Company classified costs associated with the specified FERC accounts as "demand-related" or "customer-related" or "other-related" (at both primary and secondary voltage facilities) in each electric embedded cost of service (ECOS) study it filed from 2002 to present. For example, a cell might read, "100% demand/0% customer." If any electric ECOS study employed a different demand/customer/other (please specify "other" in your answer) classification between primary and secondary voltage facilities within the same FERC account, please include such separate demand/customer classifications for each voltage facility.

PRIMARY FERC ACCOUNTS – Demand/Customer/Other Breakdown

Case	FERC	FERC	FERC	FERC	FERC
	Accoun	Accoun	Accoun	Accoun	Accoun
	t 364	t 365	t 366	t 367	t 368
18-E-xxxx	50% demand				
	50% customer				
17-E-xxxx					
16-E-xxxx					
15-E-xxxx					
14-E-xxxx					
Etc.					

<sup>\*</sup>Note: The total customer/demand/other split for each FERC Account should equal 100%

#### SECONDARY FERC ACCOUNTS – Demand/Customer/Other Breakdown

Case	FERC Accoun t 364	FERC Accoun t 365	FERC Accoun t 366	FERC Accoun t 367	FERC Accoun t 368
18-E-xxxx	100% demand				
17-E-xxxx					
16-E-xxxx					
15-E-xxxx					

14-E-xxxx			
Etc.			

Note: The total customer/demand/other split for each FERC Account should equal 100%

#### Response

The provision of the historical data requested in IR UIU-3 is unduly burdensome and irrelevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018. Therefore, this response provides only the requested information from Con Edison's and O&R's most recent ECOS, which is provided in the Joint Utilities' March 6 presentation, [Slide 4 (ConEd) / Slide 7 (O&R)]. This information is also provided in Excel spreadsheets in response to JRP-1.2.

> Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 4

In each of the Company's electric ECOS models filed from 2002 to present, please explain how the demand/customer/other split was derived for primary and secondary distribution FERC accounts 364-368. Was there a special study performed by the Company to obtain the demand/customer/other split for primary and secondary distribution accounts 364-368? If yes, please provide a copy of the special study and the workpapers with formulas unlocked. If no special study was performed to derive the split, indicate how the answer was derived (i.e., previous rate case Joint Proposal, Rate Design Stipulation Agreement, MOU). Please explain in detail and provide all documents to support your answer.

#### Response

The provision of the historical data requested by UIU is unduly burdensome and irrelevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018. As such, Con Edison and O&R will provide only the latest available information based on UIU's request. Please also refer to March 6<sup>th</sup> Joint Utility presentation for this information.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 5

Compared to the electric ECOS study the Company filed in the most recent rate case, did any electric ECOS study the Company filed in previous rate cases since 2002 employ a different cost classification (customer, demand, energy, etc.) for any electric FERC account other than accounts 364, 365, 366, 367, and 368? If so, please illustrate such demand/customer classifications for each such FERC account in table format as illustrated below.

Proceeding	FERC Account [X]	FERC Account [Y]	Etc.
18-E-xxxx			
17-E-xxxx			
16-E-xxxx			
15-E-xxxx			
14-E-xxxx			

#### Response

This request is unduly burdensome and irrelevant because it does not contribute to the Public Service Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 6

As a follow-up to the Joint Utilities presentation on March 6, 2018, please provide the following detailed information for each utility from the Company's latest ECOS model:

#### Functionalization Step:

During the Functionalization step in the Company's most recent electric ECOS model, please list <u>ALL</u> FERC Accounts and respective costs. If the FERC Accounts are further broken down by primary and secondary accounts, please indicate the costs for each. See below for a template example.

FERC Accounts	Costs
	[\$ M]
364 – Primary	\$8,000
364 - Secondary	\$10,000
365 - Primary	
365 - Secondary	
Etc.	

#### Classification Step:

During the Classification step in the Company's most recent electric ECOS model, please provide the percent classification of costs for each FERC Account (i.e., customer related, demand related, energy related, labor related, etc.). See below for a template example.

FERC	% of	% of	% of	Etc.	Total
Account	Customer	Demand	Energy		Costs
riccount	Related	Related	Related		[%]
	Costs	Costs	Costs		
364 -	50%	50%	0%	0%	100%
Primary					
364 -	20%	80%	0%	0%	100%
Secondary					
Etc.					

#### Allocation Step

During the Allocation step in the Company's most recent electric ECOS model, please provide the allocation of costs for each FERC Account

broken down by each Service Class and subclass defined in the Company's ECOS model. Please also list the type of allocator used (<u>i.e.</u>, customer allocator, primary demand allocator, secondary demand allocator ...). See below for a template example.

FERC Account	Type of Costs	Type of Allocator	SC-1 Non-heating Cost Allocation [%]	SC-1 Heating Cost Allocation [%]	SC-2 Cost Allocation [%]	SC-3 Cost Allocation [%]	Etc.	Total Cost Allocation [%]
364 – Primary	Demand	NCP- Primary	10%	30%	20%	35%		100%
	Customer	Customer- Primary	3%	85%	5%	2%		100%
364- Secondary	Demand	NCP- Secondary						
	Customer	Customer- Primary						
Etc.								

Please provide the resulting customer charges for each service class from the Company's ECOS model. If the Company used multiple ECOS models, please provide the answer from each model.

Resulting Customer Charge Costs from the ECOS model

	SC-1 Cost	SC-2	SC-3	Etc.
	Cost	Cost	Cost	
Customer				
Charge				
Number				
of				
Customers				

#### Response

This request is irrelevant because it does not contribute to the Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 7

Please list all the components that constitute the monthly residential electric customer charges (<u>i.e.</u>, administrative costs, postage, building rent costs, etc.). If the utility has multiple residential service classes (or subclasses), please provide the customer component breakdown for each service class or subclass.

#### Response

Please note the information provided below represents customer-related costs as identified in the ECOS study. Customer costs do not necessarily represent customer charges.

#### For Con Edison:

Residential Customer Cost
Components
High Tension OH/UG – Customer
Transformers OH – Customer
Transformers UG – Customer
OH Lines Customer
UG Lines Customer
Services – OH
Services – UG
Meter Service Provider
Meter Installations
Meter Ownership
Utility Metering
Services on Customer Premises
Customer Accounting
Meter Data Service Provider
Printing and Mailing a Bill
Receipts Processing
Uncollectibles
Customer Service

#### For Orange and Rockland:

Residential Customer Cost
Components
High Tension OH/UG – Customer
Transformers OH – Customer
Transformers UG – Customer
OH Lines Customer
UG Lines Customer
Services – OH
Services – UG
Meter Service Provider
Meter Installations
Meter Ownership
Installation on Cust Premises
Customer Accounting
Meter Data Service Provider
Printing and Mailing a Bill
Receipts Processing
Uncollectibles
Customer Service

Note, these customer related functions include an allocation of overheads, such as but not limited to A&G expenses, common/general plant, payroll taxes.

Printing and Mailing a Bill and Receipts Processing are customer related functions that are not included in residential customer charges as they are separately shown on customer bills.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 8

Are there service classes (or subclasses) that are analyzed separately (<u>i.e.</u>, in the allocation step) in the utility's ECOS study and then combined with another service class prior to the revenue allocation step? If so, please identify the service classes this applies to, the variation in the rate of returns before and after combining service classes or subclasses, and explain why the Company follows this practice.

#### Response

This request is unduly burdensome and irrelevant because it does not contribute to the Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 9

Please explain if each utility tracks the load profiles for net metered residential customers? If the answer is no, when does the utility plan on obtaining this information?

#### Response

For both Con Edison and Orange and Rockland:

No, they are not separately considered.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 10

Please explain how many residential customers are currently and historically enrolled in Time of Use (TOU) rates? What percentage does this represent out of the entire electric residential customer population? How many of these customers have Plug-In Electric Vehicles? Please breakdown the number of customers by service class and/or sub classes.

#### Response

Provision of the requested historical data is unduly burdensome because it does not contribute to the Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018. As such, Con Edison and O&R will provide only the latest available information based on UIU's request and to the best of Con Edison's and O&R's ability.

For Con Edison, there are approximately 2.9 million residential (Service Classification ("SC") 1) accounts of which less than 2,000 accounts are on a TOU rate. As of March 2018, there were approximately 50 accounts with a Plug-In Electric Vehicle that were on the voluntary time-of-use rate under SC 1. These estimates do not include accounts that may be in multiple dwelling buildings (e.g., SC 8, 12 or 13) such as apartments.

For O&R, there are approximately 198,000 residential (Service Classification ("SC") 1) accounts and approximately 3,500 SC 19 accounts (i.e., residential accounts on a TOU rate). Currently, O&R does not have a specific rate for PEV charging; however, the Company estimates that, in total, there are currently approximately 980 plug-in electric vehicles registered in the service territory.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 11

Please explain if current and historical TOU rates are a) derived revenue neutral to the entire electric residential service class (generally known as SC1 in a utility ECOS model) or b) based on a separate service class from the electric ECOS cost profile. Please explain your answer in detail and include data such as the resulting rate of returns of the residential TOU class vs. SC1 class if applicable.

#### Response

For Con Edison:

TOU rates are developed on a revenue neutral basis.

For Orange and Rockland:

The electric ECOS study submitted in Case 18-E-0067 has two residential classes: SC 1 Residential and SC 19 Voluntary TOU rate class. These classes produce the following rates of return:

SC 1: 7.91% SC 19: 9.82%

> Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 12

Please explain the different usage profile and cost profile of residential customers under (a) the standard residential service class (generally known as SC1) and (b) residential customers under Time of Use Service Classes (i.e., Niagara Mohawk's SC-1C, Central Hudson's SC-6, etc.).

#### Response

Con Edison and O&R cannot respond because it is not clear what UIU means by "usage profile" or "cost profile."

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 13

Please explain how many residential customers are currently net metered residential customers in the utility service territory from 2006 to present? What percentage does the present number of net metering residential customers represent out of the entire electric residential population? Please breakdown the number of customers by service class and/or sub classes.

#### Response

Provision of the requested historical data is unduly burdensome because it does not contribute to the Commission's goal of developing a Mass Market NEM successor tariff by the end of 2018. As such, Con Edison and O&R will provide only the latest available information based on UIU's request.

For Con Edison, as of March 2018, there were about 18,000 residential solar accounts, with less than 10 of these accounts billed on time-of-day rates. This represents approximately 0.6% of the SC No. 1 population.

For O&R, as of March 2018, there were 6,359 residential solar accounts, with 159 of these accounts billed on time-of-day rates. This represents approximately 3.2% of the SC No. 1 and SC No. 19 population.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 14

How many customers does the Company forecast to:

- a. Install solar on customer premise in the next 3 years?
- b. Install geothermal unit on customer premise in the next 3 years?
- c. Buy an electric vehicle in the next 3 years?

#### Response

- a. Con Edison does not have a current forecast of the number of customers who will install solar on their premises in the next three years; however, the current forecast of additional generating capacity to be installed is approximately 200 MW over the next three years. O&R forecasts 3,900 customers will install solar on their premises in the next three years.
- b. The Companies do not forecast the number of geothermal units on premises.
- c. Con Edison forecasts approximately 32,700 customers will buy an electric vehicle in the next three years. O&R forecasts approximately 2,500 customers will buy an electric vehicle in the next three years.

c

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 15

Please explain if the Company has billing indicators that distinguish between electric heating and non-heating residential customers.

#### Response

For Con Edison, pursuant to the Joint Proposal adopted by the Commission in Case 09-E-0428, residential heating (SC 7) and non-heating (SC 1) classes were consolidated into one common class under SC 1. While the Company may still have customers coded under legacy heating codes, the data may not accurately represent the number of electric heating customers.

For O&R, pursuant to the Order in Case 10-E-0362, the Company closed its residential special provision subclasses (i.e., residential space heating, water heating, and heat pump) to new customers. While the Company still has customers coded under these special provisions, the data may not accurately represent the number of electric heating customers.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 16

Please explain if the Company has load profiles of various electric residential customers (i.e., heating, non-heating, low income, customer with solar, customers with electric vehicles, customers with geothermal technology, etc.). If the Company currently has this information, please provide the range of current and historic load factor values for the various types of residential customers.

#### Response

Please refer to Con Edison's and O&R's September 20, 2017 presentation on Data Availability for the Rate Design Working Group.

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 17

Please provide the monthly bill usages ranging from 0 to the maximum usage experience in <u>each</u> residential and small commercial (non-demand) service class and subclass for January and July 2017. Please also provide the number of customers and number of low-income customers (residential only) in each billing usage range. If this information is not available during the requested time period, provide the latest year that the data is available. Please note, most utilities have provided this information in utility rate cases and it did not seem to be an issue for them to obtain the information.

#### Response

Please see the attached files for Con Edison and O&R.

## CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. Response to UIU-17

Range of Usages for Mass Market Customers - January 2017

	_	Number of Accounts				
	_		_			
Min kWh	Max kWh	<u>SC 1</u>	<u>Income</u>	SC2		
0	250	1,184,922	227,859	176,616		
250	500	752,380	149,461	86,144		
500	1000	413,022	54,873	70,102		
1000	1500	90,665	8,241	25,826		
1500	2000	28,460	2,014	12,133		
2000	2500	11,265	639	6,325		
2500	3000	5,221	275	3,810		
3000	3500	2,827	125	2,599		
3500	4000	1,742	60	1,580		
4000	4500	1,074	34	929		
4500	5000	741	15	526		
5000	6000	955	19	476		
6000	7000	566	10	198		
7000	8000	400	3	118		
8000	9000	251	0	74		
9000	10000	180	0	49		
10000	15000	511	2	159		
15000	20000	217	1	60		
20000	25000	107	1	21		
	>25000	<u>211</u>	<u>0</u>	<u>57</u>		
		2,495,717	443,632	387,802		

NOTE: The above is based on estimates that may reflect normalized monthly billing (e.g., realigned bills for cancel/rebills). Data does not include NYPA accounts.

## CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. Response to UIU-17

Range of Usages for Mass Market Customers - July 2017

	_	Number of Accounts				
	_		SC1 Low	_		
Min kWh	Max kWh	<u>SC 1</u>	<u>Income</u>	SC2		
0	250	695,786	122,913	183,463		
250	500	834,109	158,276	85,070		
500	1000	684,985	129,776	73,610		
1000	1500	175,485	24,211	28,477		
1500	2000	57,303	4,970	12,606		
2000	2500	22,617	1,308	6,225		
2500	3000	10,579	459	3,464		
3000	3500	5,446	155	2,305		
3500	4000	3,291	56	1,324		
4000	4500	2,076	29	840		
4500	5000	1,367	19	403		
5000	6000	1,644	10	321		
6000	7000	938	4	127		
7000	8000	609	3	66		
8000	9000	388	1	45		
9000	10000	247	1	48		
10000	15000	639	3	89		
15000	20000	226	2	39		
20000	25000	138	0	17		
	>25000	<u>258</u>	<u>0</u>	<u>36</u>		
		2,498,131	442,196	398,575		

NOTE: The above is based on estimates that may reflect normalized monthly billing (e.g., realigned bills for cancel/rebills). Data does not include NYPA accounts.

## Orange and Rockland Utilities, Inc. Response to UIU-17

Range of Usages for Mass Market Customers - January 2017

kWh Range		<u>e</u>	<u>SC1</u>	SC1 Low Income	SC2 Non-Demand Billed	
		<u>&lt;</u>	100	11,570	161	1,413
>	100	<u>&lt;</u>	200	15,915	898	628
>	200	<u>&lt;</u>	300	19,153	1,271	523
>	300	<u>&lt;</u>	400	19,549	1,331	670
>	400	<u>&lt;</u>	500	19,549	1,240	633
>	500	<u>&lt;</u>	600	18,069	1,011	453
>	600	<u>&lt;</u>	700	15,917	809	206
>	700	<u>&lt;</u>	800	13,159	611	83
>	800	<u>&lt;</u>	900	10,588	433	42
>	900	<u>&lt;</u>	1,000	8,522	326	39
>	1,000	<u>&lt;</u>	1,100	6,757	218	13
>	1,100	<u>&lt;</u>	1,200	5,324	182	8
>	1,200	<u>&lt;</u>	1,300	4,389	151	6
>	1,300	<u>&lt;</u>	1,400	3,555	98	5
>	1,400	<u>&lt;</u>	1,500	2,717	77	11
>	1,500	<u>&lt;</u>	1,600	2,274	62	4
>	1,600	<u>&lt;</u>	1,700	1,770	46	1
>	1,700	<u>&lt;</u>	1,800	1,446	45	1
>	1,800	<u>&lt;</u>	1,900	1,282	34	0
>	1,900	<u>&lt;</u>	2,000	1,025	36	2
>	2,000	<u>&lt;</u>	2,100	858	33	2
>	2,100	<u>&lt;</u>	2,200	760	25	3
>	2,200	<u>&lt;</u>	2,300	627	17	1
>	2,300	<u>&lt;</u>	2,400	532	18	0
>	2,400	<u>&lt;</u>	2,500	431	14	1
		>	2,500	<u>3,530</u>	<u>96</u>	<u>13</u>
				189,268	9,243	4,761

## Orange and Rockland Utilities, Inc. Response to UIU-17

Range of Usages for Mass Market Customers - July 2017

kWh Range		<u>e</u>	<u>SC1</u>	SC1 Low Income	SC2 Non-Demand Billed	
		<u>&lt;</u>	100	12,091	134	1,599
>	100	<u>&lt;</u>	200	11,472	517	586
>	200	<u>&lt;</u>	300	14,514	774	503
>	300	<u>&lt;</u>	400	15,621	879	632
>	400	<u>&lt;</u>	500	15,312	911	610
>	500	<u>&lt;</u>	600	14,521	812	415
>	600	<u>&lt;</u>	700	13,619	740	199
>	700	<u>&lt;</u>	800	12,351	660	75
>	800	<u>&lt;</u>	900	11,123	641	43
>	900	<u>&lt;</u>	1,000	9,970	548	47
>	1,000	<u>&lt;</u>	1,100	8,406	521	11
>	1,100	<u>&lt;</u>	1,200	7,278	417	9
>	1,200	<u>&lt;</u>	1,300	6,156	339	6
>	1,300	<u>&lt;</u>	1,400	5,223	299	1
>	1,400	<u>&lt;</u>	1,500	4,528	248	8
>	1,500	<u>&lt;</u>	1,600	3,759	216	1
>	1,600	<u>&lt;</u>	1,700	3,046	172	0
>	1,700	<u>&lt;</u>	1,800	2,601	152	1
>	1,800	<u>&lt;</u>	1,900	2,173	118	0
>	1,900	<u>&lt;</u>	2,000	1,866	86	0
>	2,000	<u>&lt;</u>	2,100	1,597	81	1
>	2,100	<u>&lt;</u>	2,200	1,341	62	2
>	2,200	<u>&lt;</u>	2,300	1,119	54	1
>	2,300	<u>&lt;</u>	2,400	928	49	0
>	2,400	<u>&lt;</u>	2,500	757	36	1
		>	2,500	<u>5,753</u>	<u>194</u>	<u>4</u>
				187,125	9,660	4,755

Response to UIU Interrogatories – Set UIU-1 Date of Response: 3/28/2018 Responding Witness:

Question No.: 18

Approximately how many residential heating and non-heating customers are currently in the Company's service territory that are (1) multifamily and (2) single family? Does the Company currently have the ability to extrapolate this information from its CIS system?

#### Response

As of December 2017, Con Edison had approximately 2.9 million single family accounts in total under SC 1 and approximately 2,338 multifamily customers. As mentioned in the response to UIU-15, residential heating and non-heating classes were consolidated into one common class under SC 1 pursuant to the Joint Proposal in Case 09-E-0428. The electric residential multifamily customers are included in service classes 8 and 12.

For O&R, there are 7,135 single family residential heating accounts, 597 multifamily residential heating accounts, 170,897 single family residential non-heating accounts, and 21,073 multifamily residential non-heating accounts.

Response to SEIA Interrogatories – Set SEIA-3 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 1

How do Con Edison's and O&R's current MCOS methodologies and assumptions differ from those proposed in the Phase I VDER proceeding?

#### Response

Please refer to Con Edison and O&R's May 1, 2017 implementation plan filings in compliance with the March 9<sup>th</sup> VDER Order (Case 15-E-0751).

Response to SEIA Interrogatories – Set SEIA-3 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 2

Please describe any benefits that DERs provide to the transmission and distribution system that are not reflected in Con Edison's and O&R's current MCOS models. Does Con Edison/O&R plan to study or has Con Edison/O&R studied any of these benefits? If so, provide related studies, reports, memoranda, and workpapers.

#### Response

On the assumption that this question is referring to Con Edison and O&R's current MCOS studies, all benefits that have been identified are reflected in the models supporting the studies.

Response to SEIA Interrogatories – Set SEIA-3
Date of Response: 3/28/2018
Responding Witness:

#### Question No.: 3

Please describe costs and risks of traditional transmission and distribution system investments that are not reflected in Con Edison's and O&R's models.

- a. For each cost and risk, please describe to what extent and how a) shareholders and b) ratepayers bear the cost or risk.
- b. Do Con Edison or O&R plan to study or have Con Edison or O&R studied any of these costs or risks? If so, provide related studies, reports, memoranda, and workpapers.

#### Response

Con Edison and O&R object to this question as vague, overbroad, and unduly burdensome because it calls for the preparation of a special study. Without waiving the foregoing objection, please refer to Con Edison and O&R's Initial Distributed System Implementation Plans, filed on June 30, 2016 in Case 14-M-0101.

Response to SEIA Interrogatories – Set SEIA-3
Date of Response: 3/28/2018
Responding Witness:

#### Question No.: 4

With respect to calculating the LSRV using a ten highest usage hours approach:

- a. How would Con Edison/O&R's ten highest usage hours be defined? That is, at what level of granularity?
- b. If the ten highest usage hours would be calculated for Con Edison/O&R's entire service territory, rather than for specific to local areas of the service territory, how would the local areas line up with sub-regions designated in the MCOS methodology?

#### Response

4a. No changes have been proposed to the LSRV calculation since ConEdison and O&R filed their implementation plans on May 1, 2017 in compliance with the March 9<sup>th</sup> VDER Order.

4b. This analysis is not necessary because Con Edison and O&R have not proposed any changes to the LSRV computation.

Response to SEIA Interrogatories – Set SEIA-3
Date of Response: 3/28/2018
Responding Witness:

#### Question No.: 5

Please explain how existing DERs are incorporated into MCOS studies and capital improvement plan projections.

- a. Are existing DERs assumed to remain in service in perpetuity?
- b. What capacity factor assumptions are used for in-service DERs?
- c. Are future deployments of DERs taken into account when forecasting systemload?
- d. How is degradation in existing DER generation over time taken into account?
- e. Are DERs modeled separately based on technology, location, or any other factor?
- f. Do existing DERs reduce projected load that is used as an input to MCOS studies and capital improvement plan

projections? Are existing DERs included in the baseline when calculating projected changes in load?

#### Response

For all subparts to this question, please refer to Appendix H and Appendix I of Con Edison and Appendix F of O&R's Initial Distributed System Implementation Plans, filed on June 30, 2016 in Case 14-M-0101.

Response to SEIA Interrogatories – Set SEIA-3 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 6

Do MCOS studies incorporate the potential for vehicle and heating electrification?

- a. If so, how do such studies incorporate projections for electrification?
- b. If not, why not?

#### Response

For all subparts to this question, please refer to III, Section B of Con Edison's and Chapter 1 of O&R's Initial Distributed System Implementation Plans, filed on June 30, 2016 in Case 14-M-0101.

Response to SEIA Interrogatories – Set SEIA-3
Date of Response: 3/28/2018
Responding Witness:

#### Question No.: 7

Please provide a citation for the NYISO rule that prohibits more injections than utility default load.

- a. Please provide a citation to this rule.
- b. How does this rule apply: on a geographic scale (e.g. zone or node), voltage level, or some other way?
- c. Please explain how Con Edison and O&R currently manage their systems to comply with this rule.
- d. How often in the last 36 months have Con Edison and O&R been in a situation where injections exceed default load?

#### Response

NYISO requires that each Load-Serving Entity's reported hourly load by zone to be non-zero and will reject a negative value. While neither Con Edison nor O&R have yet to experience negative load hours, the combination of VDER energy injections and retail choice migration could result in either Company having negative load hours.

Response to SEIA Interrogatories – Set SEIA-3
Date of Response: 3/28/2018
Responding Witness:

#### Question No.: 8

At the March 6 conference, Con Edison stated that its preference is for DERs above a certain size threshold (e.g. 100 kW) to participate in NYISO to get compensation, rather than simply being a load modifier.

- a. In Con Edison/O&R's opinion, what kind of DERs should be subject to the threshold? Should all types of DERs be subject to the same threshold?
- b. Please provide current DER installations and capacity, by DER type and by node, on Con Edison's and O&R's systems.
- c. Please provide projected DER installations and capacity, by DER type and by node, on Con Edison's and O&R's systems.

#### Response

The fundamental premise of the question is incorrect. The Con Edison and O&R position is that the NYISO's minimum threshold level for participation, e.g., 100 kW, should be employed as a threshold at some future date. In the interim, Con Edison and O&R recognize that the threshold should be established at a higher kW level.

- a. The Con Edison and O&R position is that any technology that has the ability to inject into the grid and is not grandfathered into an alternative treatment should be subject to this threshold. The threshold should apply to all DER technologies.
- b. Con Edison and O&R do not currently have all of these data points readily available.
   Please refer Standardized Interconnection Requirements Inventory filed monthly in Matter Number 13-00205.
- c. Con Edison and O&R do not currently have all of these data points readily available. Please refer Standardized Interconnection Requirements Inventory filed monthly in Matter Number 13-00205

Response to SEIA Interrogatories – Set SEIA-3 Date of Response: 3/28/2018 Responding Witness:

#### Question No.: 9

At the March 6 conference, Con Edison stated that DRV could "conflict or overlap with demand response programs." Please explain this statement. In what way or ways would the DRV signal conflict with demand response programs?

#### Response

A DRV could conflict with a demand response program because the price could be different and the time that that the resources are called could be different. The top 10 hours, as designated through DRV, could be when the resources are not needed, for example, if there are locational constraints due to an outage.

Response to SEIA Interrogatories – Set SEIA-3
Date of Response: 3/28/2018
Responding Witness:

#### Question No.: 10

At the March 6 conference, Con Edison described an alternative approach under which dispatchable resources would not receive LSRV compensation following a non-wires solicitation in the area.

- a. Please explain whether this approach would apply DERs that pair energy storage with a non-dispatchable DER resource such as solar or wind.
- b. Would Con Edison consider such a resource to be "dispatchable" in all cases? Please explain your response.

- a. The Joint Utilities discussed four potential approaches for situations where DER is paired with storage in comments filed last year; the Commission has not acted to implement any of the four proposed approaches. See the Joint Utilities July 24, 2017 response to Commission Notice Soliciting Comments Regarding Value of Distributed Energy Resource Implementation Proposals and Cost Mitigation at pages 3-5.
  <a href="http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={71DDFBD8-2D36-4DE6-B052-2E1E5E26C23C}">http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={71DDFBD8-2D36-4DE6-B052-2E1E5E26C23C}</a>
- b. A determination regarding whether such resources are dispatchable would be dependent on the details associated with their proposal as part of a non-wires solicitation.