



JOINT UTILITIES
OF NEW YORK

VDER Rate Design Working Group Presentation on Mass Market Bill Impacts

October 10, 2018

Meeting Objective and Agenda

- Meeting Objective:

The purpose of this presentation is to describe and explain the Joint Utilities' bill impact analyses for the six rate design proposals that were selected by the Department of Public Service Staff.

- Agenda:

- Review of Staff's rate design and bill impact process
- Preliminary matters
- The Joint Utilities' bill impact filings
- Bill impact results
- Questions from Rate Design Working Group

Rate Design Process

- The Rate Design Working Group has followed a two-stage process to select a new rate design for mass market customers who install distributed generation after January 1, 2020:
 - Phase One: Meetings of the Rate Design Working Group in 2017 and 2018; Phase One culminated in the filing of rate design proposals on May 29, 2018.
 - Phase Two:
 - In its June 29 letter, Staff selected four rate design proposals and two sensitivity rate designs to be evaluated by the Joint Utilities.
 - On August 17, the Joint Utilities submitted the rate designs specified in the June 29 letter.
 - The Joint Utilities' bill impact results and models were filed September 28.

Preliminary matters: Selected Rate Design Proposals

- The Joint Utilities prepared bill impact analyses for residential and small (non-demand) commercial customers for the following rate design proposals:

Proposal	Comments
JU TOU Demand	As filed
JU 2 Demand	As filed
Clean Energy Parties (“CEP”) TOU	Modified by Staff
Alternative TOU kWh	Based on JU demand rate proposals
Sensitivity: Alternative TOU kWh	With reduced customer charge
Sensitivity: CEP TOU	With reduced customer charge

Preliminary matters: Bill Impact Customer Profiles

- The Joint Utilities' bill impact analyses are based on a sample of residential and small (non-demand) commercial customers by stratum (usage range) and load factor.
 - The table below provides data on residential average monthly kWh usage by stratum.

Residential Stratum Average Monthly kWh						
Stratum	Con Edison	Central Hudson	National Grid	NYSEG	Orange & Rockland	RG&E
1	173	690	274	220	327	230
2	328	1,009	544	400	679	405
3	476		690	598	1,052	596
4	703		1,056	885	1,626	862
5	1,396		1,481	1,556	4,435	1,371
6	18,919					

Note: Central Hudson has end-use based stratum, rather than usage-based stratum. All Central Hudson residential non-heating customers are included in Stratum 1 and all residential heating customers are included in Stratum 2

Preliminary matters: Bill Impact Customer Profiles (Continued)

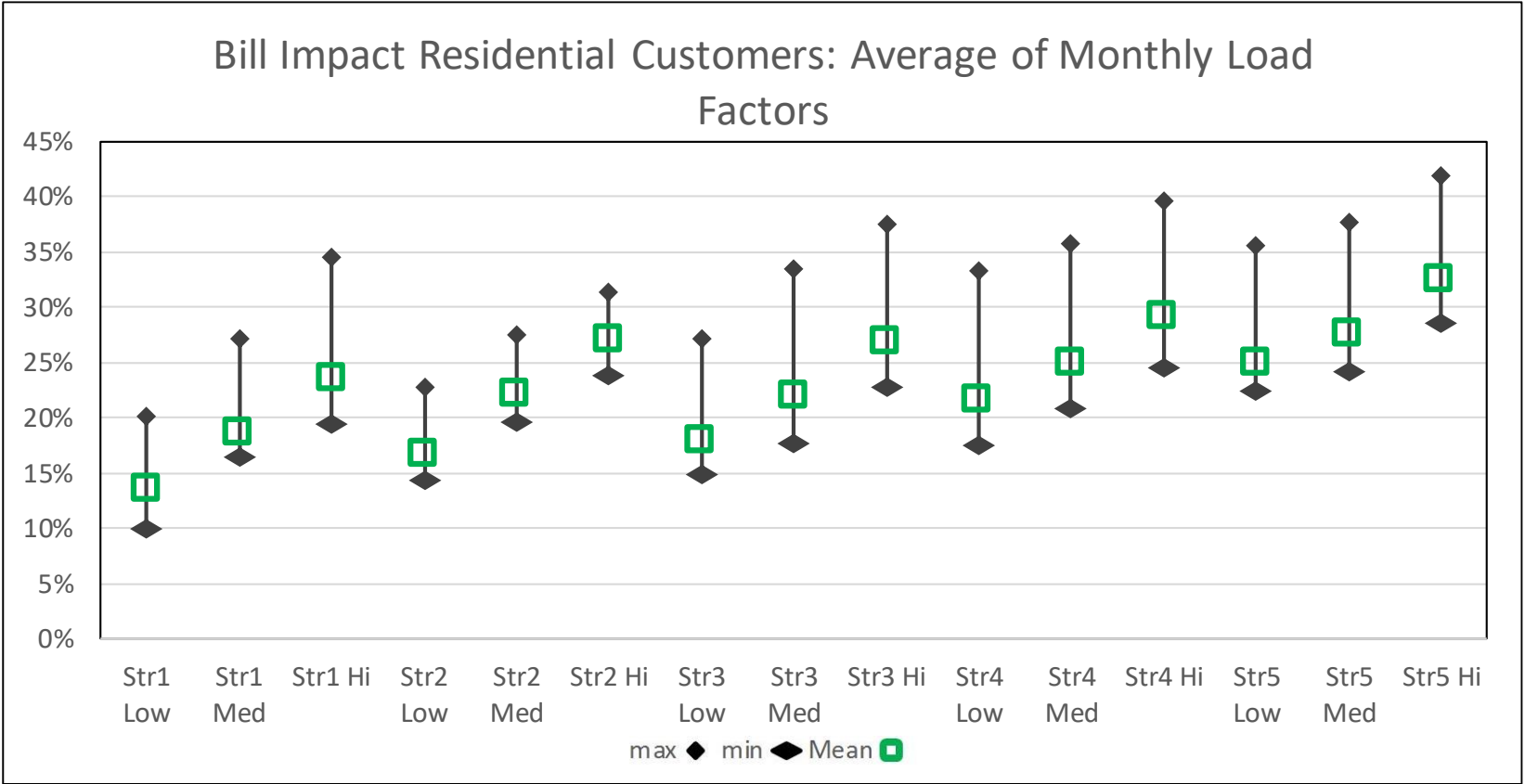
- The table below shows the basis for selecting customers by load factor in each stratum.

Load Factor	Stratum Percentile
Low	25 th percentile
Medium	50 th percentile
High	75 th percentile

- Con Edison, Central Hudson, National Grid, and Orange and Rockland selected the bill impact customers from their load research samples.
- NYSEG and RG&E determined bill impact profiles using load data from third party vendors, modified to match stratum limits and to produce target Low, Medium and High load factors.
 - NYSEG and RG&E load factor data was obtained from National Grid.

Preliminary matters: Bill Impact Customer Profiles (Continued)

The chart below shows the ranges of low, medium and high load factors, by stratum, defined by the utilities for residential customers included in the bill impact analyses.



Note: Stratum 1 and 2 load factor statistics are based on data from all six utilities. Stratum 3, 4, and 5 statistics are based on data from Con Edison, National Grid, NYSEG, Orange and Rockland, and RG&E.

Preliminary matters: Solar Bill Impact Customer Profiles

Hourly customer usage for solar scenarios was developed as follows:

- NYSERDA's solar value stack calculator is the source of solar output data by location.
 - This calculator contains solar data (8,760 hourly kWh produced by a 1 kW (DC) system) for Albany, Binghamton, Brookhaven, Buffalo, Ithaca, New York City, Plattsburgh, Rochester and Syracuse.
 - Data is available for 2015 and 2016 (2017 is not yet available).
 - The Joint Utilities used data for a south-facing roof mount solar system
- For any city used in the analysis, the 2015 and 2016 data were averaged.

Preliminary matters: Solar Bill Impact Customer Profiles (Continued)

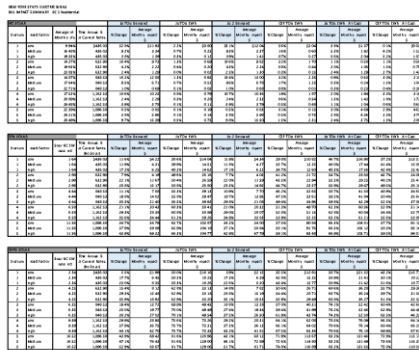
- The 2015-2016 averaged data for the cities was then averaged for each utility as follows:
 - Con Edison – NYC
 - O&R – average of Albany and NYC
 - Central Hudson – average of Albany and NYC
 - National Grid – average of Syracuse, Buffalo, Albany and Plattsburgh
 - NYSEG – average of Ithaca and Binghamton
 - RG&E – Rochester
- For each customer:
 - The annual kWh offset by solar (i.e., 70% and 100% of annual usage) was divided by the kWh produced by a 1 kW system to determine the solar DC kW installed.
 - The solar DC kW installed was multiplied by the applicable averaged hourly kWh produced by a 1 kW system to create an hourly solar output profile that was netted against the customer's hourly usage.

September 28 Bill Impact Filings - Overview

The Joint Utilities' Bill Impact results filed September 28, are organized as shown below; further explanation for the filing is provided in the following slides.

Page 1

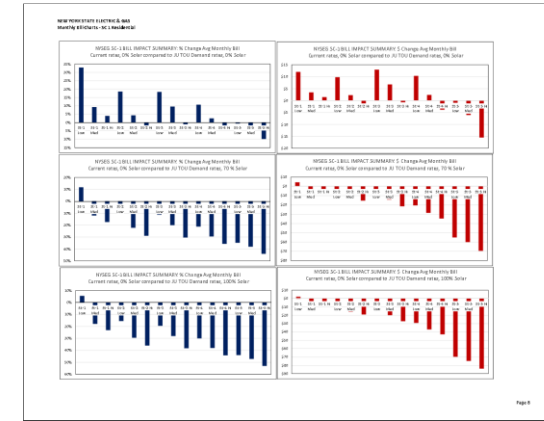
Bill Impact
Summary: \$ and
% change in
annual bills



Category	Item	Current Rate	Proposed Rate	% Change
Electricity	Basic Service Charge	\$10.00	\$10.00	0%
	Energy Charge	\$0.10/kWh	\$0.10/kWh	0%
	Transmission & Distribution Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electric Delivery Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
Gas	Basic Service Charge	\$10.00	\$10.00	0%
	Energy Charge	\$0.10/kWh	\$0.10/kWh	0%
	Transmission & Distribution Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Delivery Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%

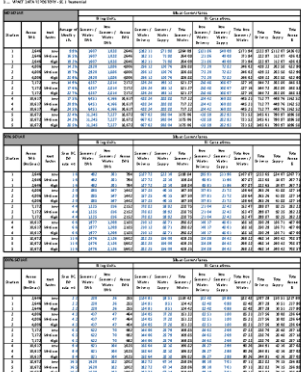
Pages 8 – 13

Bill Impact
Summary
Charts: \$ and %
change in
annual bills



Pages 2 - 7

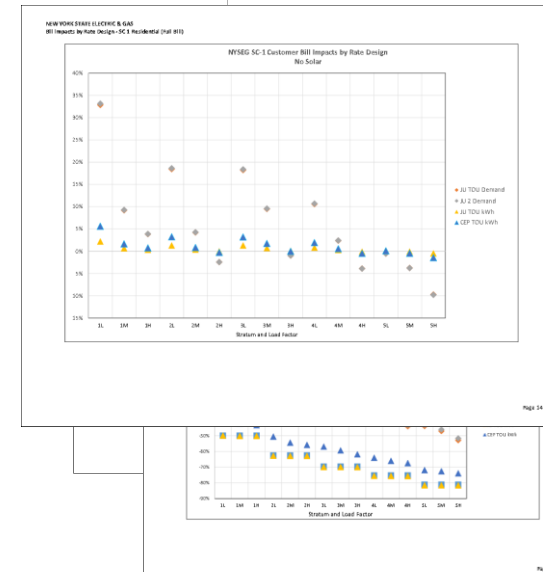
Data Repository:
Bill calculations
and Billing
determinants



Category	Item	Current Rate	Proposed Rate	% Change
Electricity	Basic Service Charge	\$10.00	\$10.00	0%
	Energy Charge	\$0.10/kWh	\$0.10/kWh	0%
	Transmission & Distribution Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electric Delivery Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Electricity Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
Gas	Basic Service Charge	\$10.00	\$10.00	0%
	Energy Charge	\$0.10/kWh	\$0.10/kWh	0%
	Transmission & Distribution Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Delivery Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%
	Gas Supply Charge	\$0.05/kWh	\$0.05/kWh	0%

Pages 14 – 19

JU Bill Impact
comparisons



September 28 Bill Impact Filings – Bill Impact Summary

Page 1 - BILL IMPACT SUMMARY

- Page 1 shows the \$ and % change in monthly bills for each bill impact customer.

- The “base” monthly bill for a bill impact customer is calculated as the annual bill for that customer at current rates and the load profile for that customer with no solar production (“Traditional Customer”).
- The “Proposed” monthly bills for a bill impact customer are calculated as the monthly bills for that customer at current rates and each of the six proposed rate designs with:
 - No solar production;
 - Solar production at 70% of the base annual kWh usage for that customer; and
 - Solar production at 100% of the base annual kWh usage for that customer.

NEW YORK STATE ELECTRIC & GAS
BILL IMPACT SUMMARY BY DC System/Rate

DC System	Rate	Avg kWh/mo	Total Annual \$ at Current Rates	No Solar		70% Solar		100% Solar	
				Avg Monthly \$	% Change	Avg Monthly \$	% Change	Avg Monthly \$	% Change
1	res	8,664	\$435.00	\$435.00	0.0%	\$435.00	0.0%	\$435.00	0.0%
	res	8,664	\$435.00	\$435.00	0.0%	\$435.00	0.0%	\$435.00	0.0%
	res	8,664	\$435.00	\$435.00	0.0%	\$435.00	0.0%	\$435.00	0.0%
	res	8,664	\$435.00	\$435.00	0.0%	\$435.00	0.0%	\$435.00	0.0%
	res	8,664	\$435.00	\$435.00	0.0%	\$435.00	0.0%	\$435.00	0.0%
	res	8,664	\$435.00	\$435.00	0.0%	\$435.00	0.0%	\$435.00	0.0%
2	res	10,270	\$513.50	\$513.50	0.0%	\$513.50	0.0%	\$513.50	0.0%
	res	10,270	\$513.50	\$513.50	0.0%	\$513.50	0.0%	\$513.50	0.0%
	res	10,270	\$513.50	\$513.50	0.0%	\$513.50	0.0%	\$513.50	0.0%
	res	10,270	\$513.50	\$513.50	0.0%	\$513.50	0.0%	\$513.50	0.0%
	res	10,270	\$513.50	\$513.50	0.0%	\$513.50	0.0%	\$513.50	0.0%
	res	10,270	\$513.50	\$513.50	0.0%	\$513.50	0.0%	\$513.50	0.0%
3	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
4	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
5	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
6	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%
	res	10,074	\$503.70	\$503.70	0.0%	\$503.70	0.0%	\$503.70	0.0%

Bill Impact customer info

Bill Impact results

September 28 Bill Impact Filings – Data Repository

[illegible]

No
solar

70%
solar

100%
solar

Billing determinants

Bill subtotals / totals

Page 2

Page:

[illegible]

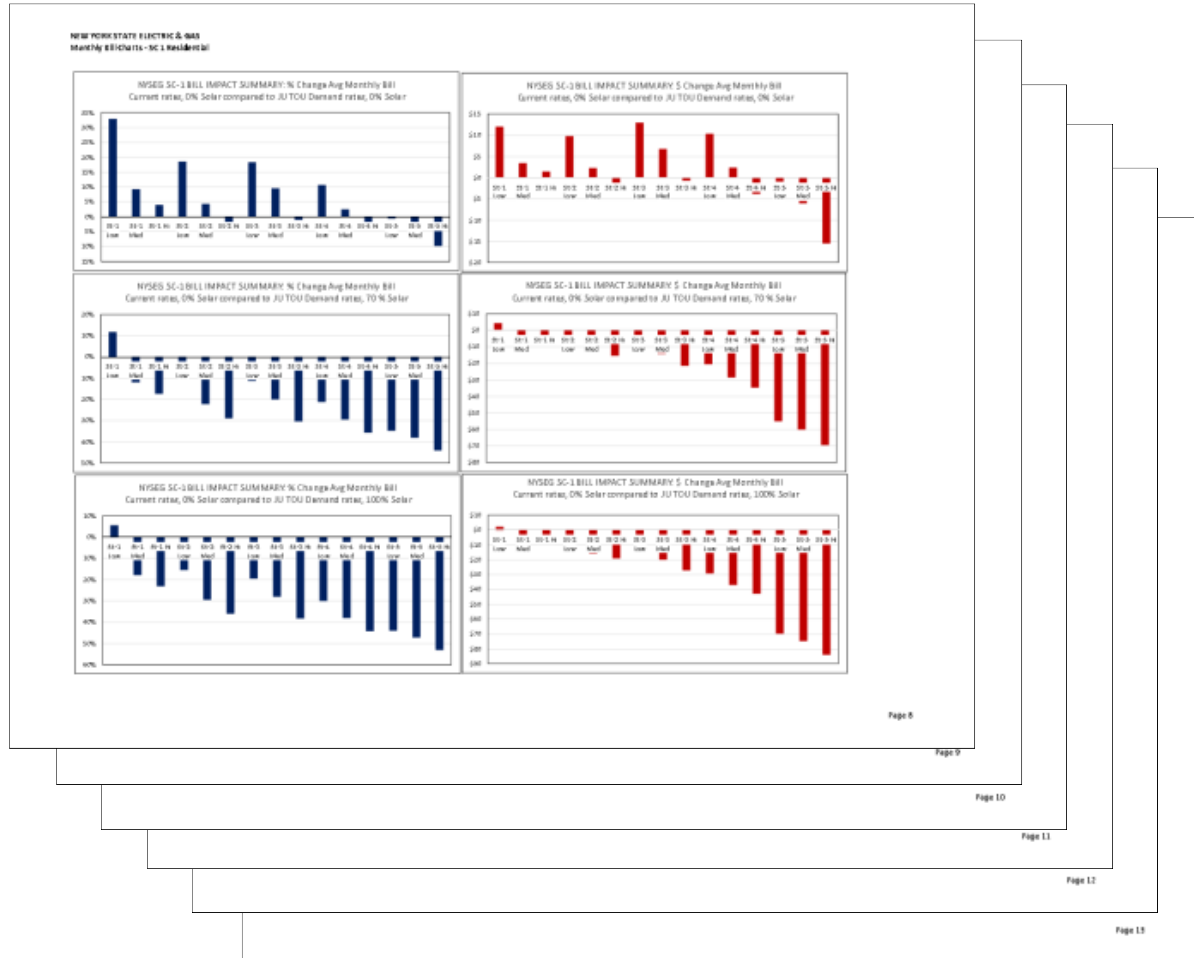
Name _____

Page 7

Pages 2 - 7 BILL IMPACT DATA REPOSITORY

- The Bill Impact Data Repository was designed to provide bill totals and subtotals plus billing determinant totals and subtotals that Stakeholders can use to develop their own bill impact analyses.
- Pages 2 through 7 show the bill totals and billing determinants for each bill impact customer, specific to the current rates (page 2) and to each of the alternative rate designs (pages 3 – 7) for the no solar, 70% solar and 100% solar scenarios.
- For each rate design, billing determinants and bill totals are provided with relevant detailed subtotals: by season, and TOU period; Bill total detail is also provided for delivery and supply.

September 28 Bill Impact Filings – Monthly Bill Charts



Pages 8 - 13 MONTHLY BILL CHARTS

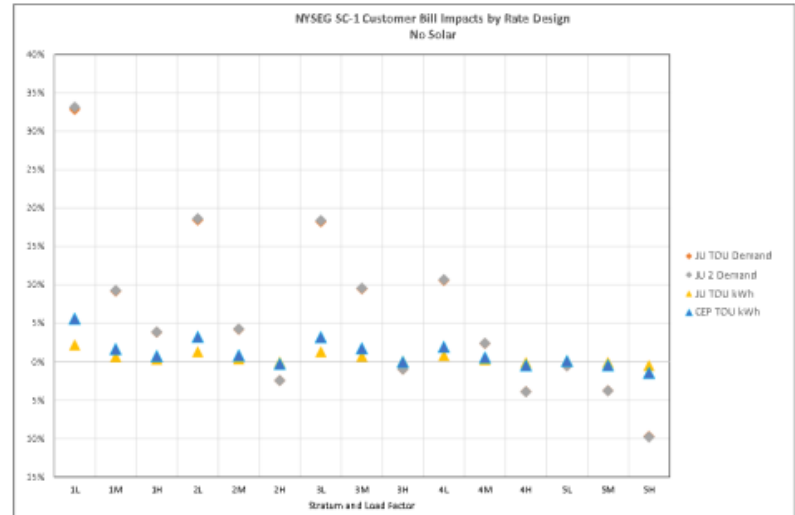
- The Monthly Bill Charts use the results of the Bill Impact Summary (page 1) to illustrate monthly bill impacts in a format that provides for comparisons of:
 - The impact of each rate design on customers by stratum and load factor.
 - Impacts are provided:
 - On a percentage basis;
 - On a dollars per month basis; and
 - For non-solar and solar scenarios.

September 28 Bill Impact Filings – Bill Impacts by Rate Design

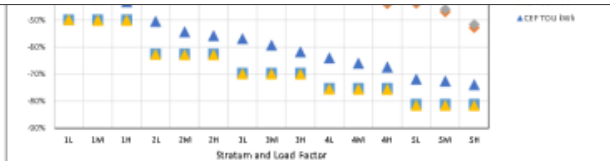
Pages 14 - 19 BILL IMPACTS by RATE DESIGN

- These charts provide bill impact summaries with all impacts included in one chart each for the no solar, 70% solar and 100% solar scenarios.
- Charts for the solar scenarios include percentage impacts as well as impacts expressed as dollars per kW of solar installed.
- Total bill impacts are provided in Pages 14 – 16, and delivery only bill impacts are provided in Pages 17 – 19.

NEW YORK STATE ELECTRIC & GAS
Bill Impacts by Rate Design - SC-1 Residential (Full Bill)



Page 14



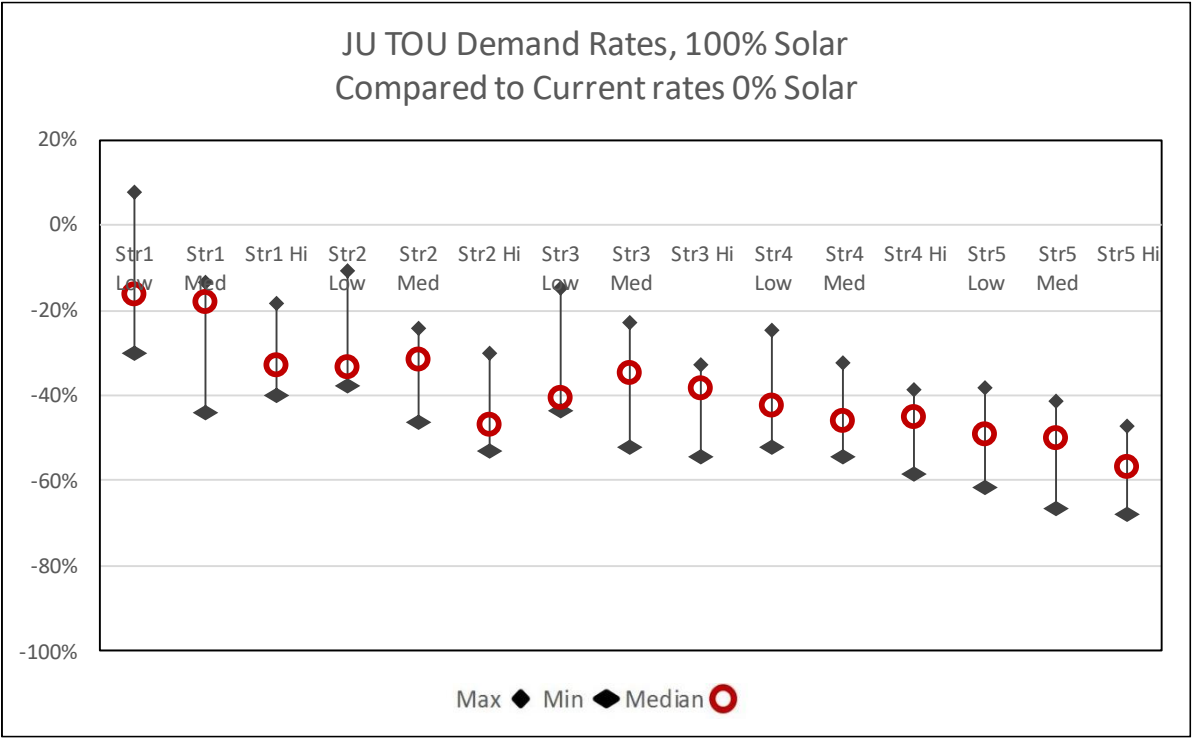
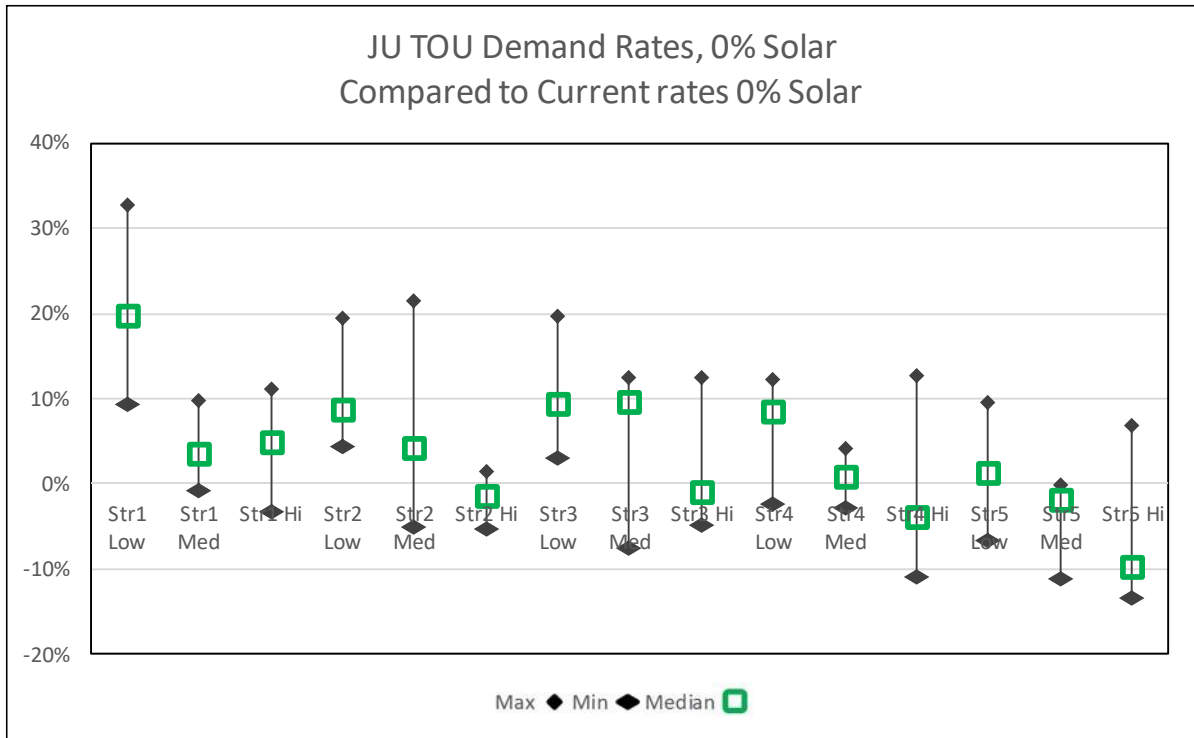
Page 15

Page 18

Residential Bill Impact Comparisons

JU TOU Demand Rates

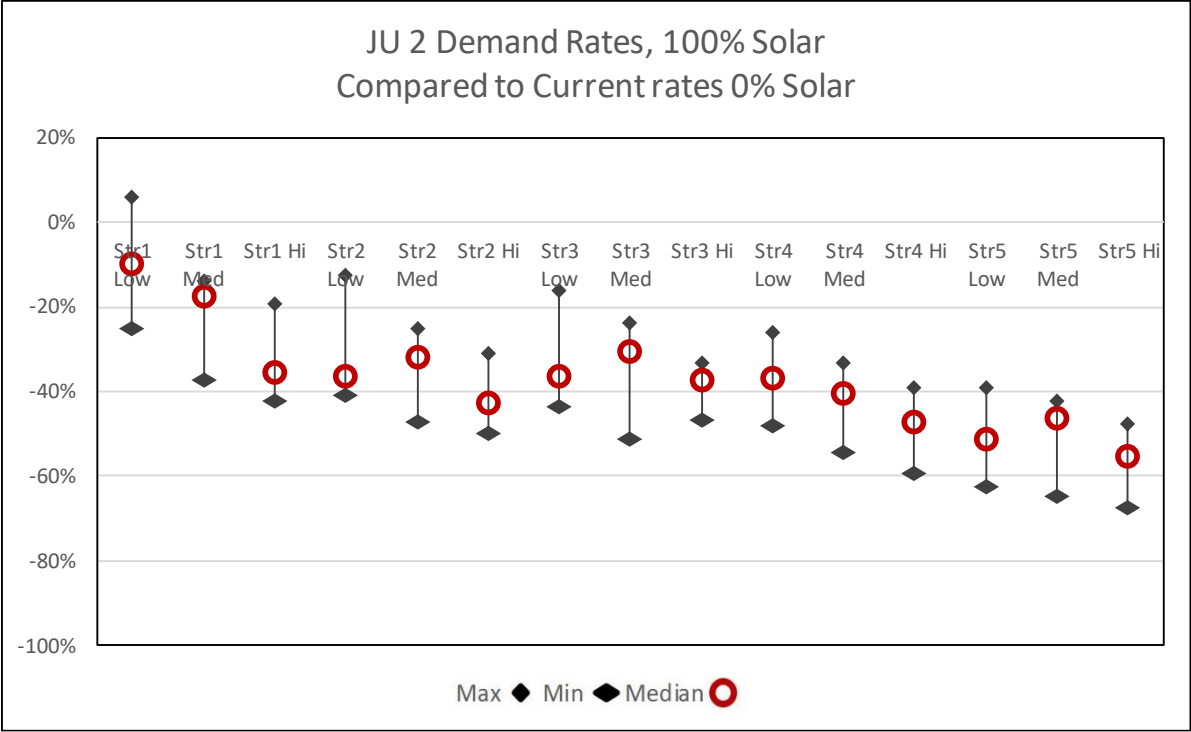
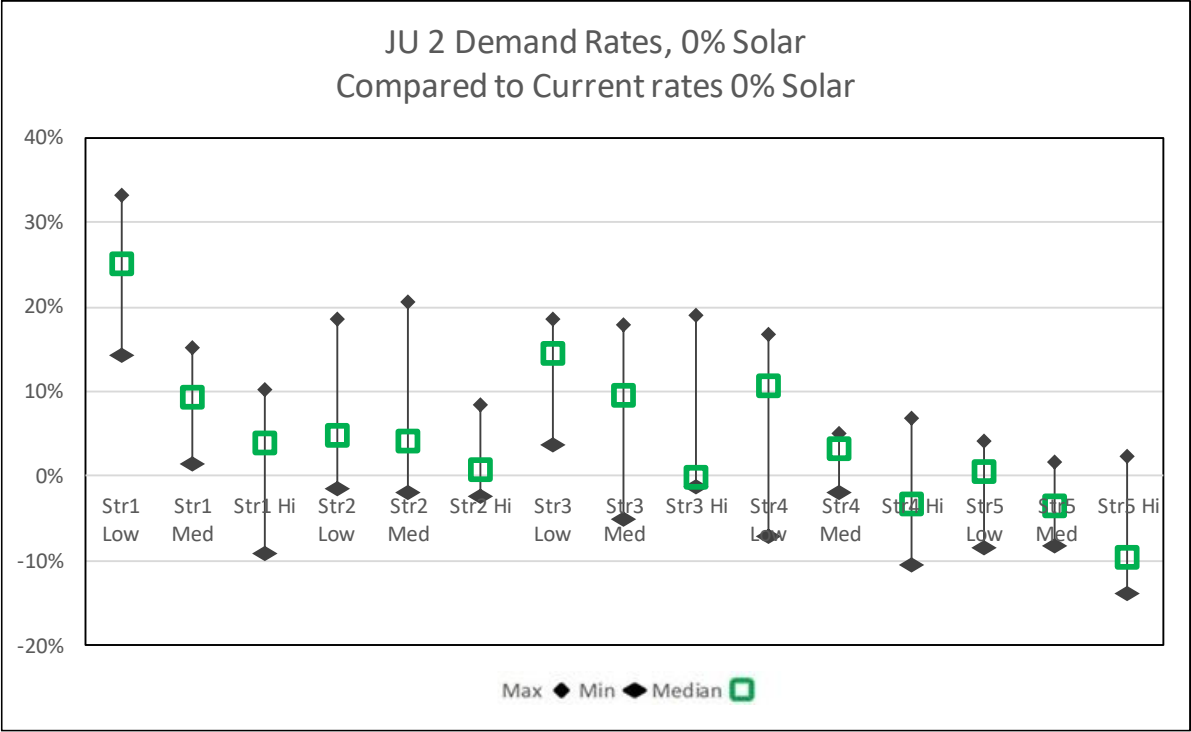
The charts below and on Slides 15 – 17 provide summary statistics based on residential customer bill impacts for Con Edison, National Grid, NYSEG, Orange and Rockland, and RG&E.



Note: Because Central Hudson's end-use based stratum bill impacts are not comparable to the size-based stratum bill impacts of the other Joint Utilities, Central Hudson's bill impacts are not included in the charts on this slide. See Slide 4 for further detail.

Residential Bill Impact Comparisons (Continued)

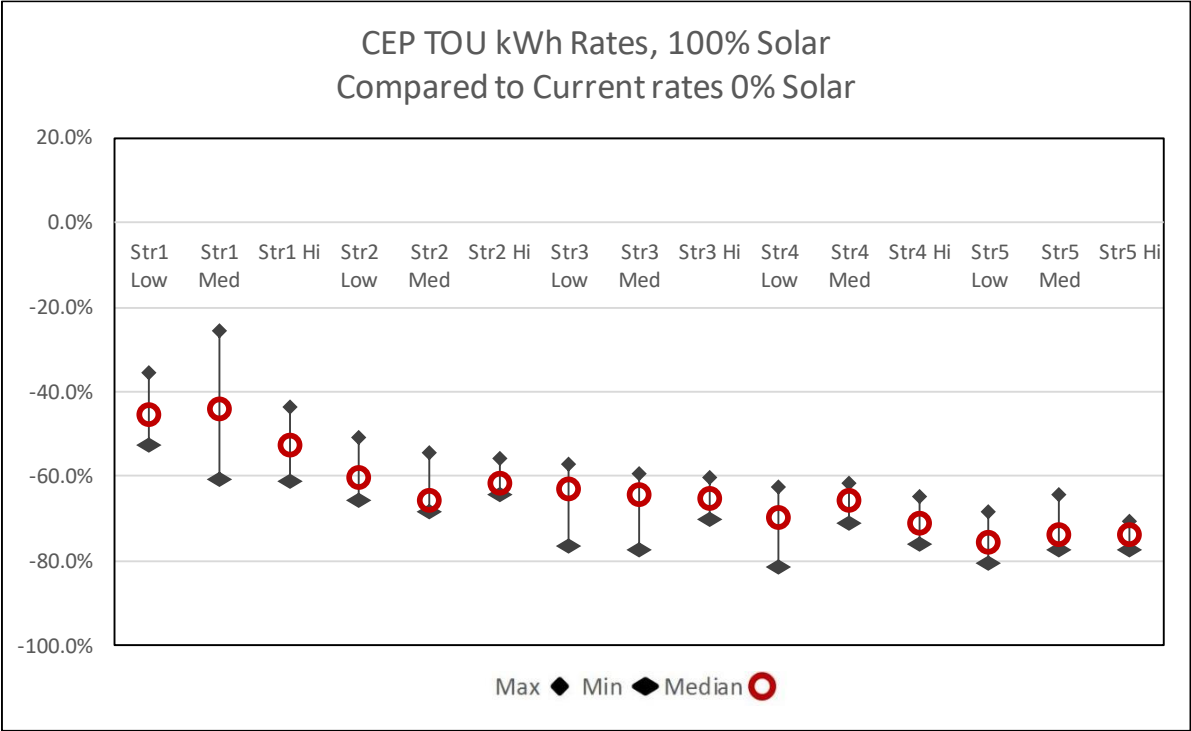
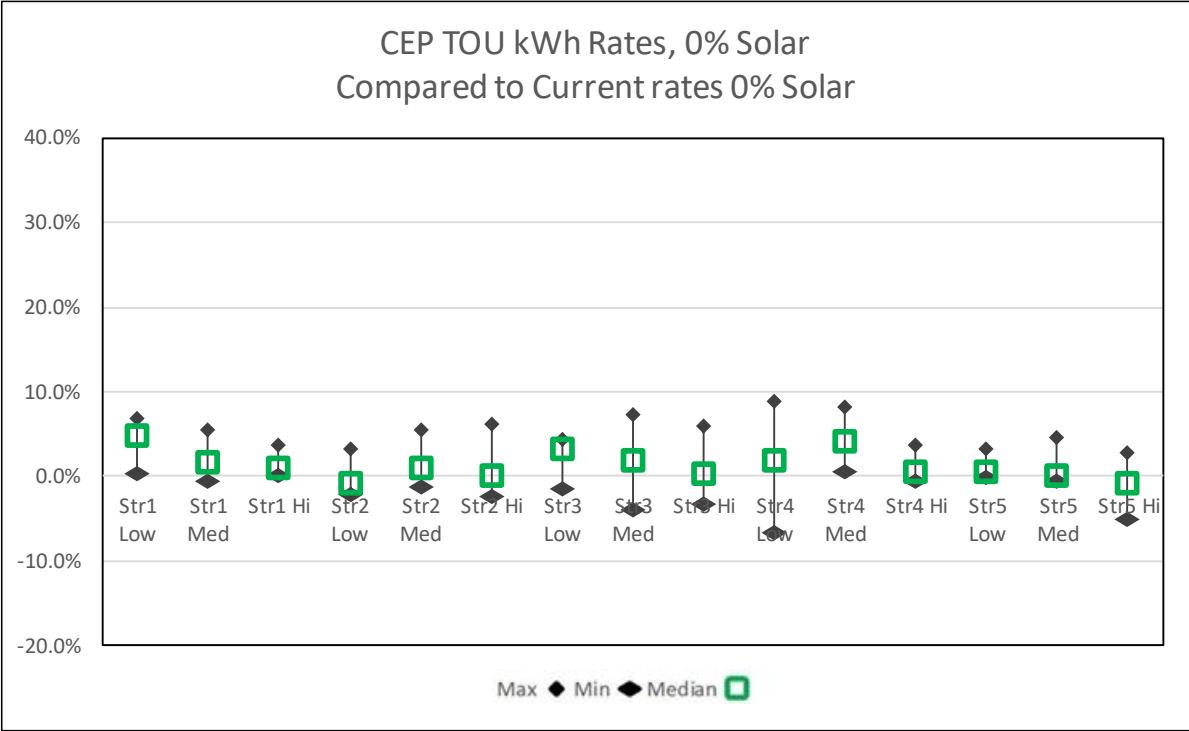
JU 2 Demand Rates



Note: Because Central Hudson’s end-use based stratum bill impacts are not comparable to the size-based stratum bill impacts of the other Joint Utilities, Central Hudson’s bill impacts are not included in the charts on this slide. See Slide 4 for further detail.

Residential Bill Impact Comparisons (Continued)

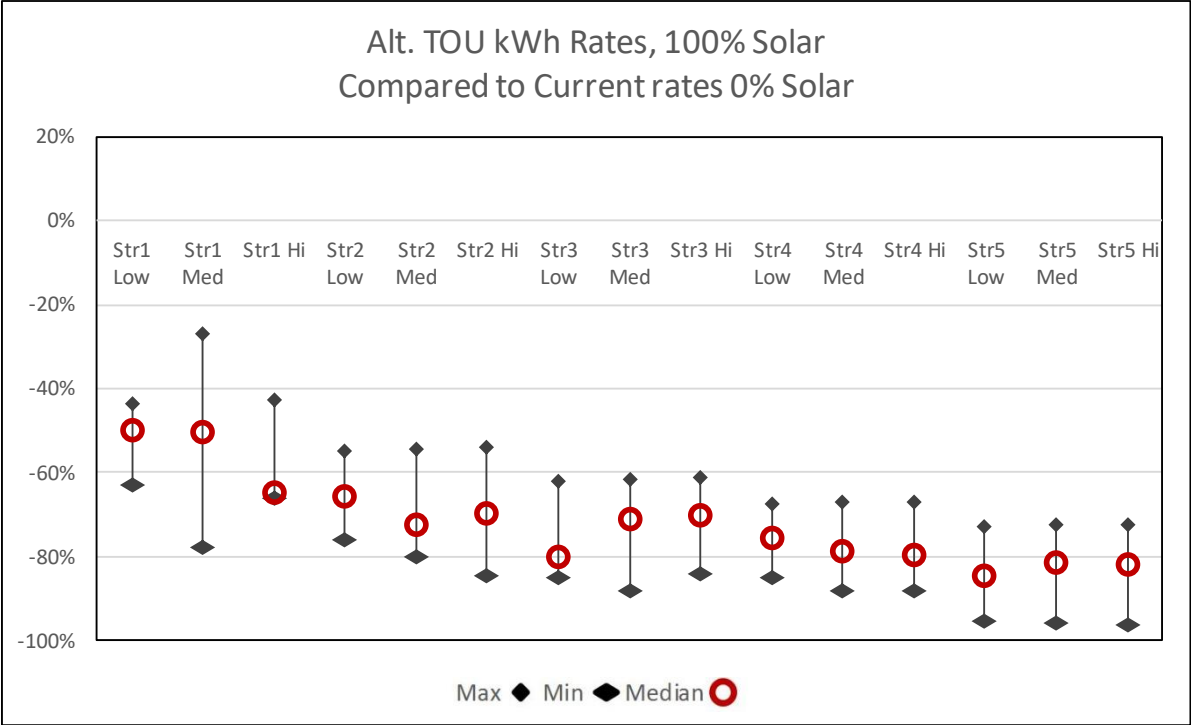
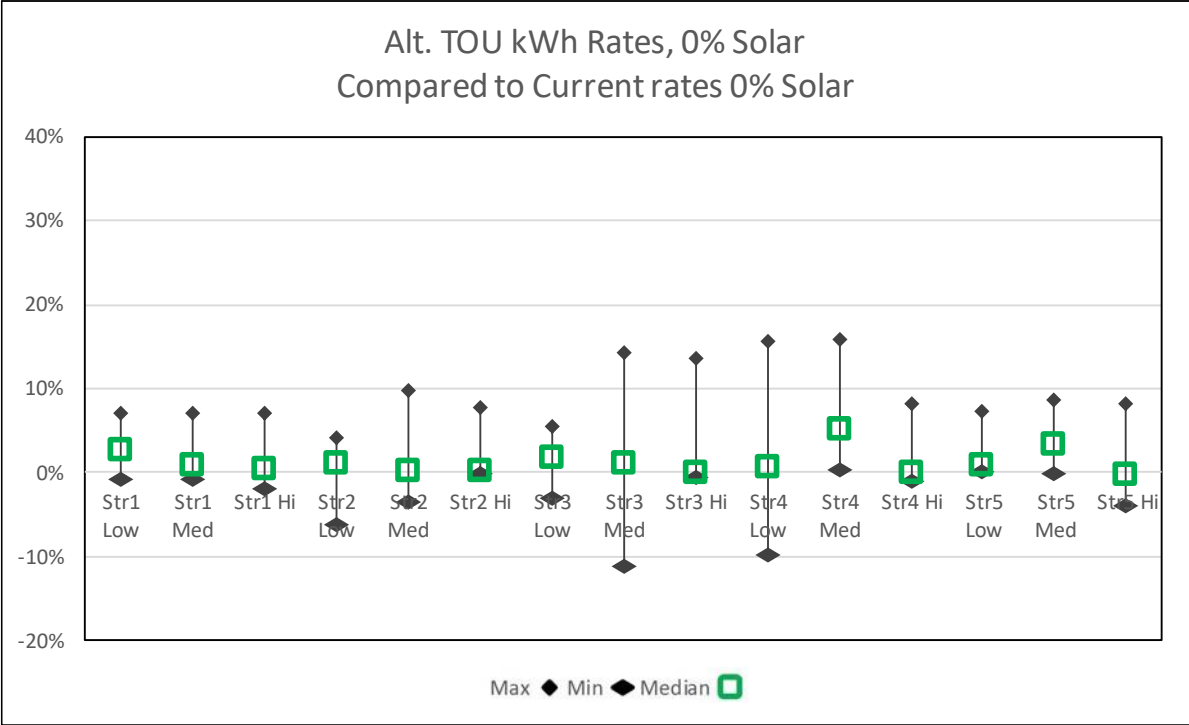
CEP TOU kWh Rates



Note: Because Central Hudson’s end-use based stratum bill impacts are not comparable to the size-based stratum bill impacts of the other Joint Utilities, Central Hudson’s bill impacts are not included in the charts on this slide. See Slide 4 for further detail.

Residential Bill Impact Comparisons (Continued)

Alternative TOU kWh Rates



Note: Because Central Hudson’s end-use based stratum bill impacts are not comparable to the size-based stratum bill impacts of the other Joint Utilities, Central Hudson’s bill impacts are not included in the charts on this slide. See Slide 4 for further detail.

Questions and Next Steps

- Questions from Rate Design Working Group
- Next Steps