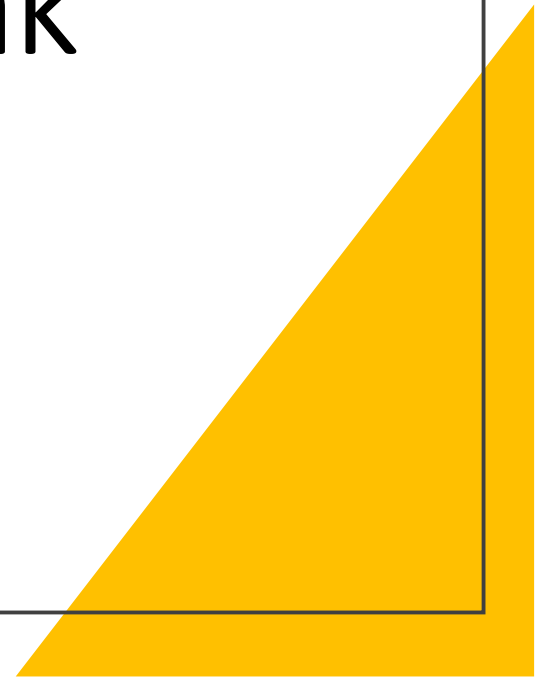


# Customer Impacts of 6 & 4 Hour Peak Scenarios

LBAC Meeting

April 7, 2021



# Question: How do current rate impact projections compare to previous ones?

## BL TOU Rate Evolution

Season	Hours	Current FLAT Rate (\$/kWh)	Summer Peaker [Oct 2020] (\$/kWh)	Current UFS Scen 1 [Wk&Hol Inc] (\$/kWh)*	Current UFS Scen 2 [Wk&Hol Exc.] (\$/kWh)*
Summer On-Peak	Jun-Sept [1 – 7 pm]	\$0.193	\$0.494	\$0.457	\$0.587
Summer Off-Peak	Jun-Sept [7 – 1 pm]		\$0.137	\$0.133	\$0.136
Winter On-Peak	Oct-May [4 – 8 pm]			\$0.299	\$0.363
Winter Off-Peak	Oct-May [8 – 4 pm]		\$0.138	\$0.142	

\*Rounded to nearest thousandth

## BL TOU Impact Projection History

(% Change in Annual Bill for Customer Class **with no behavior change**)

Rate	Model	Rate A	LI	EV *	HP	WHHP	PV**	PV & ** EV
Summer Peaker [Oct 2020]	TOU Compare	+0.7%	-1.3%	-5.1%	-3.5%	-7.3%	-8.8%	-11.1%
UFS 1 W & H Included [Mar 2021]	UFS	0.0%	N/A	-7%	-4%	N/A	-5%	N/A
	TOU Compare	0.0%	-2.0%	-4.6%	-3.3%	-6.2%	-12.7%	-15.7%
UFS 2 W & H Excluded [Mar 2021]	UFS	0.0%	N/A	-7%	-3%	N/A	-4%	N/A
	TOU Compare	0.0%	-2.0%	-4.9%	-3.2%	-5.9%	-12.9%	-16.2%

*\*Variance in results for EV group between two models due to different underlying datasets. Customers in UFS dataset had higher average usage.*

*\*\*UFS PV results are for consumption only– no buyback. Compare Model – Results for PV Buyback Included: Assumes Buyback Rate = TOU Rate – Distribution.*

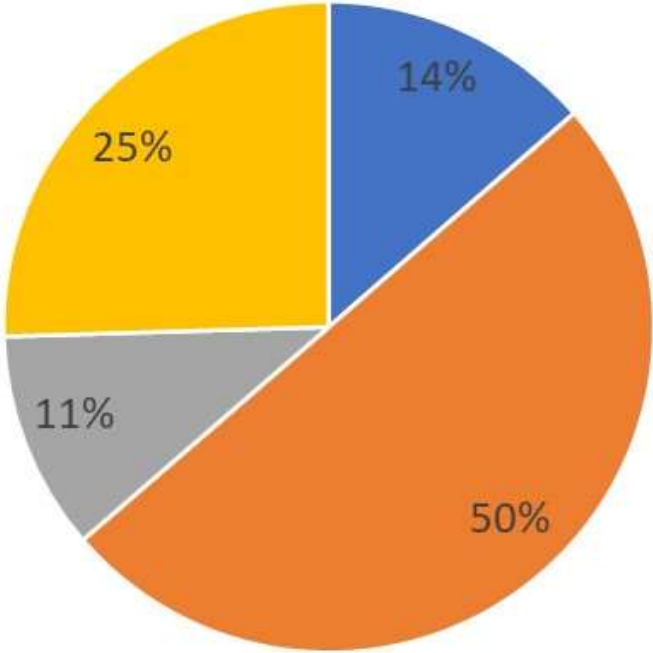
# Bill Changes With Load Shifting

Scenario 1- Weekends & Holidays Included

A yellow triangular graphic is located in the bottom right corner of the slide, pointing towards the top left.

# Rate A: Load Profile

Scenario 1 - Peak Includes Weekends & Holidays  
Load vs. Peak/Off-Peak



■ Winter On-Peak   ■ Winter Off-Peak   ■ Summer On-Peak   ■ Summer Off-Peak

# Rate A: Load Shifting

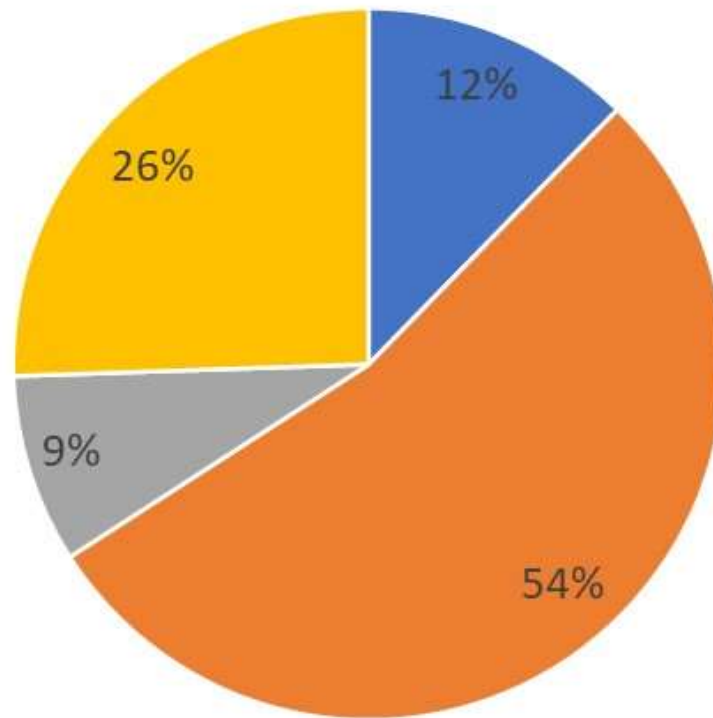
**Bill Reduction With Load Shifting: Scenario 1A - Peak Includes Weekends & Holidays**

*Summer Load Shift*

		0%	20%	40%	60%	80%	100%
Winter Load Shift	0%	\$0 (0%)	-\$45 (-3%)	-\$90 (-7%)	-\$135 (-10%)	-\$179 (-13%)	-\$224 (-17%)
	20%	-\$28 (-2%)	-\$73 (-5%)	-\$118 (-9%)	-\$163 (-12%)	-\$207 (-15%)	-\$252 (-19%)
	40%	-\$56 (-4%)	-\$101 (-7%)	-\$146 (-11%)	-\$190 (-14%)	-\$235 (-17%)	-\$280 (-21%)
	60%	-\$84 (-6%)	-\$129 (-10%)	-\$173 (-13%)	-\$218 (-16%)	-\$263 (-19%)	-\$308 (-23%)
	80%	-\$112 (-8%)	-\$157 (-12%)	-\$201 (-15%)	-\$246 (-18%)	-\$291 (-21%)	-\$336 (-25%)
	100%	-\$140 (-10%)	-\$184 (-14%)	-\$229 (-17%)	-\$274 (-20%)	-\$319 (-24%)	-\$363 (-27%)

# EV: Load Profile

Scenario 1 - Peak Includes Weekends & Holidays  
Load vs. Peak/Off-Peak



■ Winter On-Peak ■ Winter Off-Peak ■ Summer On-Peak ■ Summer Off-Peak

# EV: Load Shifting

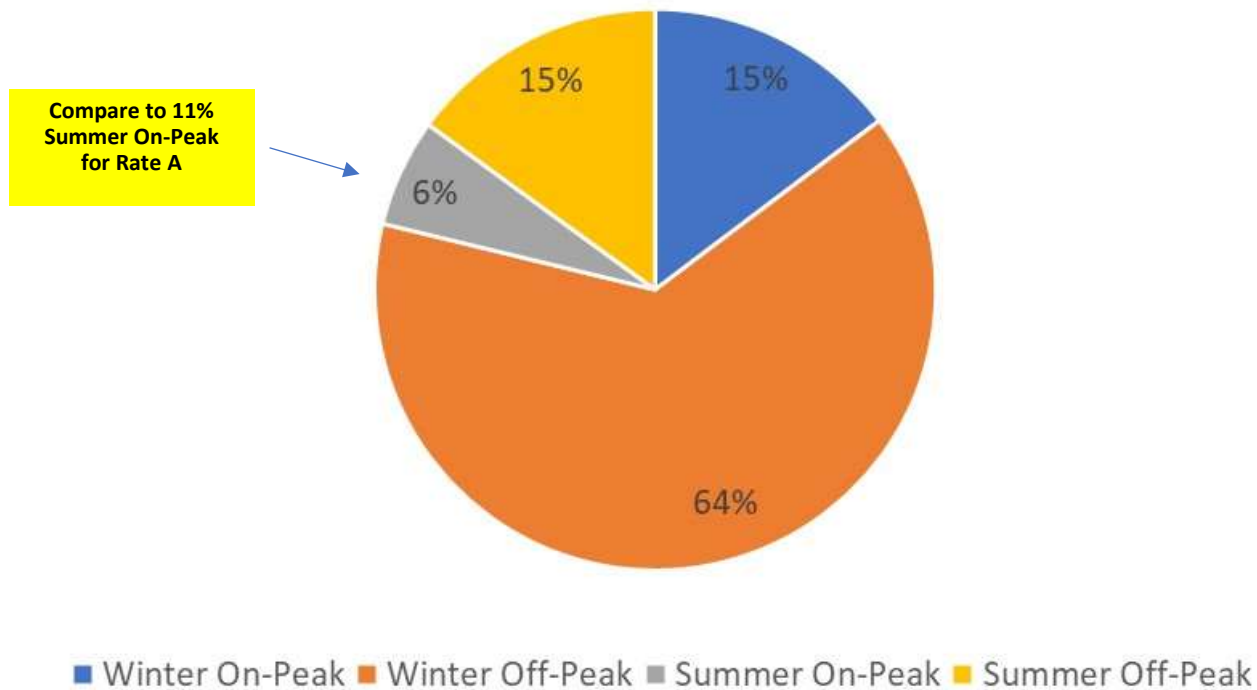
## Bill Reduction With Load Shifting: Scenario 1A - Peak Includes Weekends & Holidays

### Summer Load Shift

		0%	20%	40%	60%	80%	100%
Winter Load Shift	0%	-\$89 (-5%)	-\$142 (-7%)	-\$194 (-10%)	-\$247 (-13%)	-\$299 (-15%)	-\$352 (-18%)
	20%	-\$127 (-7%)	-\$180 (-9%)	-\$232 (-12%)	-\$285 (-15%)	-\$337 (-17%)	-\$390 (-20%)
	40%	-\$165 (-8%)	-\$217 (-11%)	-\$270 (-14%)	-\$322 (-17%)	-\$375 (-19%)	-\$427 (-22%)
	60%	-\$202 (-10%)	-\$255 (-13%)	-\$307 (-16%)	-\$360 (-18%)	-\$412 (-21%)	-\$465 (-24%)
	80%	-\$240 (-12%)	-\$292 (-15%)	-\$345 (-18%)	-\$397 (-20%)	-\$450 (-23%)	-\$502 (-26%)
	100%	-\$277 (-14%)	-\$330 (-17%)	-\$382 (-20%)	-\$435 (-22%)	-\$487 (-25%)	-\$540 (-28%)

# Whole Home Heat Pump (WHHP): Load Profile

Scenario 1 - Peak Includes Weekends & Holidays  
Load vs. Peak/Off-Peak



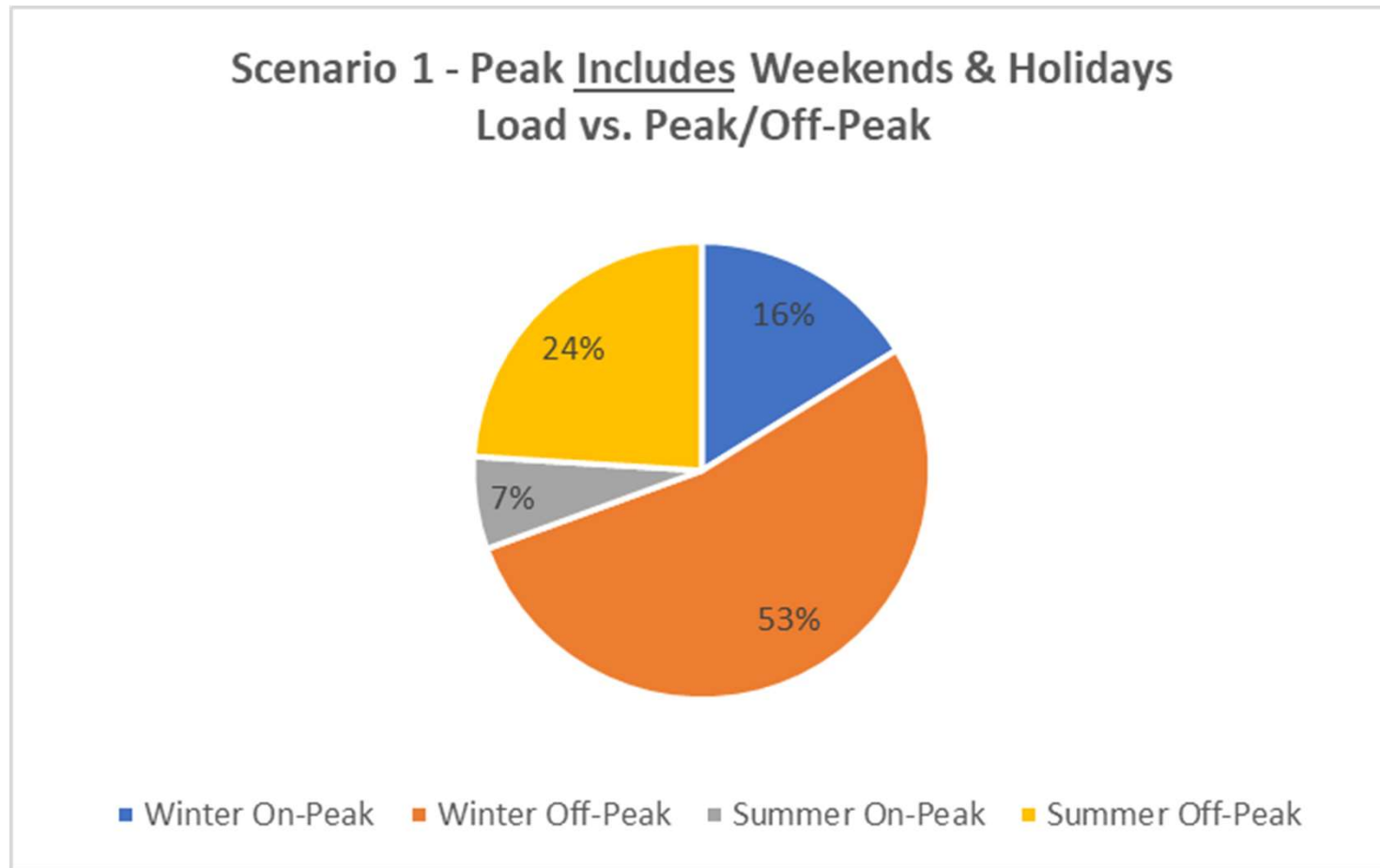
# WHHP: Load Shifting

## Bill Reduction With Load Shifting: Scenario 1A - Peak Includes Weekends & Holidays

### Summer Load Shift

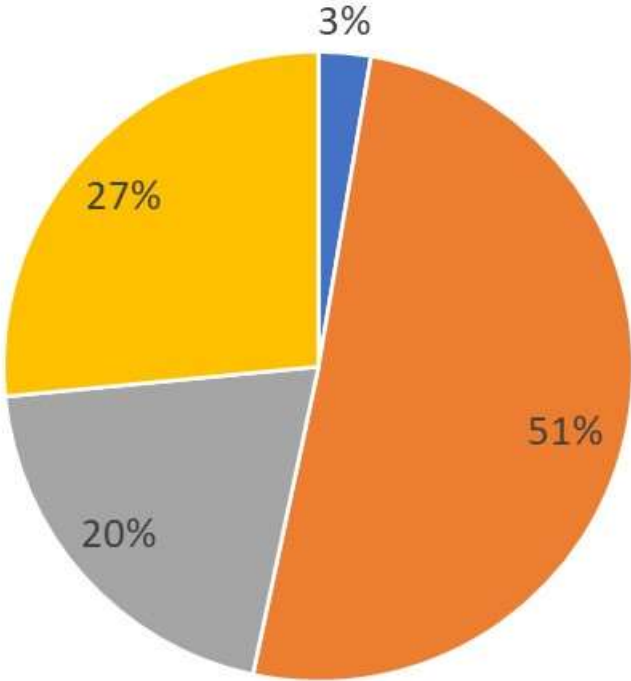
		0%	20%	40%	60%	80%	100%
Winter Load Shift	0%	-\$198 (-6%)	-\$262 (-8%)	-\$326 (-10%)	-\$389 (-12%)	-\$453 (-14%)	-\$517 (-16%)
	20%	-\$273 (-9%)	-\$337 (-11%)	-\$401 (-13%)	-\$464 (-15%)	-\$528 (-17%)	-\$592 (-19%)
	40%	-\$348 (-11%)	-\$412 (-13%)	-\$476 (-15%)	-\$539 (-17%)	-\$603 (-19%)	-\$667 (-21%)
	60%	-\$423 (-13%)	-\$487 (-15%)	-\$551 (-17%)	-\$614 (-19%)	-\$678 (-21%)	-\$742 (-23%)
	80%	-\$498 (-16%)	-\$562 (-18%)	-\$625 (-20%)	-\$689 (-22%)	-\$753 (-24%)	-\$816 (-26%)
	100%	-\$573 (-18%)	-\$637 (-20%)	-\$700 (-22%)	-\$764 (-24%)	-\$828 (-26%)	-\$891 (-28%)

# PV: Load Profile - Consumption Only



# PV: Load Profile – Buyback Only

Scenario 1 - Peak Includes Weekends & Holidays  
BuyBack(kWh) vs. Peak/Off-Peak



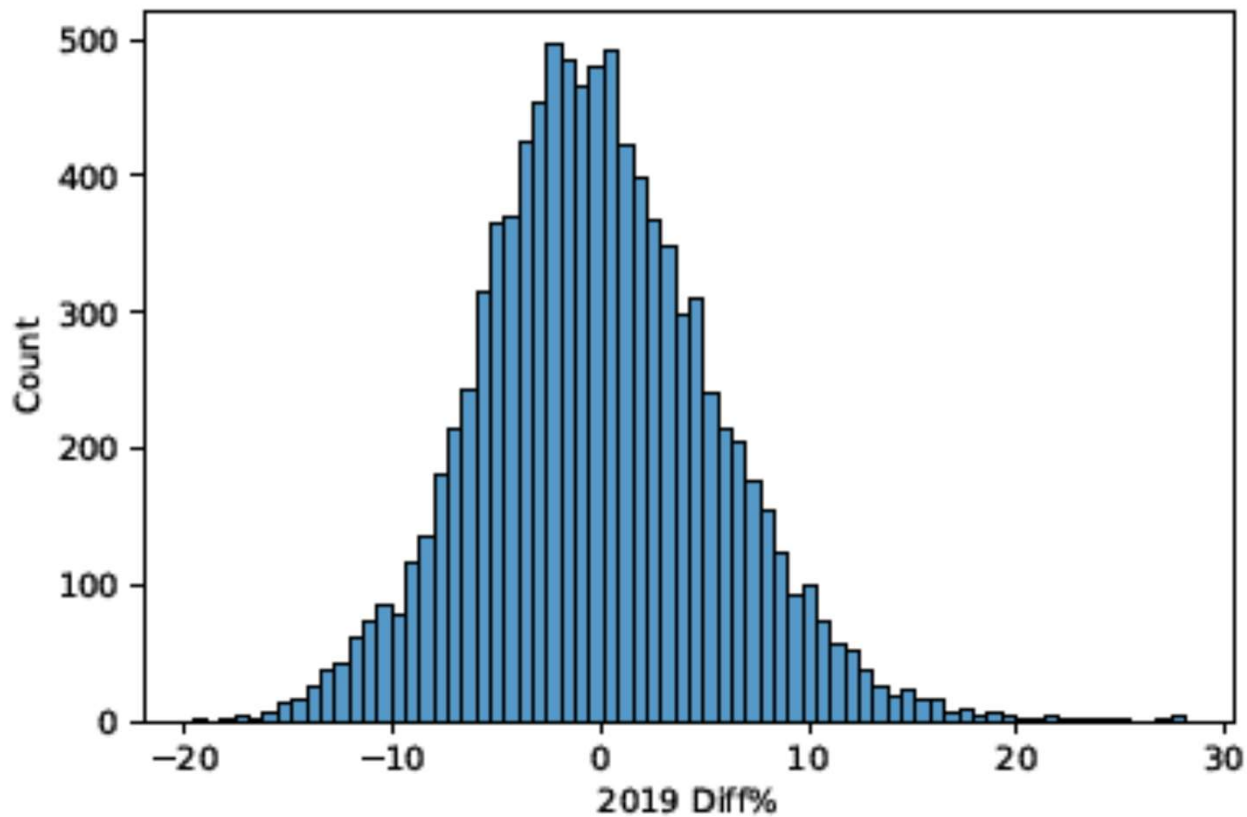
■ Winter On-Peak ■ Winter Off-Peak ■ Summer On-Peak ■ Summer Off-Peak

# PV: Load Shifting – Consumption & Buyback

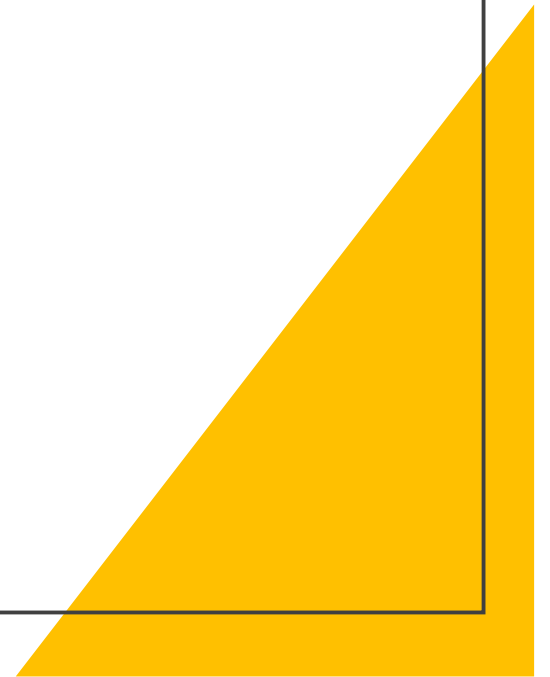
**Bill Reduction With Load Shifting: Scenario 1A - Peak Includes Weekends & Holidays**

		<i>Summer Load Shift</i>					
		0%	20%	40%	60%	80%	100%
<i>Winter Load Shift</i>	0%	-\$127 (-9%)	-\$203 (-14%)	-\$278 (-20%)	-\$354 (-25%)	-\$430 (-31%)	-\$506 (-36%)
	20%	-\$164 (-12%)	-\$240 (-17%)	-\$316 (-23%)	-\$392 (-28%)	-\$468 (-33%)	-\$544 (-39%)
	40%	-\$202 (-14%)	-\$278 (-20%)	-\$354 (-25%)	-\$429 (-31%)	-\$505 (-36%)	-\$581 (-42%)
	60%	-\$239 (-17%)	-\$315 (-23%)	-\$391 (-28%)	-\$467 (-33%)	-\$543 (-39%)	-\$619 (-44%)
	80%	-\$277 (-20%)	-\$353 (-25%)	-\$429 (-31%)	-\$505 (-36%)	-\$580 (-41%)	-\$656 (-47%)
	100%	-\$315 (-22%)	-\$390 (-28%)	-\$466 (-33%)	-\$542 (-39%)	-\$618 (-44%)	-\$694 (-50%)

# Hypothetical Mandatory TOU (UFS Scen. 1) Impact On Rate A Customers *No Load Shifting / Customer Change*



# Solar BuyBack Scenarios



# Buyback Scenario Comparisons

<u>Results</u>		
<b>System-Wide Buyback</b>		
2019 kWh	1,177,416	
		<b>\$ Change from Rate EFR</b>
<b>Belmont Light Spending</b>		
Current Rate EFR	\$129,516	-
UFS 1A - Peak Inc Wk/H, Gen & Tx Credited	\$150,366	\$20,850
UFS 1B - Peak Does Not Inc Wk/H, Gen & Tx Credited	\$147,227	\$17,711
UFS 2A- Peak Inc Wk/H, Gen & EFR Adder Credited	\$146,558	\$17,043
UFS 2A- Peak Does Not Inc Wk/H, Gen & EFR Adder Credited	\$144,555	\$15,039

## Next Steps: Calculator Tool

- For customers interested in pilot, the impact of switching to the TOU rate (based on their 2019 or 2020 load profile) can be provided
- Concept similar to how taxpayers can look up the impact to their tax bill from the proposed override
- In March, calculated rate impact for each Rate A Customer (about 10,000)
  - Using their hourly load profiles for 2019 and 2020
  - Used Python – too big for Excel
  - Cross checked against TOU Compare
- Next:
  - update to link to customer categories (PV, EV, etc) and clean up data
  - Find software to query database and present results. Reaching out to other MLPs on this. Ideas welcome