



Town of Lyons Project Update June 7, 2023

Tierra Resource Consultants, Industry-leading management consultants

Project Refresher

Task 1: Economic
Opportunity

Task 3: Lyons BESS
Potential

Task 2: TOU Evaluation

Progress To Date

Task 1

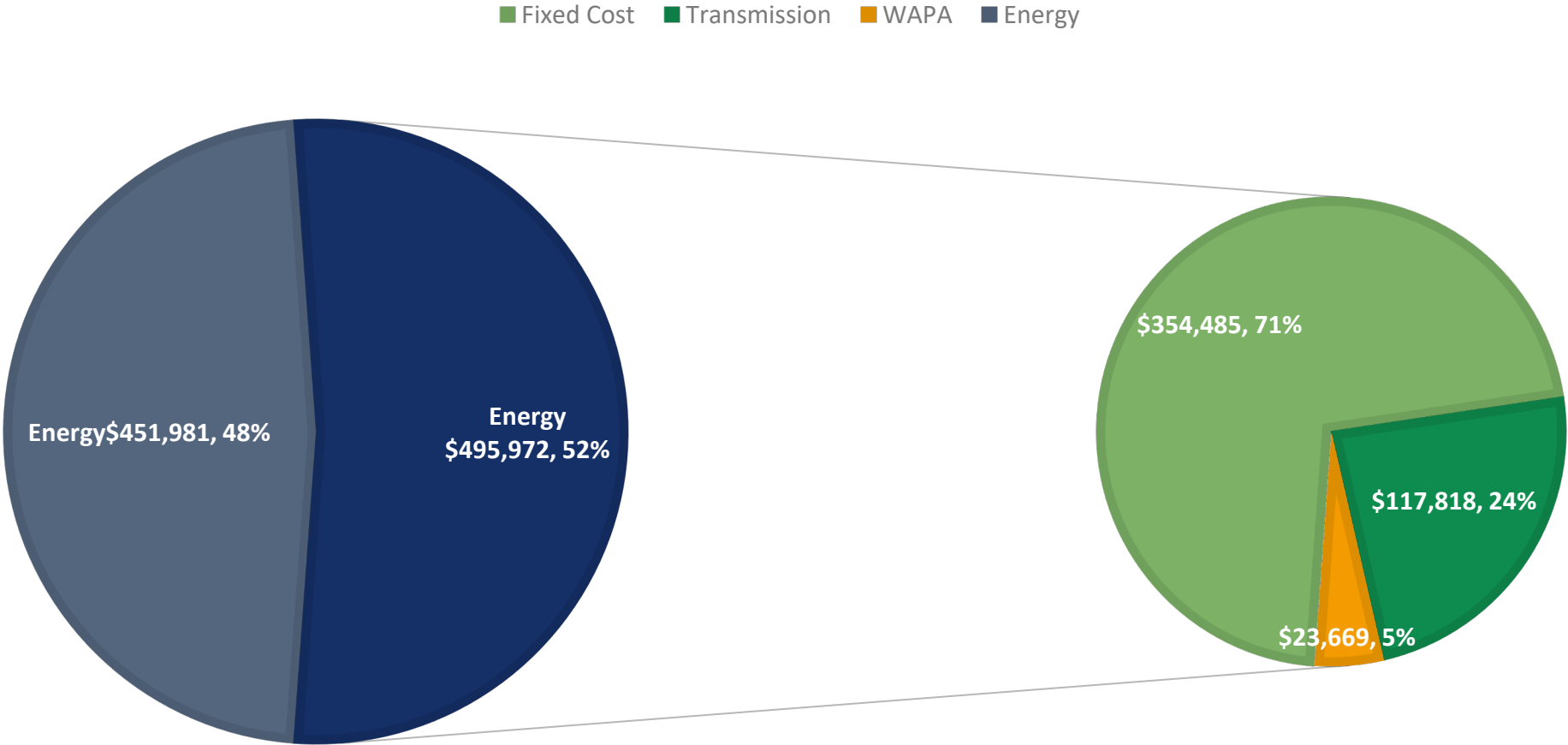
- Data Collection
 - Discussions with MEAN
- Data Review/Interpretation/Iteration
 - Demand and Economic Modelling

Task 2

- Time of Use program examination
- Time of Use efficacy literature review
- Initial Time of Use period straw proposal(s) for Lyons

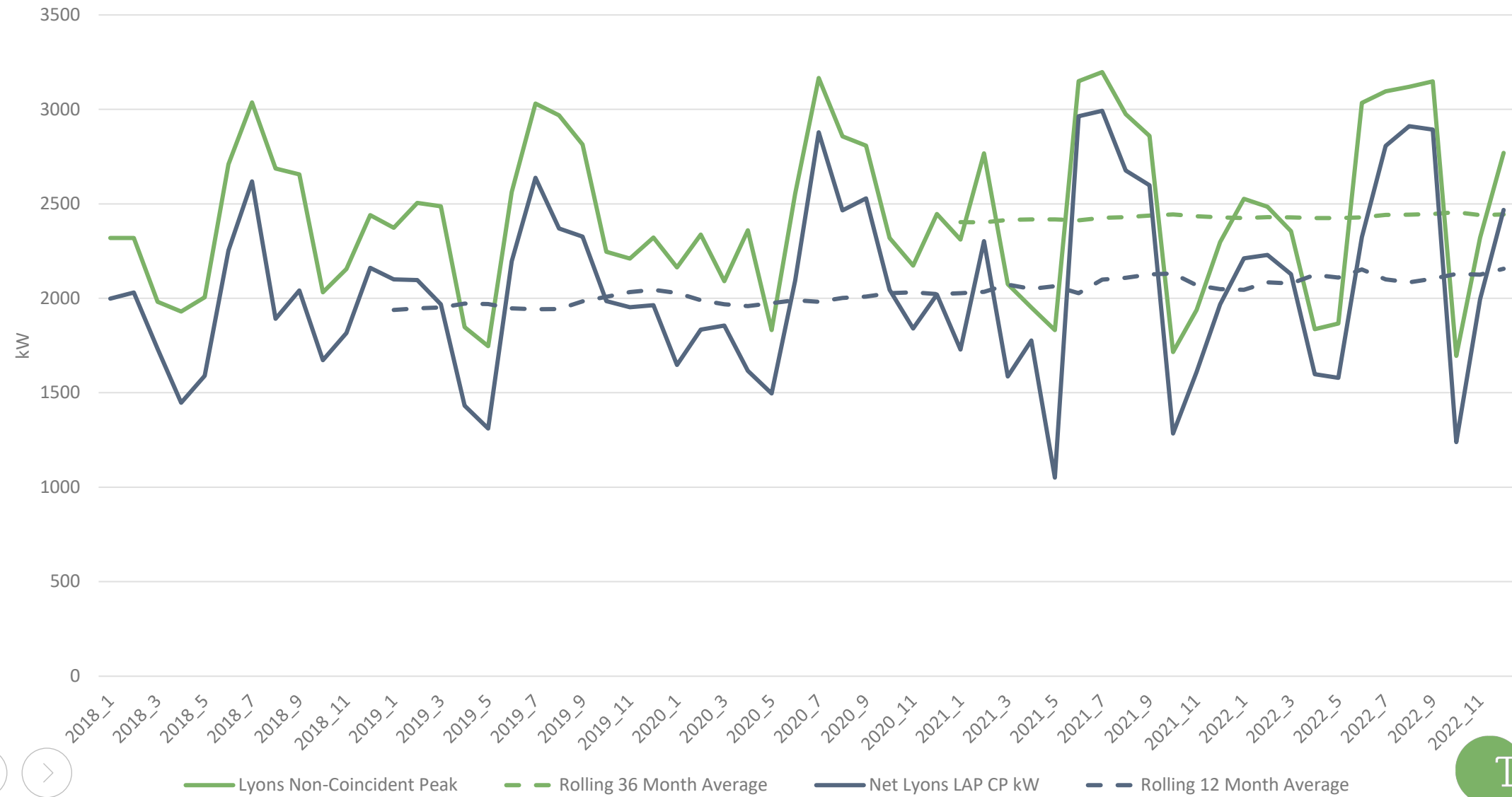
Demand and Economic Modelling

TOWN OF LYONS ENERGY COST BREAKDOWN - 2021



Demand and Economic Modelling

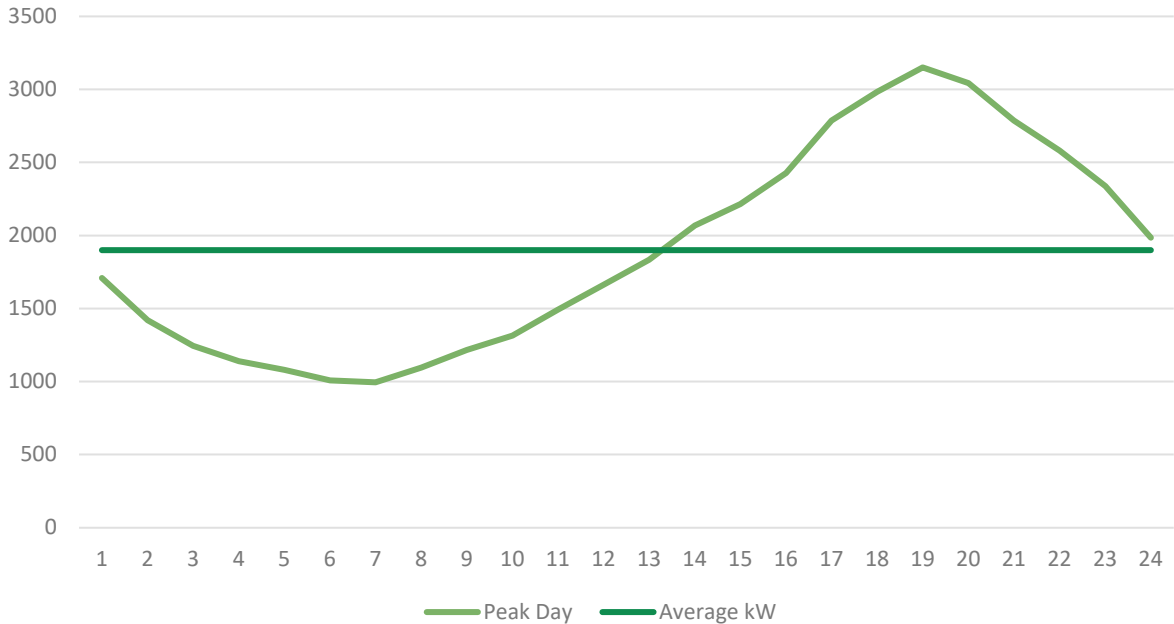
Trends in Lyons Non-coincident Peak and LAP Coincident Peak



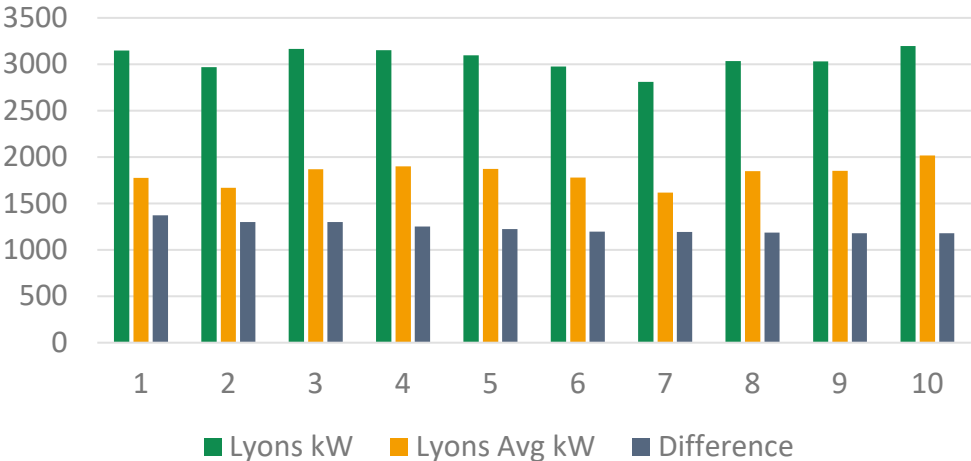
Demand and Economic Modelling

Rank by Peak	Lyons kW	Lyons Avg kW	Difference	Year	Month	Hour Ending
1	3197	2018	1179	2021	7	(4-5pm) 17
2	3166	1867	1299	2020	7	(6-7pm) 19
3	3150	1899	1251	2021	6	(5-6pm) 18
4	3148	1776	1372	2022	9	(5-6pm) 18
5	3119	1983	1136	2022	8	(5-6pm) 18
6	3096	1873	1223	2022	7	(6-7pm) 19
7	3036	1913	1124	2018	7	(5-6pm) 18
8	3034	1848	1186	2022	6	(5-6pm) 18
9	3031	1851	1180	2019	7	(5-6pm) 18
10	2974	1779	1195	2021	8	(5-6pm) 18

June 2021 - Lyons Non-Coincident Peak



Lyons Non-Coincident Peak Days - Top 10



Time of Use

- Evaluated TOU Rates from the following utilities:
 - Xcel
 - Southern California Edison
 - Pacific Gas & Electric
 - Arizona Public Service
 - Salt River Project



Literature Review (still underpay)

- Wide range of effectiveness
 - Ranging from 50% peak demand reduction to 1[^] demand reduction
- Multiple variables, including:
 - Opt-in vs. Mandatory vs. Opt-out
 - Technical enablement
 - Customer education
 - Price Spread
- Only 10% - 15% of customers showing bill savings
 - According to recent University of Texas Study
- Potential for creating new “peaks”
 - May not be most carbon-beneficial

Next Steps

Task	Description	Estimated Date
Task 1	Calculate Maximum, Minimum and Achievable Economic Benefit	June 16
Task 2	Finalize TOU Period(s)	June 16
	Assign Maximum, Minimum and Achievable System Impacts	June 23
	Reevaluate Customer Impact by Segment	June 30
	Quantify Implementation Costs	July 14
	Perform Benefit-cost Analysis	July 21
Task 3	Size & Price BESS	August 4
	Identify Federal, State and other funding sources	August 01
	Develop ROI, ITT and Simple Payback Report	August 31

Appendix

Arizona Public Service (APS)

Plan Description

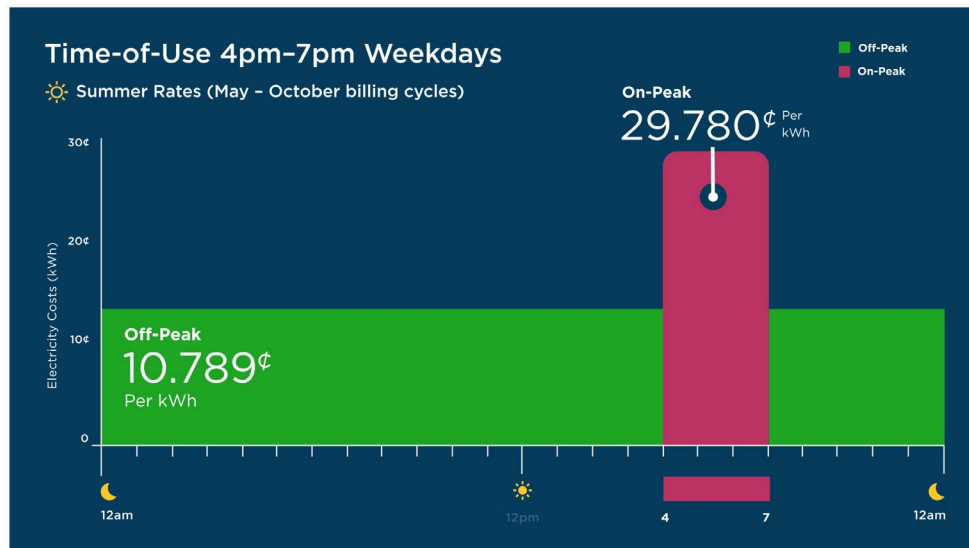
APS offers a Time-of-Use plan that has consistent hours (4pm to 7pm) throughout the year but with higher summer rates (May through Sept). The plan also includes a winter super off-peak rate from 10am to 3 pm weekdays.

Key Messages

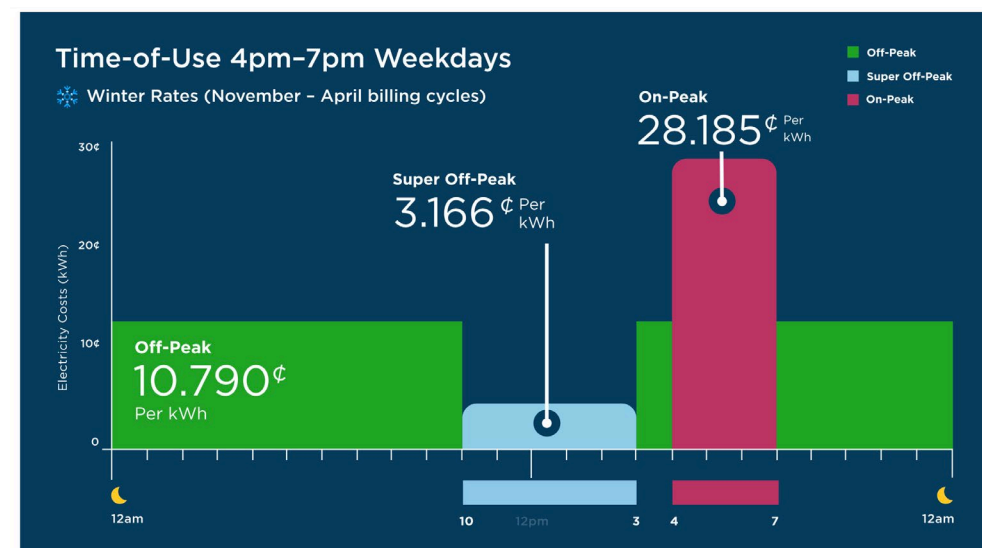
APS positions rate plans, including TOU, as a customer option or choice similar to how they position customer billing and payment programs. They tie the choice to fit with customer lifestyle and needs.

APS communications also focus heavily on savings potential, positioning rate plans as a way to save money. They include messaging about the customer making sure that he/she is on the rate plan that offers the greatest savings and focus on shifting appliance use to off-peak times in their content and graphics.

Summer Rates



Winter Rates



Salt River Project (SRP)

Plan Description

SRP offers two TOU rate plan options, which they refer to as Time-of-Day price plans. The first has a 6-hour on-peak window in summer (2pm to 8pm) and offers greater savings potential. The second TOU rate, EZ-3, has a compressed summer on-peak period and offers two time options - 3pm-6pm or 4pm-7pm . All plans have higher summer peak rates for July and August and summer rates for May, June, September, and October. The standard TOU plan has winter on-peak periods of 5am-9am and 5pm-9pm.

Key Messages

SRP positions the rate plans around customer choice and providing options to meet both budgetary and lifestyle needs. They indicate that the plans reward customers with price breaks if they are able to shift energy use outside of the windows when there is the greatest demand on the power grid. They also focus on pre-cooling to save energy in both in web content and a video on their website.

In addition, they offer a risk free 90-day trial period in which they will provide a credit to the customer if they would have saved on their standard rate plan to allay any customer concerns about bill impacts of switching to a TOU rate plan.

	EZ-3	TOU
Winter rates Nov. through April prices per kWh	On-peak 11.57¢	On-peak 10.45¢
	Off-peak 8.32¢	Off-peak 7.85¢
Summer rates May/June/Sept./Oct. prices per kWh	On-peak 29.71¢	On-peak 21.70¢
	Off-peak 9.05¢	Off-peak 8.03¢
Summer peak rates July through August prices per kWh	On-peak 35.20¢	On-peak 24.85¢
	Off-peak 9.29¢	Off-peak 8.06¢

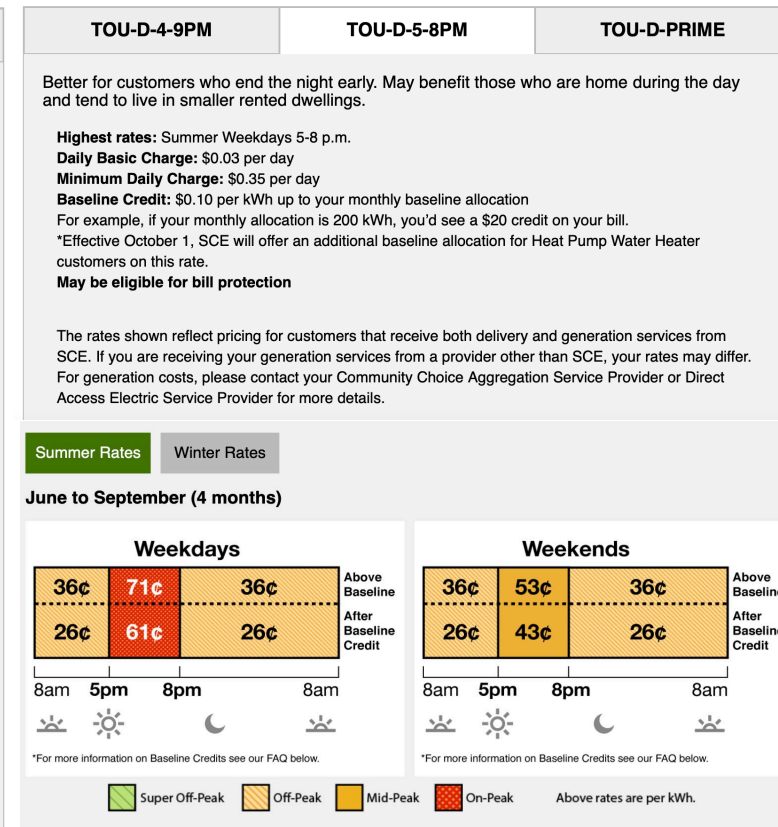
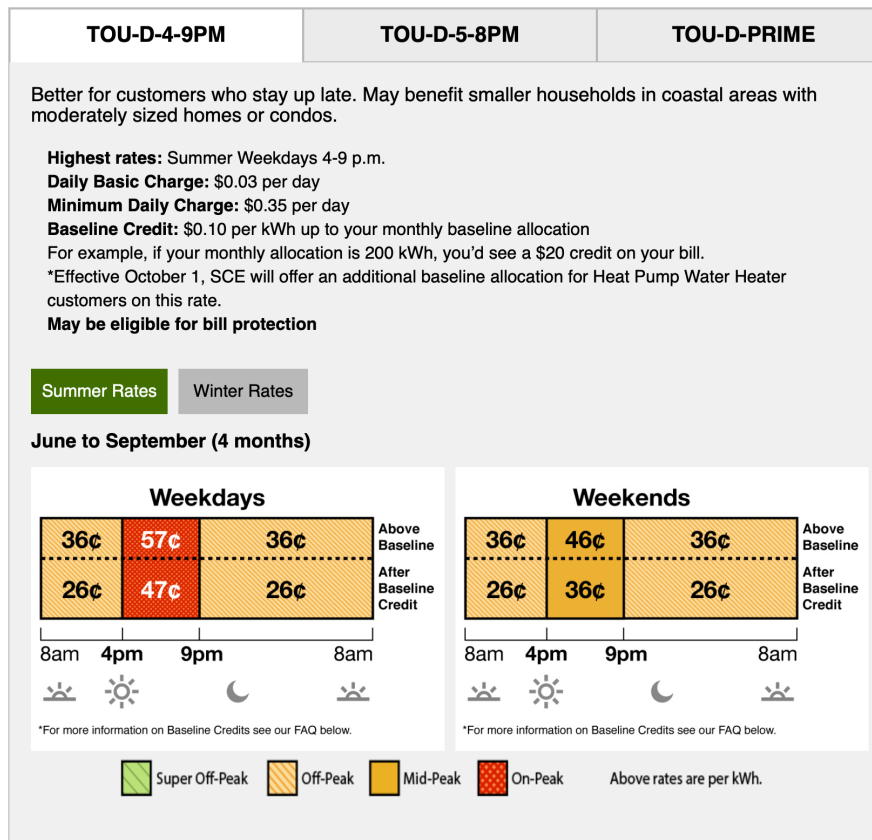
Southern California Edison (SCE)

Plan Description

SCE offers two TOU rate plans. One that has on-peak hours of 4-9pm and one that has on-peak hours of 5-8pm. Both plans offer a baseline credit to offset differing energy needs and cost across their service territory that is calculated based on geography and by season. (A third TOU rate, TOU-D- Prime is available to high usage households, such as those with EV's or residential batteries.)

Key Messages

They position the plans around meeting differing needs based on lifestyle and geography – stay up late, coastal, early-risers, home during the day. They focus on the clean energy benefits of using off-peak wind and solar energy. They also focus on the savings benefits of 1) being on the right rate plan, shifting usage to off-peak and lowering usage.



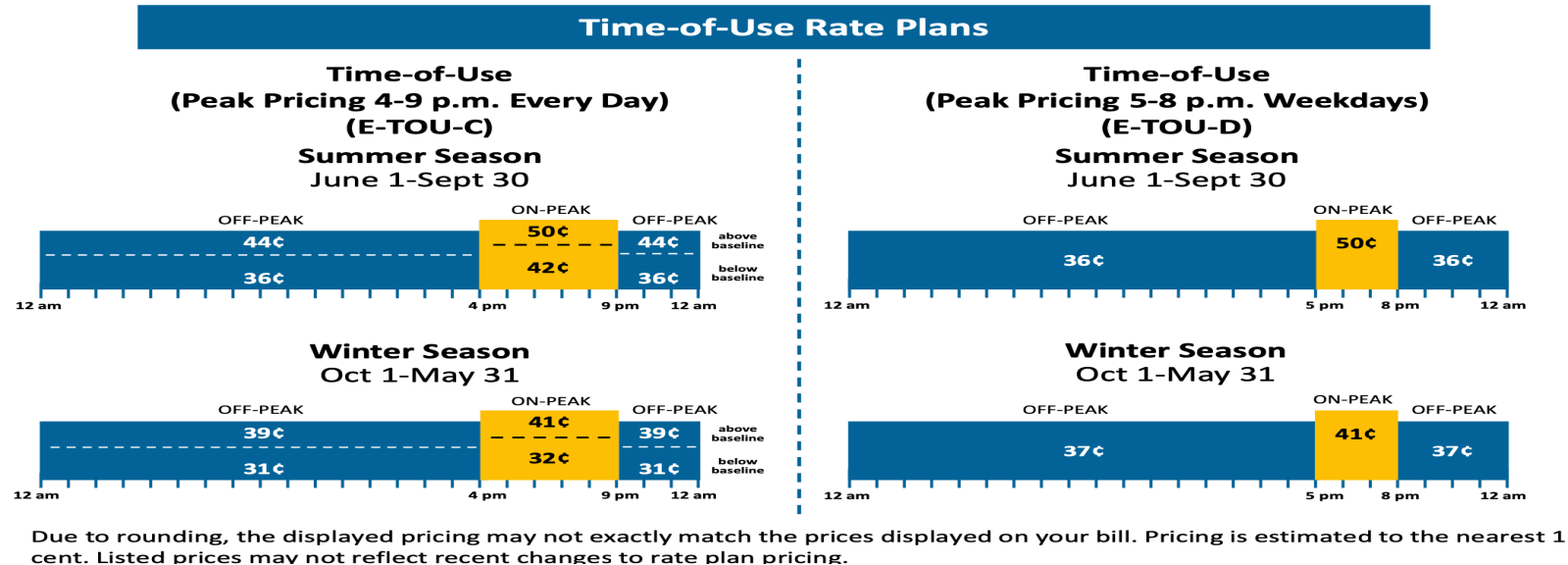
Pacific. Gas & Electric (PG&E)

Plan Description

PG&E offers two time-of-use plans – one from 4pm to 9pm and one from 5pm to 8pm. The TOU-C rate also includes different rates for a baseline amount of energy usage vs. energy above the baseline, which is calculated based on geography, season and heating source.

Key Messages

PG&E messaging focuses on when you use energy being as important as how much you use, and on simple options to reduce use – load first, run later for the dishwasher and washing machine, and Using the t-stat to cool during off-peak. They also position the plans as a way to help California make progress toward clean energy goals, a smarter energy future and a healthier environment. They indicate that prices are lower during the majority of day (off-peak hours) because that's when renewable resources like solar is plentiful and demand is lowest.



Xcel Energy (CO)

Plan Description

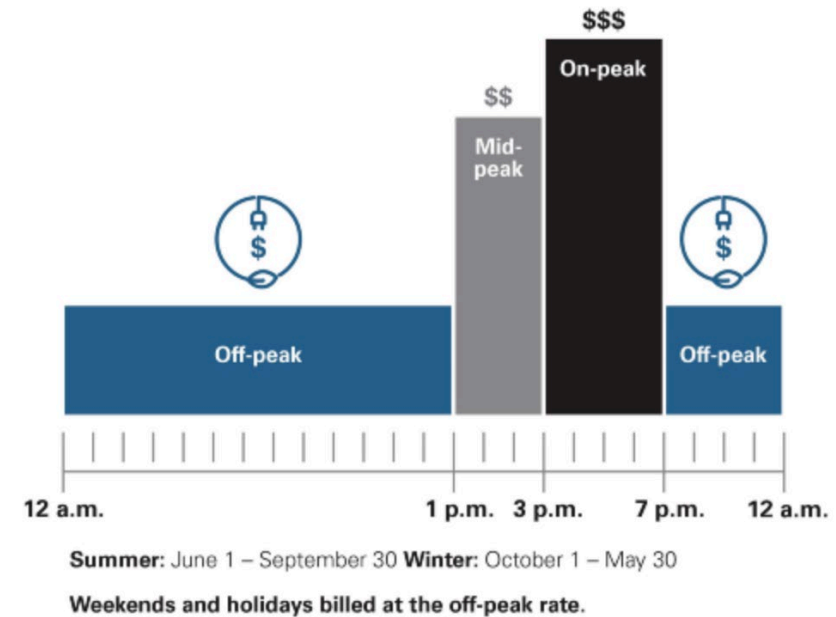
The Xcel Colorado TOU rate includes three time periods: on-, off- and mid-peak. The time periods are the same throughout the year, but pricing varies based on season.

Key Messages

Xcel's current messaging focuses on their introducing new TOU rates, and it being a new way to save. Because of the newness, their content focuses on the basic construct and savings tips – content such as energy cost being driven by how much and when you use and the three different time periods. In addition, they focus on ways to monitor usage - view bill for mid-, on- and off-peak usage, MyAccount – monthly daily, hourly and in 15- and 30-minute intervals.

Xcel ties the off-peak pricing to lower demand and the abundance of wind generation.

They provide a wide variety of savings tips, including ones for year-round and summer, for renters and at an appliance level.



Summer Prices

- Off-peak: 11 cents per kWh
- Mid-peak: 20 cents per kWh
- On-peak: 28 cents per kWh

Winter Prices

- Off-peak: 11 cents per kWh
- Mid-peak: 15 cents per kWh
- On-peak: 18 cents per kWh

TOU Messaging Content Overview

Links to Utility TOU Landing Pages:

- [Arizona Public Service \(APS\)](#)
- [Salt River Project \(SRP\)](#)
- [Southern California Edison \(SCE\)](#)
- [Pacific Gas & Electric \(PG&E\)](#)
- [Excel Energy - CO](#)