

Exhibit to Agenda Item #14

SMUD Board of Directors Meeting

Thursday, October 18, scheduled to begin at 9:00 a.m.

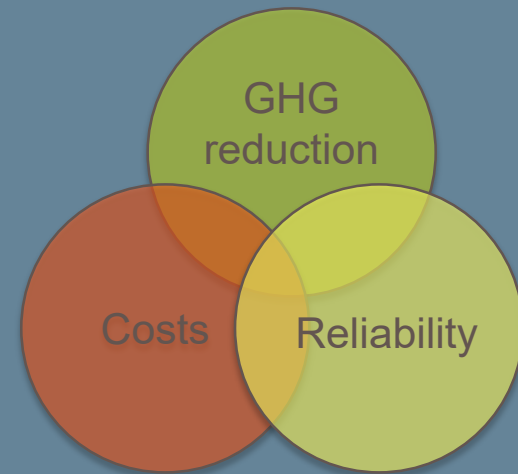
Customer Service Center, Rubicon Room

Powering forward. Together.



IRP Strategic Objectives

- Strategic objective was to establish long-term (2030, 2040 & 2050) carbon targets while balancing:
 - Environmental Leadership
 - Cost and Customer Impacts
 - Reliability
 - Local benefits
- IRP will be reassessed every 5 years to capture critical industry changes
 - IRP will be filed with the CEC
 - IRP includes an appendix with the process and schedule for preparing the next IRP, which will be filed with the CEC in April 2024
 - Monitor progress on IRP annually as part of SD-9 reporting



2018 IRP process recap

1 st Board meeting April 4	2 nd Board meeting June 6	3 rd Board meeting Aug. 1	4 th Board meeting Sept. 5	5 th Board meeting Oct. 2
<ul style="list-style-type: none">• IRP objectives and scenarios• Board/public comment	<ul style="list-style-type: none">• High level scenario results• Board /public comment	<ul style="list-style-type: none">• Detailed scenarios results and staff recommendation• Public report released• Board/ public comment	<ul style="list-style-type: none">• Evaluate new Option 3 and address Board questions• Board/public comment	<ul style="list-style-type: none">• Evaluate new Option 4 and address Board questions.• Draft SD-9 language• Board/public comment

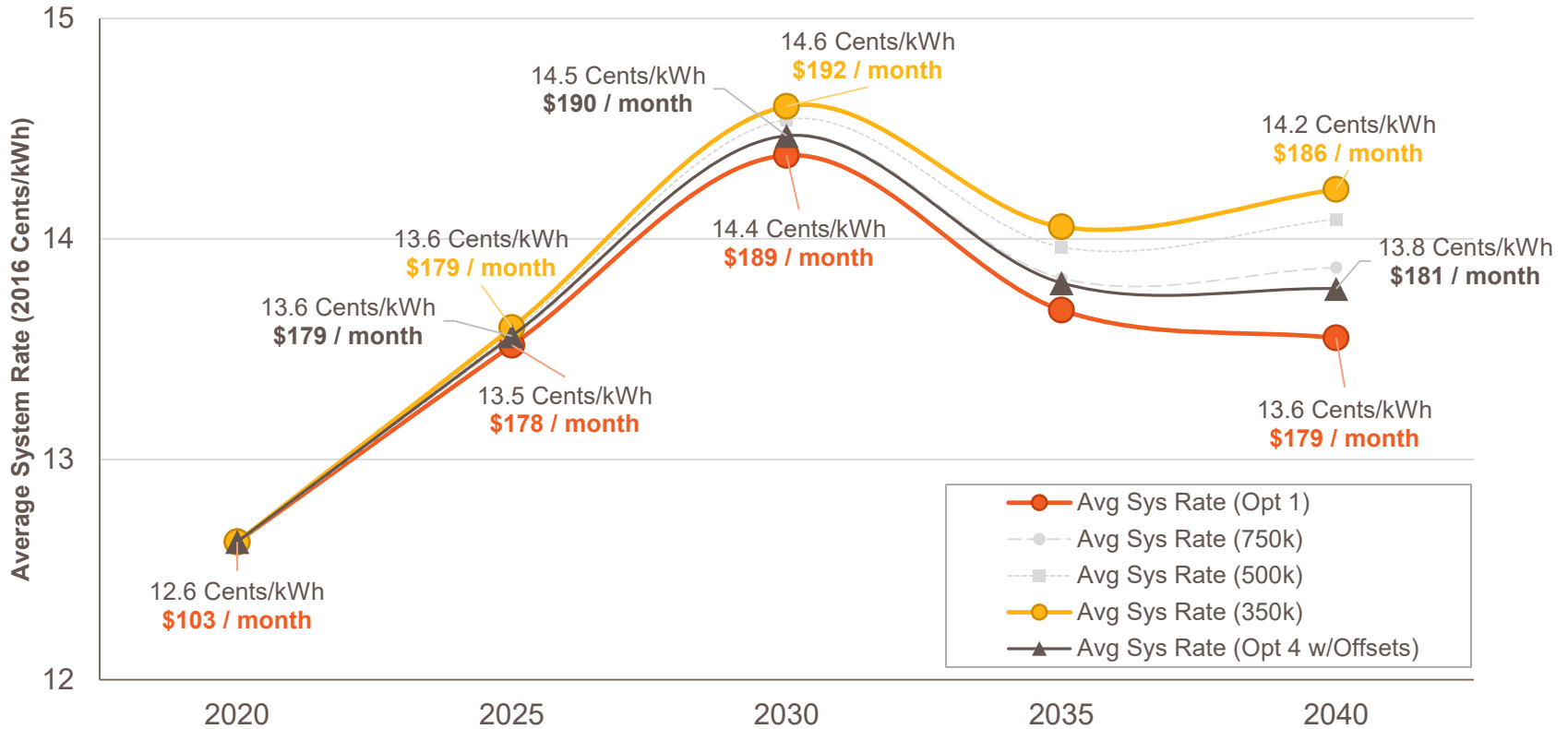
- IRP studied many options for setting new long-term GHG objectives while ensuring SMUD meets specific State and Board policy goals and planning targets, minimizes costs and customer rate impacts, ensures system reliability, and minimizes local emissions with early priority in disadvantaged communities.
- Board meeting Oct. 18 to approve SMUD's 2018 IRP

Final Options Considered

Option	(a) Cumulative Electrification & EE Spend (2016 \$B)	(b) Cumulative Renewable/ Reliability Spend (2016 \$B)	(c) Cumulative Offsets Spend @ \$40/MT (2016 \$B)	(a) + (b) + (c) Cumulative Total Spend (2016 \$B)	2040 Sac Area GHG Emissions (MMT)	2040 Avg Electric Bill Increase over 2020 (\$/Month)
1 1 MMT	\$1.7	\$4.8	\$0.0	\$6.5	4.9 (64% below 2020)	\$76 (74%)
2 750k MT	\$1.7	\$5.1	\$0.0	\$6.8	4.9	\$79 (77%)
2 500k MT	\$1.7	\$5.4	\$0.0	\$7.1	4.9	\$82 (80%)
2 350k MT	\$1.7	\$5.6	\$0.0	\$7.3	4.9	\$83 (81%)
4 350k MT Offsets	\$1.7	\$4.8	\$0.2	\$6.7	4.9	\$78 (76%)

- Emissions in Option 2 are offset by non-local renewables
- Offsets in Option 4 produce same non-local GHG reduction as Option 2 but at much lower cost
- Sacramento area emissions stay at 4.9 MMT in 2040
- Long-term commitments to non-local renewables limit options for reducing bill impacts
 - Less local electrification investments would be primary means of mitigating bill impacts

Rate and Bill Impacts



- Rate/bill impacts could be greater if renewable investments are needed earlier
- Prior to 2030, most customers will not have converted to electric transportation and building use and will see the rate increases but not the bill increases depicted on this chart
- Does not include rate impacts from other increased costs or investments

Key findings

2018 IRP: Key findings

- Carbon reduction
 - Use of natural gas generation is significantly reduced although natural gas capacity is still required for reliability
 - 57% reduction in SMUD emissions from 2020 to 2040
- Renewable expansion
 - Tripling of SMUD's current renewable portfolio with ~2,600 MW of new renewables
 - Addition of ~1,500 MW local solar PV
 - Addition of ~500 MW of local reliability resources
- Electrification
 - Local transportation and building electrification exceeds current State policy
 - Emissions from electrification loads are offset by additional renewables
 - Aggressive electrification reduces local GHG by ~65% and improves local air quality in Sacramento
- Costs and customer Impacts
 - Maintaining low rates encourages more transportation/building electrification
 - Local focus improves the Sacramento economy
 - Disadvantaged communities benefit from lower emissions
 - Cumulative spending will be \$6.5 to \$7.3 billion through 2040

Public input

Key themes

- Appreciation that SMUD studied more aggressive GHG goals
- Support for more aggressive SMUD goals
 - Work toward zero carbon in 2040 and retire natural gas generation
 - Do more earlier
 - Lead the country in addressing climate change
 - Cost is secondary to GHG reduction
 - General support for Option 2 350k MT or Option 4 350k MT
- GHG and customer impacts
 - Consider additional subsidies for low income families
 - GHG is driving climate change
 - Local emissions create health concerns

SD-9 Options

- **Option 1** – \$6.5 B total costs
 - 1.35 Million MT by 2030
 - Net Zero in 2040
- **Option 2** – \$6.8-\$7.3 B total costs
 - 1.35 Million MT by 2030
 - Net Zero in 2040
 - Additional GHG reduction of 250/500/650k MT from investments in non-local renewables
- **Option 4** – \$6.6 - \$6.7 B
 - 1.35 Million MT by 2030
 - Net Zero in 2040
 - Additional GHG reduction of 250/500/650k MT from purchasing offsets

Staff Recommendation – Option 1

- Launches a substantial electrification effort in Sacramento resulting in a significant reduction in local GHG emissions
 - Maximizes local impact and benefits
- Leads the State's plan for decarbonizing the economy
- Moderates rate increases
 - Encourages more electrification
- Ensures local reliability
 - Significant reduction in natural gas plant operations which lowers emissions in disadvantaged communities
 - Utility scale battery storage investments
- Expands renewable investments above State goals
 - Maximizes use of local renewables
- Maintains flexibility without over committing

Draft SD-9 Language – Option 1

It is a core value of SMUD to provide its customer-owners with a sustainable power supply through the use of an integrated resource planning process. A sustainable power supply is defined as one that reduces SMUD's net long-term greenhouse gas (GHG) emissions to serve retail customer load to Net Zero by 2040. Net Zero is achieved through investments in vehicle and building electrification, energy efficiency, clean distributed resources, RPS eligible renewables, large hydro, and biogas. SMUD shall assure reliability of the system, minimize environmental impacts on land, habitat, water quality, and air quality, and maintain a competitive position relative to other California electricity providers.

To guide SMUD in its resource evaluation and investment, the Board sets the following interim goal:

Year	Net Greenhouse Gas Emissions (metric tons)
2020	2,318,000
2030	1,350,000
2040	Net Zero
2050	Net Zero

b) Provide dependable renewable resources to meet 33% of SMUD's retail sales by 2020, 44% by 2024, 52% by 2027, and 60% of its retail sales by 2030 and thereafter, excluding additional renewable energy acquired for certain customer programs.

c) In meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits.

d) SMUD will continue exploring additional opportunities to accelerate and reduce carbon in our region beyond the GHG goals in this policy.

e) Promote cost effective, clean distributed generation through SMUD programs.

Draft SD-9 Language – Option 2

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c) In meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits.

d) In addition to achieving Net Zero by 2040, SMUD will purchase additional non-local renewables to reduce GHG by 250/500/650k MT by 2040.

e) SMUD will continue exploring additional opportunities to accelerate and reduce carbon in our region beyond the GHG goals in this policy.

f) Promote cost effective, clean distributed generation through SMUD programs.

Draft SD-9 Language – Option 4

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