

SoCalREN Response to SoCalGas comments on SoCalREN E3 Calculator Submittal

The following table presents the results of the changes from the original submittal of the SoCalREN to this updated set of E3 Calculators for the SoCalGas territory. After careful consideration of all of the comments and suggestions made by the gas company reviewers, our team has revised the E3 calculators to incorporate several of their recommendations while choosing to retain some of our original assumptions.

**SoCalREN E3 Calculator Adjustments
Summary of SoCalREN E3 Cost Effectiveness Adjustments
Compares "As Originally Submitted" to "As Revised Based on SCG Comments"**

SC REN Originally Submitted						
Program	Wtd Annual Gross Svgs, therms	Rebate/Incentives	Total Resource Costs (TRC)	Benefits	Net Benefits	Ben / TRC
SoCal REC	886,250	886,250	5,763,278	6,001,066	237,788	1.04
SoCal EC Flex Path	633,938	2,034,125	3,626,679	4,488,816	862,137	1.24
SoCal MF Fixed Rebate	823,381	2,806,931	3,873,505	6,985,455	3,111,950	1.80
Portfolio	2,343,569	5,727,306	13,263,462	17,475,337	4,211,876	1.32

SC REN Revised Based on SCG Comments & Correct E3 Version						
Program	Wtd Annual Gross Svgs, therms	Rebate/Incentives	Total Resource Costs (TRC)	Benefits	Net Benefits	Ben / TRC
SoCal REC	886,250	811,003	3,155,795	7,380,400	4,224,605	2.34
SoCal EC Flex Path	537,741	1,708,930	3,285,576	3,888,854	603,279	1.18
SoCal MF Fixed Rebate	683,223	2,690,535	4,093,384	4,701,058	607,673	1.15
Portfolio	2,107,214	5,210,468	10,534,756	15,970,312	5,435,557	1.52

In order to address the specific concerns identified in section III, SPECIFIC CONCERNS WITH THE REN PROPOSALS AS SUBMITTED, the following responses are presented for the consideration of interested parties:

Section III, B, 1. Questions faucet aerator savings as being higher than 20% of total water heater gas usage.

We reference research conducted in SoCalGas territory that included savings of 25.3 therms per showerhead replaced, 27.7 therms per Kitchen Sink Aerator replaced, and 15.3 therms per Lavatory Aerator replaced.

Please see the file named ‘SCG Therm Savings results review for Shwr, Kit, Lav.xls (Results Range DB259:DE260)’ for the detailed data and results of the research conducted.

Section III, B, 1. Also questions window replacements as a valid energy savings measure for gas.

Our data is based on the simulation of many homes using Energy-Pro software. Energy-Pro software is approved for use in modeling the energy usage and energy

savings from energy efficiency measures. The energy savings we report are the result of Energy-Pro simulations. Energy-Pre software is approved for simulating energy savings for the Energy Upgrade California Program.

Section III, B, 1. Also questions the installation rate for the low-flow showerheads.

The program installs these devices using participating contractors. Energy savings are only claimed for devices that are installed and not for homes that are visited without receiving and installed device.

Section III, B, 2. Questions the cost of attic insulation and radiant barriers used for the submittal.

This submittal is part of a shared submittal for these measures with the electric company. The SoCalREC goal was to share the cost of these measures with the electric side of the ratepayer base in order to spread these measure costs in some appropriate manner. While there are always alternative methods of dividing up these shared costs in these types of situations. The SoCalREC method divided the costs between the two utility programs in a manner depending on whether the measure had a counterpart in the other utility's program and whether that other program was contributing more or less to the measure's overall energy savings.

The reason these all have the same incentive levels is that they all share the approximate same installation cost. RS Means data was used to determine that the approximate cost for these measures averaged around \$1.00 for each square foot for these technologies and these average areas covered equated across these measures. Therefore, their measure costs were approximately equal. The remainder of the installation costs are covered in the electric utility E3 Calculator.

Section III, B, 2. Also questions the relative cost of a storage water heater and a tankless water heater.

The RS Means plumbing cost data 2012 resource, pg. 279 lists the installed cost of a 50 gallon residential atmospheric domestic water heater at \$1,400 and a 9.5 GPM tankless water heater at \$1,425. Therefore, we attribute an equal installation cost to these two measures.

Section III, B, 3. Wants SoCalREN to reduce the EUL from what we used to 1/3 of our value for early replacement measures.

We do not wholly disagree with this adjustment, but we do not completely understand the impact on the outcome.

Section III, B, 3. Also wants SoCalREN to reduce the EUL from 20 years to 10 Years on the Faucet Aerators.

We do not disagree with this adjustment.

Section III, B, 3. Also wants SoCalREN to adjust for interactive effects of measures.

We do not wholly disagree with this adjustment, but we do not completely understand the impact on the outcome. Interactive effects will vary widely depending on the combination of measures implemented in each project. There

are an extremely high number of variables to calculate to consider these interactions for all possible cases.

Section III, B, 4. Addresses the “Whole Building Deep Retrofits” and would assign a NTG of 0.5 to all of this measure.

We strongly disagree with this assertion and would recommend a classification of ‘NonRes-sAll-mRCx-ci’, ‘Retro-commissioning services, electric & nat. gas measures’ (82%) if one must be chosen. This classification is closest to the majority of the measures that are planned for installation. This category covers all of the retrocommissioning measures that are a strong component of the measures to be implemented. We intend to use a combination of measures that consists predominantly of Retrocommissioning measures so we weighted the NTG to this end with a minor impact from the lower NTG category referenced. We used 80% as a combination of two categories with the lion share of the measures planned as Retrocommissioning.

Section III, B, 4. Also addresses the furnace replacements indicating that these should have a NTG of 55% instead of 80%.

We strongly disagree with this assertion and would recommend a classification of ‘EUC-Default’, ‘Energy Upgrade California’. This classification applies to all of the Flex-Path and MultiFamily measures as both of these programs fall under the umbrella of EUC.

Section III, B, 5. States that programmable thermostats are not allowed as measures in SoCalGAs programs.

We disagree with this adjustment. The Energy-Pro modeling we utilize demonstrates therm savings for the measure. Energy-Pre software is approved for simulating energy savings for the Energy Upgrade California Program.

Section III, B, 5. Also states that the replacement of a gas furnace with a heat pump is not an approved measure.

We do not disagree with this adjustment.

Regarding specific elements addressed in the tables that are presented in Appendix-A

SoCalGas REC Program

Correct Calculator utilized

Cost from \$6.00 to \$1.98 – Acceptable adjustment, we do not contest this adjustment.

EUL from 15 to 17 years – Acceptable adjustment, we do not contest this adjustment.

NTG from 80% to 50% – We contest this adjustment as indicated previously. We would maintain the use of our 80%. Our combination of measures will utilize Retrocommissioning along with other measures to produce a higher NTG. We used 80% as a combination of the two with the lion share of the measures planned as Retrocommissioning.

SOCaGas Flex Path Program

Correct Calculator utilized

EUL from 20 to various years – Acceptable adjustment, we do not contest this adjustment. We used the closest classification we could identify. We have revisited these and made some adjustments with little impact on the outcome.

NTG from 80% to 55% – We strongly contest this adjustment as indicated previously. We would use 85% for ‘EUC-Default – Energy Upgrade California’.

Remove Fuel switching measures – Acceptable adjustment, we do not contest this adjustment.

Low flow faucet aerators gross measure cost & rebate – We do not contest this adjustment, but we prefer to separate these installations into individual pieces so that each type of aeration device can be tracked individually for its own installations. We prefer to break out Kitchen and Lavatory aerators separately in our submittal. This way the program can track all of the installations of each individual device.

Low flow faucet aerators gross unit annual savings – We contest this adjustment as indicated previously. Our research indicates that there are more savings associated with these devices than indicated by the cited references. We have included the research. We prefer to separate these installations into individual pieces so that each type of aeration device can be tracked individually for its own installations. We prefer to break out Kitchen and Lavatory aerators separately in our submittal as their savings are different from each other. This way the program can track all of the installations of each individual device.

Low flow faucet aerators EUL from 20 to 10 years – Acceptable adjustment, we do not contest this adjustment.

Low flow faucet aerators Installation rate – We contest this adjustment as indicated previously. We are only tracking installed units and as such our installation rate is

100%. Participating contractors are installing each unit as part of their scope of work.

Low flow showerhead installations – Corrected our error, we do not contest this adjustment.

Low flow showerhead gross measure cost & rebate – We contest this adjustment. Our selected models are not as expensive as what is indicated in the adjusted cost.

Low flow showerhead gross unit annual savings – We contest this adjustment as indicated previously. Our research indicates that there are more savings associated with these devices than indicated by the cited references. We have included the research.

Low flow showerhead EUL from 20 to 10 years – Acceptable adjustment, we do not contest this adjustment.

Low flow showerhead Installation rate – We contest this adjustment as indicated previously. We are only tracking installed units and as such our installation rate is 100%. Participating contractors are installing each unit as part of their scope of work.

Remove thermostat replacement measures – We disagree with this adjustment. The Energy-Pro modeling we utilize demonstrates therm savings for the measure. Energy-Pre software is approved for simulating energy savings for the Energy Upgrade California Program.

Remove window replacement measure – We contest this adjustment. The Energy-Pro modeling demonstrates therm savings for the measure. The savings comes from the increased thermal efficiency associated with the new windows which outweighs the loss in solar gain. Most of the savings are realized during the cold times when the system is in heating mode and there is little or no solar gain to be had (at night). Energy-Pre software is approved for simulating energy savings for the Energy Upgrade California Program.

SOCaIGas MF Flex Path Program

Correct Calculator utilized

EUL from 20 to various years – Acceptable adjustment, we do not contest this adjustment.

NTG from 80% to 55% – We strongly contest this adjustment as indicated previously. We would use 85% for ‘EUC-Default – Energy Upgrade California’.

Remove Fuel switching measures – Acceptable adjustment, we do not contest this adjustment.

Low flow faucet aerators gross measure cost & rebate – We do not contest this adjustment, but we prefer to separate these installations into individual pieces so that each type of aeration device can be tracked individually for its own installations. We prefer to break out Kitchen and Lavatory aerators separately in our

submittal. This way the program can track all of the installations of each individual device.

Low flow faucet aerators gross unit annual savings – We contest this adjustment as indicated previously. Our research indicates that there are more savings associated with these devices than indicated by the cited references. We have included the research. We prefer to separate these installations into individual pieces so that each type of aeration device can be tracked individually for its own installations. We prefer to break out Kitchen and Lavatory aerators separately in our submittal as their savings are different from each other. This way the program can track all of the installations of each individual device.

Low flow faucet aerators EUL from 20 to 10 years – Acceptable adjustment, we do not contest this adjustment.

Low flow faucet aerators Installation rate – We contest this adjustment as indicated previously. We are only tracking installed units and as such our installation rate is 100%. Participating contractors are installing each unit as part of their scope of work.

Correct Calculator utilized (repeated comment)

Low flow showerhead gross measure cost & rebate – We contest this adjustment. Program selected models are not as expensive as what is indicated in the adjusted cost.

Low flow showerhead gross unit annual savings – We contest this adjustment as indicated previously. Our research indicates that there are more savings associated with these devices than indicated by the cited references. We have included the research.

Low flow showerhead EUL from 20 to 10 years – Acceptable adjustment, we do not contest this adjustment.

Low flow showerhead Installation rate – We contest this adjustment as indicated previously. We are only tracking installed units and as such our installation rate is 100%. Participating contractors are installing each unit as part of their scope of work.

Remove thermostat replacement measures – We disagree with this adjustment. The Energy-Pro modeling we utilize demonstrates therm savings for the measure. Energy-Pre software is approved for simulating energy savings for the Energy Upgrade California Program.