Energy+Environmental Economics

SDG&E All Source RFO: EE and DR Tools

Energy and Environmental Economics, Inc.

Tools

+ Energy efficiency

- E3 Calculator (SDG&E Custom E3 Calculator v1c5.xlsm)

+ Demand Response

- DR Template (DR Reporting Template SDG&E 10Yr V3c.xlsm)
- A-factor analysis (SDG&E A-Factor v3c.xlsm)

E3 Calculator

- **Similar to standard E3 Calculator used for 2013-2013 program years**
- **Customized for SDG&E's expectations of avoided costs --- therefore not the same as the Commission adopted version**
- **User input process is the same**
  - Inputs only on the "Input" tab.
  - Results are on the "Output" tab.
  - TRC benefit cost ratio is the primary evaluation metric.
  - The E3 Calculator is large, so submissions only require an "export" file that is generated via the "Process Files" button on the Input tab.

E3 Calculator Inputs

- **Top section of the Input tab is for lump sum program-level inputs.**

	B	C	D	E	F	G	H	I
1	**SDG&E 2013 v1c5-Allocs.xls**			Process Files	**Program Budget ($)**			
2					a. Administrative Costs	2013	2014	2015
3	**Proposer General Information**				a.i. Overhead and G&A			
4	Proposer Name				a.ii. Other Admin costs			
5	Program Name				b. Marketing/Outreach			
6	Service Territory		SDG&E		c. Direct Implementation (non incentive)			
7	**First Year of Program Implementation**		2013		c.i. Activity			
8	**Contact Information**				c.ii. Installation			
9	Name				c.iii. Hardware & Materials			
10	Address				c.iv. Rebate Processing and Inspection			
11	ZIP code				d. Total Incentives and Rebates	$ -	$ -	$ -
12	Telephone				e. EM&V			
13	Email				**Total**	**$ -**	**$ -**	**$ -**

Market Adjustments

- **Included in top section. Input choices change depending on user choice in dropdown U4**
  - None: No inputs needed
  - Uniform: Adjustments entered in cells T8:U10
  - Custom: Adjustments entered for each measure in columns AO through AT

	S	T	U
3	**Market Effects Adjustments**		
4	Adjustment type		None
5			
6	Uniform Factors to apply to all measures		
7		Benefit Adj	Cost Adj
8	Participant Inside		
9	Participant Outside		
10	Non-participant		
11	Total Factor	0.0%	0.0%

	S	T	U
3	**Market Effects Adjustments**		
4	Adjustment type		Uniform
5			
6	Uniform Factors to apply to all measures		
7		Benefit Adj	Cost Adj
8	Participant Inside		
9	Participant Outside		
10	Non-participant		
11	Total Factor	0.0%	0.0%

	S	T	U
3	**Market Effects Adjustments**		
4	Adjustment type		Custom
5	**Enter Custom values in columns AO to AT**		
6	Uniform Factors to apply to all measures		
7		Benefit Adj	Cost Adj
8	Participant Inside		
9	Participant Outside		
10	Non-participant		
11	Total Factor	0.0%	0.0%

E3 Calculator Measure Inputs

- **Measure level inputs start in row 17**

	B	C	D	E	F	G	H	I	J
16	Measure Name	DEER RunID	Climate Zone	Target sector	Measure Electric End Use Shape	CZ, Sector, Measure combination found?	Expected Useful Life for New/ROB, RUL for retrofit. (yrs)	Program Type (To look up Net-to-gross Ratio)	Unit Definition (e.g. homes)
17	Text	Text	Coastal		res:DEER:Indoor_CFL_Ltg	TRUE		0.8	Text
18	Text	Text	Inland		NON_res:DEER:HVAC_Split-Package_HP	TRUE		0.7	Text
19	Text	Text	System		NON_res:DEER:HVAC_Split-Package_HP	TRUE		0.7	Text

- **All inputs are unshaded cells**
- **Text indicates informational cells that do not affect calculations**
- **Columns D and F must be selected, and column G should show “TRUE.” If Column G shows “FALSE” you likely have an invalid combination of Climate Zone and End Use Shape. SDG&E E3 Calculator does NOT require any input for target sector.**

Costs and Incentives

- Column K is informational for reviewers
- Column L is only incremental cost for new or replace on burnout. If the measure is an early replacement or retrofit, the TOTAL cost should be entered here
- Columns M-P are for rebates and incentives per measure
- Column Q is calculated (not an input)

	K	L	M	N	O	P	Q
16	Program Type (NEW/ROB or Early Repl(RET))	Gross Measure Cost (Total Cost for Retrofit, Incr Cost for New/ROB) ($/unit)	Rebate to end use customer or its assignee ($/unit)	Incentives to entities other than the end use customer or its assignee($/unit)	Direct Install Labor ($/unit)	Direct Install Material ($/unit)	Gross Participant Cost ($/unit)
17	NEW	10	$ 5.00				$ 5.00
18	ROB	200		$ 100.00			$ 100.00
19	RET	1,500	$ 1,000.00				$ 500.00

Performance

- Performance information entered in columns R:Y
- Columns R and U are incremental savings relative to industry or code compliant measure for New/ROB measures. For retrofit applications, enter savings relative to the existing poor efficiency equipment.
- Enter increases in natural gas usage as a negative value in column V. (savings would be entered as a positive value)

	R	S	T	U	V	W	X	Y
16	Gross Unit Annual Electricity Savings (kwh/unit)	Electric Rate Schedule	Demand Scaler	User Entered kW Savings per unit (kW/unit)	Gross Unit Annual Gas Savings (therm/unit)	Gas Sector	Gas Rate Schedule	Gas Savings Profile
17	10	Residential	kWh	0.01	-0.1	Residential	Residential	Winter Only
18	200	Commercial	kWh	0.1				
19	1000	Commercial	kWh	0.4				

Retrofit inputs

- **Also called "Dual Baseline"**
- **Inputs in Cols Z:AE only needed for retrofit measures.**
  - Column Z: Total expected useful life (EUL) of the measure.
  - Column AA, and AC:AE are incremental savings relative to industry or code standard new equipment.
- **Column AG is the EUL for NEW/ROB measures, but the remaining useful life (RUL) for retrofit measures**

	Z	AA	AB	AC	AD	AE	AF	AG
15	Second Baseline (For savings after the RUL)							
16	Total Life. Can be left blank for single baseline measures (Yrs)	Incremental Cost (relative to standard efficiency default device) ($/unit)	Measure Cost Inflation (%/year escalation)	Early retrofit incremental kWh savings (kWh/unit)	Early retrofit incremental kW savings (kW/unit)	Early retrofit incremental Th savings (Th/unit)	Combustion Type	Expected Useful Life for New/ROB, RUL for retrofit. (yrs)
17							Residential Furnaces (<0.3):	20.0
18								24.0
19	24.0	200.0		200.0	0.1			8.0

Implementation Schedule

- **Installation forecast is on a quarterly basis, and is on the far right of the Input tab.**

	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK
15	2016				2017				2018				2019			
16	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
17					100	50	150	100								
18					10	20	100	80								
19					5	10	15	30								

Results

- **Results shows in the "Output" and "Output by Measure" tabs**
- **Primary metric is the BC Ratio for the TRC test**

	B	C	D	E	F	G	H
14	**Cost Effectiveness (Lifecycle Present Value Dollars)**						
15			**Benefits**			Benefit - Cost	
16		Cost	Electric	Gas	Incentives	NPV	B/C Ratio
17	**Program TRC ($)**	$ 63,363	$89,103	($406)	NA	$25,334	1.40
18	**Program PAC ($)**	$ 58,537	$89,103	($406)	NA	$30,160	1.52
19	**Program RIM ($)**	$ 144,167	$89,103	($406)	NA	($55,470)	0.62

- **For more information on the E3 Calculator see E3 Calculator TechMemo 6d.docx here:**
  - https://ethree.com/public_projects/cpuc4.php

Demand Response Tools

- A-Factor Tool is used to determine how to derate the generation capacity value for DR program availability constraints
- DR Reporting template is a customized version of the tool required by the CPUC Energy Division for evaluating DR cost effectiveness

A-Factor Tool

- **A-Factor tool creates monthly availability percentages that are inputs to the DR Reporting Template**
- **Requirements**
  - Specify when the DR program is available
  - Specify how often it can be dispatched, and for how long
- **All inputs are in the A-factor tab, and are indicated by a yellow shaded box**
- **No need to interact with any of the other tabs**

Specifying availability

- **Define up to two seasons**
- **Indicate if dispatches will be allows on Saturdays and Sundays**
- **For each season, define which hours are eligible for dispatch (TRUE) or excluded (FALSE)**
  - This example shows a case where dispatch is only allowed between 7am and 9pm in the months of May through September.

	A	B	C	D	E	F	G	H	I	J
7	**Season Definition**						**Hours available for dispatch of DR**			
8		1 = Summer								
9	Month	2 = Winter					Summer	Winter		
10										
11	January	2		0 to 1			FALSE	FALSE		
12	February	2		1 to 2			FALSE	FALSE		
13	March	2		2 to 3			FALSE	FALSE		
14	April	2		3 to 4			FALSE	FALSE		
15	May	1		4 to 5			FALSE	FALSE		
16	June	1		5 to 6			FALSE	FALSE		
17	July	1		6 to 7			FALSE	FALSE		
18	August	1		7 to 8			TRUE	FALSE		
19	September	1		8 to 9			TRUE	FALSE		
20	October	2		9 to 10			TRUE	FALSE		
21	November	2		10 to 11			TRUE	FALSE		
22	December	2		11 to 12			TRUE	FALSE		
23				12 to 13			TRUE	FALSE		
24				13 to 14			TRUE	FALSE		
25	Dispatch on			14 to 15			TRUE	FALSE		
26	Weekends?			15 to 16			TRUE	FALSE		
27	FALSE			16 to 17			TRUE	FALSE		
28				17 to 18			TRUE	FALSE		
29				18 to 19			TRUE	FALSE		
30				19 to 20			TRUE	FALSE		
31				20 to 21			TRUE	FALSE		
32				21 to 22			FALSE	FALSE		
33				22 to 23			FALSE	FALSE		
34				23 to 24			FALSE	FALSE		
35										
36							Definition acording to prevailing "clock" time			

Define the Dispatch Call Limits

- Enter max calls per Month
- Enter maximum hours per call
- Press the Single Dispatch button to run the analysis. The resulting % of capacity value that can be captured by your DR program is indicated in the gray cell above
- The monthly values are shown in pink, and should be copied to the DR Reporting Template

	Z	AA	AB	AC	AD	AE	AF	AJ
4	Calls per month	5						
5	Hours per Call	15						
6							Total	
7	Single Dispatch				% of Capacity Value Captured		55.8%	
8								

	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
5	Monthly Capture (Copy this to the DR Template)											
6	1	2	3	4	5	6	7	8	9	10	11	12
7	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	3.95%	30.18%	21.67%	0.00%	0.00%	0.00%

Dispatch Call Scenarios

- The far right of the A Factor tab allows you to run Max Calls and Max Hours scenarios.
- Pressing the “Run Batch” button will calculate the total annual value for each combination up to the maximum calls and hours entered in cells BB4:BB5. The values will be based on the availability schedule you entered at the left of the spreadsheet.

Batch Runs

Max calls per month	15 *BatchCalls*
Max hours per call	15 *BatchIterations*

Run Batch

Number of Calls Per Month	Number of Hours Per Call														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	0.031	0.060	0.089	0.113	0.136	0.159	0.178	0.196	0.208	0.214	0.217	0.217	0.217	0.217	0.217
2	0.060	0.113	0.155	0.189	0.228	0.265	0.297	0.325	0.342	0.351	0.354	0.354	0.355	0.355	0.355
3	0.089	0.160	0.216	0.249	0.289	0.336	0.375	0.408	0.429	0.439	0.442	0.443	0.443	0.443	0.443
4	0.113	0.199	0.268	0.300	0.342	0.397	0.444	0.481	0.505	0.516	0.520	0.521	0.521	0.521	0.521
5	0.137	0.236	0.310	0.346	0.385	0.443	0.491	0.520	0.542	0.554	0.558	0.558	0.558	0.558	0.558
6	0.160	0.266	0.349	0.387	0.426	0.475	0.518	0.547	0.568	0.580	0.584	0.584	0.585	0.585	0.585
7	0.181	0.295	0.384	0.421	0.460	0.502	0.544	0.572	0.591	0.602	0.606	0.607	0.607	0.607	0.607
8	0.201	0.320	0.417	0.451	0.488	0.526	0.568	0.589	0.608	0.620	0.624	0.625	0.625	0.625	0.625
9	0.221	0.344	0.447	0.477	0.512	0.548	0.587	0.606	0.623	0.634	0.638	0.639	0.639	0.639	0.639
10	0.239	0.367	0.472	0.499	0.532	0.567	0.603	0.619	0.636	0.646	0.650	0.651	0.651	0.651	0.651
11	0.256	0.389	0.496	0.519	0.549	0.585	0.617	0.632	0.645	0.655	0.659	0.660	0.660	0.660	0.660
12	0.273	0.409	0.515	0.538	0.563	0.599	0.631	0.641	0.654	0.663	0.667	0.668	0.668	0.668	0.668
13	0.289	0.428	0.530	0.553	0.577	0.613	0.641	0.650	0.662	0.671	0.675	0.675	0.676	0.676	0.676
14	0.304	0.446	0.543	0.567	0.589	0.624	0.650	0.659	0.669	0.677	0.681	0.682	0.682	0.682	0.682
15	0.318	0.461	0.554	0.579	0.601	0.634	0.658	0.667	0.674	0.681	0.685	0.685	0.686	0.686	0.686

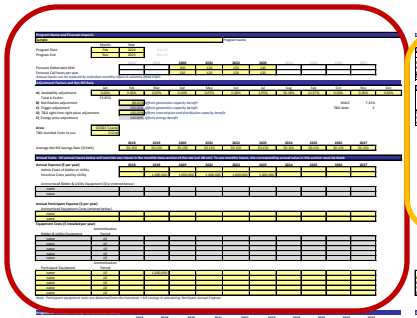
DR Reporting Template

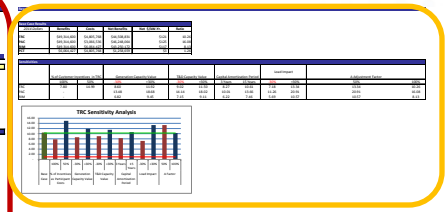
- Calculates cost effectiveness of DR program
- TRC Benefit Cost Ratio is the primary metric
- Each program is entered into a single tab
- Tabs can be added to allow more than one program in the same reporting template
- “Sample” tab is where you enter your DR program information
- To add more programs, press the “Add Program” button on the Summary tab.

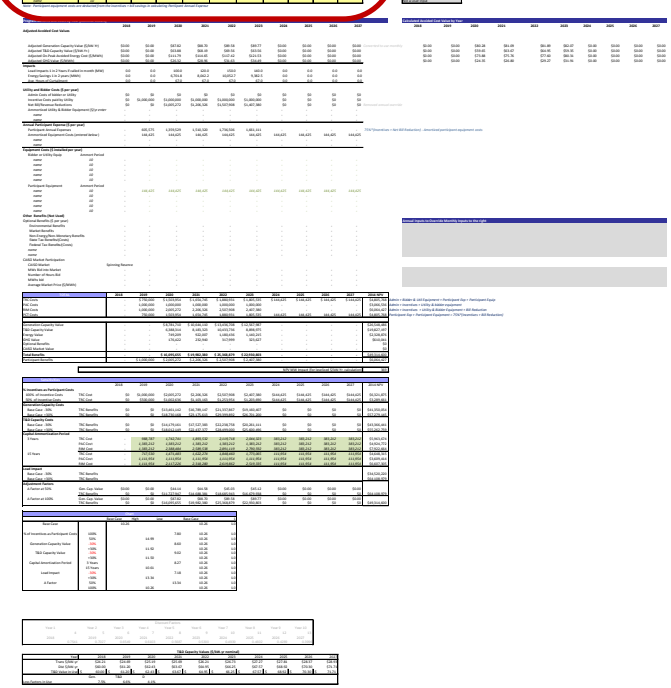
DR Reporting Template Layout

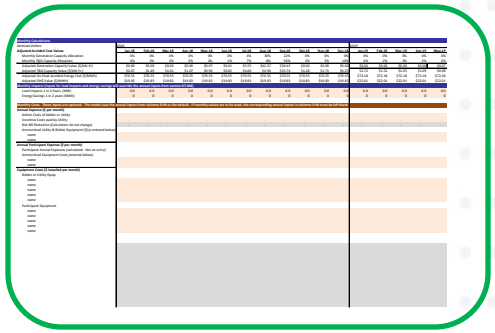
Inputs

Results









Input Overrides

DR Impact and Duration

- **Top section has entries for duration of program, and annual deliverable MW and call hours per year (yellow cells)**

	B	C	D	E	F	G	H	I	J	K	L	M
1	**Program Name and Forecast Impacts**											
2	**Sample**						Program name					
3		Month	*Year*									
4	Program Start	Feb	2020	*Feb-20*								
5	Program End	Nov	2023	*Nov-23*								
6			2018	2019	**2020**	**2021**	**2022**	**2023**	2024	2025	2026	2027
7	Forecast Deliverable MW				100	120	150	140				
8	Forecast Call hours per year				120	120	120	120				
9	*Annual inputs can be replaced by individual monthly inputs in columns AB64:EQ65.*											

- **These values can be overridden with monthly values starting in column AB (pink cells)**
  - Note that the override section has an input for Energy Savings (MWh) instead of Call Hours.

	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO
54	**Monthly Calculations**														
55	*Nominal Dollars*	2018												2019	
56	**Adjusted Avoided Cost Values**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**	**Nov-18**	**Dec-18**	**Jan-19**	**Feb-19**
57	Monthly Generation Capacity Allocation	0%	0%	0%	0%	0%	0%	4%	30%	22%	0%	0%	0%	0%	0%
58	Monthly T&D Capacity Allocation	4%	2%	2%	2%	2%	1%	7%	8%	56%	2%	3%	10%	4%	2%
59	Adjusted Generation Capacity Value ($/kW-Yr)	$0.00	$0.00	$0.00	$0.00	$0.07	$0.01	$5.55	$42.37	$30.43	$0.00	$0.00	$0.00	$0.00	$0.00
60	Adjusted T&D Capacity Value ($/kW-Yr.)	$2.67	$1.49	$1.01	$1.07	$0.96	$0.85	$4.00	$4.96	$33.74	$1.28	$1.71	$6.25	$2.72	$1.52
61	Adjusted On-Peak Avoided Energy Cost ($/MWh)	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$70.55	$72.18	$72.18
62	Adjusted GHG Value ($/MWh)	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$19.83	$22.01	$22.01
63	**Monthly Impacts (Inputs for load impacts and energy savings will override the annual inputs from section D7:M8)**														
64	Load Impacts 1 in 2 Years (MW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65	Energy Savings 1 in 2 years (MWh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Adjustment Factors and Bill Rate

- Paste monthly A-factors into row 12
- D14 is 88% if program is notified day ahead, 100% if can be notified same day
- D15 and D17 are left as is
- D16 is 100% if enabling technology that is expected to last 10 years or longer is installed as part of the proposed program; otherwise, D16 is 0%.
- Use the SDG&E provided bill savings rates as guidance. Use a weighted average of those rates if needed.

	B	C	D	E	F	G	H	I	J	K	L	M	N
10	**Adjustment Factors and Bill Rate**												
11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12	**A)** Availability adjustment	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	3.95%	30.18%	21.67%	0.00%	0.00%	0.00%
13	Total A-Factor:	55.85%											
14	**B)** Notification adjustment		88.00%	*Affects generation capacity benefit*							WACC	7.31%	
15	**C)** Trigger adjustment		100.00%	*Affects generation capacity benefit*							*T&D Area:*	*2*	
16	**D)** T&D right time-right place adjustment		100.00%	*Affects transmission and distribution capacity benefit*									
17	**E)** Energy price adjustment		140.00%	*Affects energy benefit*									
18													
19	**Area:**	SDG&E Coastal											
20	T&D Avoided Costs to use	D Only											
21													
22			**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	
23	Average Bill Savings Rate ($/kWh)		$0.150	$0.150	$0.150	$0.150	$0.150	$0.150	$0.150	$0.150	$0.150	$0.150	

Estimated Bill Rates

- **Use the following class average estimated billing rates for participant bill savings. Use a weighted average across customer classes if necessary.**

SDG&E Estimated Class Average Rates to Use in DR Analysis (cents per kWh)										
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Residential	24.37	25.10	25.85	26.63	27.43	28.25	29.10	29.97	30.87	31.79
Small C&I < 20 kW	26.81	27.61	28.44	29.30	30.17	31.08	32.01	32.97	33.96	34.98
Medium & Large C&I	21.56	22.21	22.88	23.56	24.27	25.00	25.75	26.52	27.32	28.14
Agricultural	22.04	22.70	23.38	24.08	24.80	25.55	26.31	27.10	27.92	28.75

Costs

- **Annual Costs are entered in the main input section. If you prefer to use monthly entries, leave the annual inputs blank and enter your monthly values starting in column AB.**

	B	C	D	E	F	G	H	I	J	K	L	M
25	**Annual Costs. All annual inputs below will override any inputs in the monthly data section of this tab (col AB etc). To use monthly inputs, the corresponding annual value in this section must be blank**											
26	**Annual Expense ($ per year)**		**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
27	Admin Costs of bidder or Utility											
28	Incentive Costs paid by Utility			1,000,000	1,000,000	1,000,000	1,000,000	1,000,000				
29												
30	Ammortized Bidder & Utility Equipment ($/yr *entered below*)											
31	*name*											
32	*name*											
33												
34	**Annual Participant Expense ($ per year)**											
35	Ammortized Equipment Costs (*entered below*)											
36	*name*											
37	*name*											
38	**Equipment Costs ($ installed per year)**											
39	Bidder & Utility Equipment	Ammortization Period										
40	*name*	*10*										
41	*name*	*10*										
42	*name*	*10*										
43	*name*	*10*										
44	*name*	*10*										
45	Participant Equipment	Ammortization Period										
46	*name*	*10*		1,000,000								
47	*name*	*10*										
48	*name*	*10*										
49	*name*	*10*										
50	*name*	*10*										
51	*Note: Participant equipment costs are deducted from the incentives + bill savings in calculating Partiipant Annual Expense*											

Monthly Costs

- **Note that the monthly cost inputs are located below and to the right of the annual inputs**
  - For example, the annual participant equipment costs start in row 46 while the monthly inputs start in row 88.

	B	C	D	E	F
25	**Annual Costs. All annual inputs below will override any inputs in the monthly data section of this tab (**				
26	**Annual Expense ($ per year)**		**2018**	**2019**	**2020**
27	Admin Costs of bidder or Utility				
28	Incentive Costs paid by Utility			1,000,000	1,000,000
29					
30	Ammortized Bidder & Utility Equipment ($/yr *entered below*)				
31	*name*				
32	*name*				
33					
34	**Annual Participant Expense ($ per year)**				
35	Ammortized Equipment Costs (*entered below*)				
36	*name*				
37	*name*				
38	**Equipment Costs ($ installed per year)**				
39	Bidder & Utility Equipment	Ammortization Period			
40	*name*	*10*			
41	*name*	*10*			
42	*name*	*10*			
43	*name*	*10*			
44	*name*	*10*			
45	Participant Equipment	Ammortization Period			
46	*name*	*10*		1,000,000	
47	*name*	*10*			
48	*name*	*10*			
49	*name*	*10*			
50	*name*	*10*			

	AA	AB	AC	AD
67	**Monthly Costs. These inputs are optional. The model uses the annual inputs from columns D:M as th**			
68	**Annual Expense ($ per month)**			
69	Admin Costs of bidder or Utility			
70	Incentive Costs paid by Utility			
71	Net Bill Reduction (Calculation do not change)	-	-	-
72	Ammortized Utility & Bidder Equipment ($/yr entered below)			
73	*name*			
74	*name*			
75	**Annual Participant Expense ($ per month)**			
76	Participant Annual Expenses (calculated. Not an entry)			
77	Ammortized Equipment Costs (entered below)			
78	*name*			
79	*name*			
80	**Equipment Costs ($ installed per month)**			
81	Bidder or Utility Equip			
82	*name*			
83	*name*			
84	*name*			
85	*name*			
86	*name*			
87	Participant Equipment			
88	*name*			
89	*name*			
90	*name*			
91	*name*			
92	*name*			

Other Input Notes

These costs are annual $ per year values. Equipment costs are amortized amounts

These costs are total installed costs.
The template will convert them to amortized values.
Do not enter already amortized values here.

	B	C	D	E
25	**Annual Costs. All annual inputs below will override any inputs in the monthly data se**			
26	**Annual Expense ($ per year)**		**2018**	**2019**
27	Admin Costs of bidder or Utility			
28	Incentive Costs paid by Utility			1,000,000
29				
30	Ammortized Bidder & Utility Equipment ($/yr *entered below*)			
31	*name*			
32	*name*			
33				
34	**Annual Participant Expense ($ per year)**			
35	Ammortized Equipment Costs (*entered below*)			
36	*name*			
37	*name*			
38	**Equipment Costs ($ installed per year)**			
39	Bidder & Utility Equipment	Ammortization Period		
40	*name*	*10*		
41	*name*	*10*		
42	*name*	*10*		
43	*name*	*10*		
44	*name*	*10*		
45	Participant Equipment	Ammortization Period		
46	*name*	*10*		1,000,000
47	*name*	*10*		
48	*name*	*10*		
49	*name*	*10*		
50	*name*	*10*		

DR Participant Costs

- **Note that the template assumes the following**
  - Participant expenses ≈ 75%*(Incentives + Net Bill Reduction) - Amortized participant equipment costs.
    - This is why the customer bill savings rate and the amount of MWh reduction (of call hours) is important.
  - Total Participant Cost = Participant Exp + Participant Equipment ≈ 75%*(Incentives + Bill Reduction).
- **TRC Cost ≈ Admin + Bidder & Util Equipment + Participant Exp + Participant Equip**

Questions

- Any questions regarding the E3 Calculator should be directed to AllSourceRFO@semprautilities.com at any time until the question submittal deadline of November 14, 2014.