

POOL COVERS

Preliminary Meeting



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Pool Category Measures

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No.	Measure Names	PG&E	SCE	SDG&E	SCG	POU
9.01	Commercial Pool Cover					
9.02	LED Pool and Spa Lighting					
9.03	DC Circulation Pool Pump					
9.04	Residential Variable Speed Spa and Wading Pool Pump					
9.05	Residential Variable Speed Swimming Pool Pump					
9.06	Commercial Variable Speed Pool Pump Replacing Pump, <3HP					
9.07	Variable Speed Pool Motors					
9.08	Robotic Pool Cleaners for Residential Pools					
9.09	Commercial Pool and Spa Heater					
9.10	SF Pool Heater					
9.11	SF Spa Heater					

Pool Covers IOU Workpapers WPs

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And Areas of Agreement / Discrepancy among IOU WPs

- **Offerings**
- NormUnit – Therms/sf/yr or \$/sf
- BldgType
- BldgHVAC – NA? (do have indoor pools)
- BldgLoc
- BldgVintage – NA?
- TechType – Probably agree
- Version - Energy Imp – NA? Not in DEER
- **Savings - Gas / Electric – Calc Method**
- **MeasureAppType (EUL/RUL)**
- DeliveryType – Downstream Rebate
- NTGR – 0.60 (Is there a case for using 0.85 for schools – Prop 39? For how long?)
- **Cost – Material and Reel**
- EUL ID
- **GSIA** – Per Disposition but interpretation may depend on offering

PGE3PPRO109 R3

WPSCGNRWH150309A Rev 00

WPSDGENRWH1204 R1

Green – Agree

Red - Disagree

Red – A Bigger issue

9.01 Pool Cover Offerings

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- Need to gain consensus on Offerings

*Applicable to Pools with no covers – **okay with all stakeholders?***

Applicable to Pools with covers that are unusable – in ALL WPs currently

- ❑ PG&E – Schools - Outdoor – small / large (affects cost)
 - ✦ Bundled with Schools EE program
- ❑ SDG&E – All Commercial Pools - Indoor / Outdoor; small / large
 - ✦ EE rebate Program or MF Residential Program
- ❑ SCG - 4 different building types – schools/ universities, city recreation, MF, private / health clubs

**Initial Recommendation - All Commercial and MF pools
(Indoor / Outdoor / Large / Small)**

9.01 Pool Cover EUL / RUL

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Recommendation on EUL / RUL values

Measure Type REA, ROB and NC require full EUL (RUL is N/A)
and
only one (1st) period for savings

- ❑ PG&E – EUL 5 yrs / RUL 1.7 years (in WP table – not used)
- ❑ SDG&E – EUL 6 yrs / RUL 2 years (in WP table – not used)
- ❑ SCG - EUL 5 yrs

Based on Manufacturers' warranties – 2, 3, 5, and 6 years cited in WPs and other literature

Initial Recommendation - 5 years – only one manufacturer cited with 6 year warranty

Any case where early retirement and RUL would apply? Replacing inferior vinyl cover degrading prematurely and clogging filters? Position for AB802?

9.01 Pool Cover Measure Type

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Need to gain consensus on Measure Type (REA, ROBNC, Other?)

REA seems best for Pools with no covers

Applicable to Pools with covers that are unusable – in WPs currently

- ❑ PG&E – REA (Retrofit Add On or ADD)
- ❑ SDG&E – REA
 - ✦ RET – early retirement – was also cited but not reflected in costs or savings – no 2nd baseline period
- ❑ SCG - ROBNC

9.01 Pool Cover Measure Type

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Gaining Consensus on Measure Type (REA, ROBNC, Other?)

■ *Issues – Discussion on ROBNC application (SCG)*

- ✦ ROB assumes a lower efficiency vinyl base cover ($R = 0.1$) compared to a insulated foam cover measure ($R=0.5$). One manufacturer noted that this ‘bubble’ cover is not the commercial standard (in WP appendices).
- ✦ WP notes that NC applies to existing pools with no cover – while a ‘new’ application, REA – retrofitting to an existing pool – is also appropriate. No effect on EUL or 1st/2nd period savings.

Initial Recommendation - REA for all applications

Base case is a pool with no cover

Discussion - Base case can be pools with damaged covers if proof provided (pictures, etc.)

Proof can include affidavit that there were no intentions to replace cover

9.01 Pool Cover GSIA

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WORKPAPER DISPOSITION FOR COMMERCIAL POOL COVERS

California Public Utilities Commission, Energy Division

March 1, 2013

To address possible regressive baselines

Based on Google Earth imagery – mainly PG&E sites

Pools with savings claims that did NOT already had pool covers

- ❑ PG&E – GSIA = 0.28 (28%)
- ❑ SDG&E and SCG – GSIA = 0.38 (38%)
 - ✦ Increased value by 0.10 (10%) due to an increase in R value used to 2.0 (from 0.5 for PG&E)
 - ✦ Is there a better way to make this adjustment
- ❑ SCG notes that GSIA is 'N/A' in their workpaper

9.01 Pool Cover GSIA

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□ Issues with GSIA – Consensus?

- The GSIA addresses possible regressive baselines due to a degraded (or new) cover already installed.
- Could the degraded cover have been a cheaper vinyl bubble cover past its useful life? Is this likely?
- Can this lower value (lower than default GRRs) be removed if the WP requires that the pool cover measure applies only to pools with either:
 1. No Cover
 2. Cover degraded, not in use (for how long?), and not planned for replacement

Initial Recommendation - First eTRM iteration to exclude pools with any cover in use and note GSIA as 'N/A'.

9.01 Pool Cover Costs

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Full and Incremental Measure Costs (FMC and IMC)

Typically Exclude Labor

Costs Components are Material and Reel

Larger Pools Require Automated Power Reels

Issues

- Pools with Degraded Covers do not usually require new reels
- Pools with No Covers will usually require new reels
- IMC applies to NC and ROB used by SCG in WP
- Some basic pool cover required for true NC or NEW installations (T24)
- For commercial, is the market standard now insulated foam floating covers?

WP Costs

- PG&E: FMC = \$2.60 / sf, Large Pool Covers; FMC = \$1.95 / sf, Small Pool Covers (incl. reel)
- SDG&E: FMC = \$1.68 / sf Small / \$2.28 / sf Large Pool Covers (includes reel)
- SCG: \$1.05 / sf vinyl; \$2.24 / sf insulated foam; IMC= \$1.19/sf. (Includes reel ???)

**Initial Recommendation – Develop costs with and without reels based on latest vendor information
– some additional research needed**

9.01 Pool Cover Savings

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Insights on Savings Approach (RESPEC, SCG Approach, Other?)

Measure Type REA, ROB and NC require full EUL (RUL is N/A)
Only one (1st) period for savings

Inputs and Savings Ranges

- PG&E: R=0.5, Wind 10% or 1%, Shading 23% or 5%
 - ✦ Older DOE RESPEC! Model, **only SF and Sacramento weather inputs**
 - ✦ AVG Saved: 3.82, 4.17 or 4.52 therms/sf/yr saved
- SDG&E: R = 2.0, Wind = 1/5/15; Shad = 0%/5%, Pool Temp = 80F, 58 hrs/wk (high activity), closed Dec 15 - Jan 15
 - ✦ AVG saved: 2.44 to 5.06 therms/sf/yr outdoor; 2.70 therms/sf/yr indoor
 - ✦ Older DOE RESPEC! Model, **only SF, LA and Sacramento weather inputs**
- SCG Inputs: **R =0.5**, R total = 2.0, baseline = vinyl cover **R=0.1**, 0-40% wind factor, 0 -30% solar shading
 - ✦ Custom excel model with hard coded savings values, **16 weather stations input**, complex description in WP
 - ✦ AVG Saved – Outdoor: 0.44 to 1.46 therms/sf/yr for **CZ 1 - 16** (across 4 building types)
 - ✦ Indoor Pools: (0.03) to 0.12 therms/sf/yr for CZ 1 - 16

9.01 Pool Cover Savings

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Initial Recommendation - Additional Research Needed

- ❑ *What makes SCG savings much lower than PG&E and SDG&E savings estimates?*
- ❑ *Is a combination of savings approaches appropriate and justified?*
- ❑ *Ripped covers may allow floating water on top of cover – comparable losses to a pool with no cover? Is this the predominant failure mode?*
- ❑ *Other Issues?*

Questions

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OFFERINGS

?

MEASURE TYPE

?

COSTS

?

GSIA

?

SAVINGS