

# Pools and Spas Cal TF Presentation



**ROGER BAKER**  
**JUNE 2018**

# Pools

## Measure Affirmation

2

*“Cal TF affirms the subcommittee recommendations regarding ‘Stage 1 Issues’ for Pool Measures.”*

---

- 9.05 – Variable Speed Pool and Spa Pump
  - Merges 9.04 (Residential VSD Spa and Wading Pool Pump)
  - Merges 9.06 (Commercial VSD Pool Pump)
- 9.09 – Commercial Pool and Spa Heater

*Not affirming today:*

- 9.01 – Commercial Pool Cover

# Pool Category Measures

3

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					

# Measure Consensus -

## 9.05 VSD Pool and Spa Pump

4

- Originally Identified as 3 distinct measures
  - 9.04 Residential VSD Spa and Wading Pool pump
    - ✦ One work paper (SCE13WP009.2)
    - ✦ Applicable to Multi Family spas and wading pools
  - 9.05 Residential VSD Pool Pump
    - ✦ One updated work paper (SCE17WP001.0)
    - ✦ Six offerings
      - 3 Single Family VSD Pool Pumps
      - 1 Multi Family VSD Pool Pump
      - 1 Multi Family VSD Spa Pump
      - 1 Multi Family VSD Wading Pool Pump
  - 9.06 Commercial VSD Pool Pump (SCE17WP008.1)
    - ✦ For Hotel/Motel Pools

# Measure Consensus -

## 9.05 VSD Pool and Spa Pump

5

- Measure Merge Opportunity
  - Latest Residential VSD Pool pump work paper already incorporates spas and wading pools
    - ✦ Renders prior work paper for 9.04 obsolete
  - Existing Commercial VSD Pool pump work paper should be integrated as well
    - ✦ Hotel/Motel pools are subject to same operating standards as multi-family pools
      - Title 24
    - ✦ Currently, savings methodology differs, but these should be aligned
      - Commercial measure uses metered data
      - Multi-family uses engineering algorithms and CEC data

# Measure Consensus - 9.05 VSD Pool and Spa Pump

6

- Seven Offerings

- Residential Single Family

- ✦ Commissioned VSD replacing 2-speed pool pump
    - ✦ Single Family VSD replacing 2-speed pool pump
    - ✦ Commissioned VSD replacing 1-speed pool pump

- Residential Multi-Family

- ✦ Commissioned VSD replacing 1-speed pool pump
    - ✦ Commissioned VSD replacing 1-speed spa pump
    - ✦ Commissioned VSD replacing 1-speed wading pool pump

- Commercial (Hotel/Motel)

- ✦ Commissioned VSD replacing 1-speed pool pump – direct install

- Commissioned offerings for contractor-driven market

# Measure Consensus - 9.05 VSD Pool and Spa Pump

7

## ● Stage 1 Issues

- ❑ Measure merge:
- ❑ Savings
  - ✦ Existing work papers identify different savings for Climate Zone 15 versus Rest-of-state
    - Climate zone 15 data derived from prior Palm Desert partnership program
    - Rest-of-state savings attempt to “adjust” partnership parameters to reflect statewide data
      - Larger pool size
    - Dual treatment only applies to single family direct install offerings
- ❑ Cost
  - ✦ Multi-Family offerings included permit costs

## ● Stage 2 Issues

- ❑ Incorporate updates from SCE work paper (in process)
- ❑ Further review rationale for CZ15 savings versus Rest-of-state
- ❑ Align savings methodologies between multi-family and commercial
- ❑ Revisit assumptions surrounding spa pumps and wading pool pumps

# Input Consensus -

## 9.05 VSD Pool and Spa Pump

8

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
<b>BldgType</b>	SFm MfM Htl Mtl Dmo	Res	SFm Any	SFm MFm	No Value
<b>BldgVintage</b>	Any	Any	Any	Ex	No Value
<b>BldgLoc</b>	CZ15 Any	Any	CZ06 CZ08 CZ09 CZ10 CZ13 CZ14 CZ15 CZ16 Any	Any	No Value
<b>BldgHVAC</b>	ANY	cUnc	Any	Any	No Value

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
<b>MeasureAppType</b>	ER ROB NC	ROB RobNc	ER RobNc	No Value	No Value
<b>NormUnit</b>	Each	Each	Each	Each	No Value
<b>EUL ID</b>	OUTD-POOLPUMP	OutD-PoolPump	OutD-PoolPump	OutD-PoolPump	No Value
<b>RUL ID</b>	OUTD-POOLPUMP	(blank)	OutD-PoolPump	No value	No Value
<b>NTGR</b>	RES-DEFAULT>2 RES-DEFAULT-HTR-DI Com-Default>2	Res-Default>2	Res-Default>2 Res-Default-HTR-di	No Value	No Value
<b>DeliveryType</b>	DirInstall PreRebDown	DirInstall PreRebDown PreRebUp	DirInstall PreRebDown	No Value	No Value
<b>GSIA</b>	Def-GSIA	Def-GSIA	Def-GSIA	No Value	No Value



# Measure Consensus -

## 9.09 – Commercial Pool and Spa Heater

9

- Offering

- ❑ PG&E workpaper (PGECOPRO105 R3)
- ❑ Existing/Base system
  - ✦ 82% efficient packaged pool heater
- ❑ Proposed system
  - ✦ Packaged pool heater with 84% or greater efficiency
- ❑ Natural gas only

- Measure Extension

- ❑ Not currently in POU TRM

# Measure Consensus -

## 9.09 Commercial Pool and Spa Heater

- Stage 1 Issues

- Savings

- ✦ Calculated using Reduce Swimming Pool Energy Cost (RSPEC) software
      - Obsolete software – no longer supported
      - Model does not match California climate zones
      - Measure efficiency input based on 2012 CEC qualified equipment list
        - 87.09% efficiency modeled
        - Subcommittee preference is to parse out into efficiency tiers
    - ✦ SCG has developed an updated calculator for other pool measures that may be used for this

- Stage 2 Issues

- Address efficiency bins (condensing vs non-condensing)
  - Rerun analysis with SCG software and California climate zones

# Measure Consensus -

## 9.09 Commercial Pool and Spa Heater

11

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
BldgType	Com, MFm	Any	No Value	No Value	Any,Com
BldgVintage	Ex	Ex	No Value	No Value	Any,Ex
BldgLoc	CZ01,CZ02,CZ03,CZ04,CZ05,CZ06,CZ07,CZ08,CZ09,CZ10,CZ11,CZ12,CZ13,CZ14,CZ15,CZ16	CZ01,CZ02,CZ03,CZ04,CZ05,CZ06,CZ07,CZ08,CZ09,CZ10,CZ11,CZ12,CZ13,CZ14,CZ15,CZ16	No Value	No Value	CZ01,CZ02,CZ03,CZ04,CZ05,CZ06,CZ07,CZ09,CZ10,CZ11,CZ12,CZ13,CZ14,CZ15,CZ16,CZ08
BldgHVAC	Any	cUnc	No Value	No Value	Any

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
MeasureAppType	ROB	ROB	No Value	No Value	ROB
NormUnit	Cap-kBTUh	Cap-kBTUh	No Value	No Value	Cap-kBTUh
EUL ID	WtrHt-GPoolHtr	WtrHt-GPoolHtr	No Value	No Value	WtrHt-GPoolHtr
RUL ID	WtrHt-GPoolHtr	(blank)	No Value	No Value	0
NTGR	Com-Default>2yrs Res-Default>2yrs	Com-Default>2yrs	No Value	No Value	Com-Default>2yrs,Res-Default>2
DeliveryType	PreRebDown	PreRebDown	No Value	No Value	PreRebDown
GSIA	Def-GSIA	No Value	No Value	No Value	Def-GSIA

# Other Measures - Dispositions

12

- 9.01 Pool Covers
  - ❑ Awaiting completion of market study to address EAR team concerns regarding Replace-On-Burnout baseline
  - ❑ Early returns suggest an outcome supporting this measure
  - ❑ Affirmation will be requested at future CalTF meeting
- 9.03 Direct Current Pool Pump for Commercial Pools
  - ❑ Measure was approved in 2015
  - ❑ Uses small (100 watt) Direct Current pool pump in parallel with existing, larger capacity pump
    - ✦ Intended to allow solar powered pump during day
    - ✦ Runs larger, AC pump for pool cleaning at night

# Other Measures - Dispositions

13

- 9.03 Direct Current Pool Pump for Commercial Pools
  - The intended use case for this measure did not materialize
    - ✦ Codes typically require at least one pool turnover every 6 hours when pool is open
    - ✦ DC pump cannot satisfy flow requirement
    - ✦ Only time DC pump can be used is when pool is closed
      - Typically overnight when solar energy is not available
    - ✦ Measure could be reworked as single-family
      - Concerns about cannibalizing VSD pool pump measure
      - Likely more expensive due to additional piping, valving and controls
- 9.08 Robotic Pool Cleaner
  - This measure was not on original measure list for 2018
  - Some interest has resurfaced during subcommittee discussions
  - Existing work paper is from 2014
  - Will revisit as part of Stage 2 efforts to assess inclusion

# Pools

## Measure Affirmation

14

*“Cal TF affirms the subcommittee recommendations regarding ‘Stage 1 Issues’ for Pool Measures.”*

---

- 9.05 – VSD Pool and Spa Pump
- 9.09 – Commercial Pool Heater

# Questions...

15