

# Agriculture / Pumping Cal TF Tier 2 Presentation



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**MARCH 2018**

# Agricultural / Irrigation Measure Affirmation

2

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

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- 3.02 – Agricultural Ventilation Fans
- 3.05 – VFD on Agricultural Well Pumps

# Measure Overview

3

No.	Measure Names	Plan	PG&E	SCE	SDG&E	SCG	POU
3.01	Agricultural Pump System Overhaul	2018-Q1					
3.02	Agricultural Ventilation Fans	2017					
3.03	Farm Sprinkler to Micro Irrigation Conversion	Hold / Measure Revision					
3.04	Low Pressure Sprinkler Nozzles	Disposition					
3.05	Variable Frequency Drive on Agricultural Well Pumps	2017					
3.06	Milk Cooling Scroll Compressor	Hold / Measure Sunset					
3.07	Vertical Hollow Shaft Pump Motors	Federal Code					
3.08	CHR Unit - Electric and Gas	n/a					
3.09	Milk Vacuum Pump VSD	n/a					
3.10	Milk Transfer Pump VSD	n/a					
3.11	Chilled Glycol Pipe Insulation	n/a					
3.12	Glycol tank Insulation	n/a					
3.13	Milk Pre Cooler	n/a					
3.14	Greenhouse - Heat Curtain	2018-Q1					
3.15	Greenhouse - Infrared Film	2018-Q1					
3.16	New Water Pump Upgrade	2018-Q1					
3.17	Enhanced VFD on Ag Pump	2018-Q1					

Blue Text - Updated information

Yellow Highlight - 2017 Measure

Green Highlight - 2018 Measure

# Measure Consensus

## 3.02 – Agricultural Ventilation Fans

4

- Offering

- ❑ Fan Size (24-26", 36", 48") – like for like
- ❑ Removing largest option (50-52") – **planned for custom**

- Stage 1 Issues

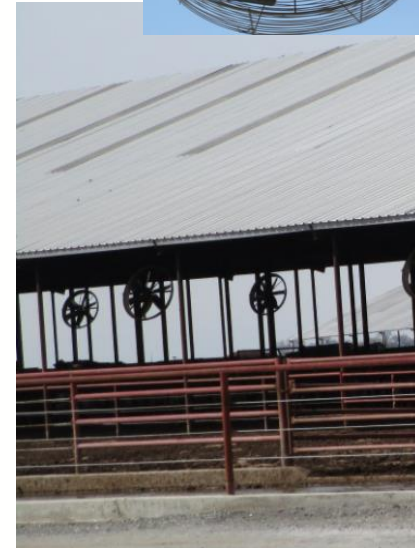
- ❑ Maintaining alignment with PG&E workpaper

- Measure Extension

- ❑ Added measure for POU's
- ❑ Added measure for SCE and SDG&E (electric measure)

- Stage 2 Issues

- ❑ *Consider adding larger fan options with VFDs*
- ❑ *Consider adding new construction / added load*
- ❑ *Consider other sensitive variables (Climate Zone, Setpoint Turn-On)*



# Input Consensus

## 3.02 – Agricultural Ventilation Fans

5

- Measure Permutations

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
BldgType	Any	Any	No Value	No Value	No Value
BldgVintage	Ex	Ex	No Value	No Value	No Value
BldgLoc	Any	Any	No Value	No Value	No Value
BldgHVAC	cUnc	cUnc	No Value	No Value	No Value

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
MeasureAppType	ROBNC	ROB	No Value	No Value	No Value
NormUnit	Each	Each	No Value	No Value	No Value
EUL ID	Agr-VSDWellPmp	Agr-VSDWellPmp	No Value	No Value	No Value
RUL ID	N/A	No Value	No Value	No Value	No Value
NTGR	Agric-Default>2yrs	Agric-Default>2yrs	No Value	No Value	No Value
DeliveryType	PreRebDown NonUpStrm	PreRebDown	No Value	No Value	No Value
GSIA	Def-GSIA	Def-GSIA	No Value	No Value	No Value

# Measure Consensus

## 3.05 – VFD on Agricultural Well Pumps

6

### • Offering

- Well Pumps ( $\leq 300\text{hp}$ ,  ~~$\leq 600\text{hp}$~~  *Enhanced Spec*), Booster Pumps ( $\leq 150\text{hp}$ )
- Standard ~~/Enhanced~~ Spec

### • Stage 1 Issues

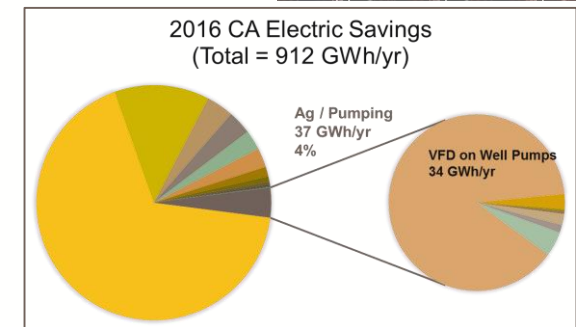
- Maintaining alignment with PG&E workpaper

### • Measure Extension

- Added measure for POU's
- Added measure for ~~SCE and~~ SDG&E (electric measures)

### • Stage 2 Issues

- Include Enhanced Offering*
- Consider more sensitive variables to distinguish savings*
- Include opportunities to pump to open vessels*
- Documenting EUL for REA measure (next slide)*
  - Received 30-yr data set*
  - Working with Doug M. to start this analysis; running Monte Carlo analysis with Crystal Ball*



Percent Change Within the Measure

	PGE	SCE	SDGE	SCG	Total
kW	2%	2%			2%
kWh	1%	1%			1%
Therms					
Cost	0%	-51%			-19%

Absolute Change & Comparison

	Total	% of Measure	% of Category	PGE	SCE	SDGE	SCG
kW	68.34	0%	0%	57.84	10.50	-	-
kWh	56,150	0%	0%	47,442	8,708	-	-
Therms	-		0%	-	-	-	-
Cost	\$(1,138,106)	-6%	-5%	\$ -	\$(1,138,106)	\$ -	\$ -

# Input Consensus

## 3.05 – VFD on Agricultural Well Pumps

7

- Measure Permutations

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
BldgType	Any	Any	Any	No Value	No Value
BldgVintage	Ex, New	Ex, New	Ex	No Value	No Value
BldgLoc	Any	Any	Any	No Value	No Value
BldgHVAC	cUnc	cUnc	Any	No Value	No Value

	eTRM Measure Value	PG&E	SCE	SDG&E	SCG
MeasureAppType	NC, REA	NC, REA	REA, ROBNC	No Value	No Value
NormUnit	Rated-HP	Rated-HP	HP	No Value	No Value
EUL ID	Agr-VSDWellPmp	Agr-VSDWellPmp	Agr-VSDWellPmp	No Value	No Value
RUL ID	Agr-VSDWellPmp 10 yrs = 1/3 (3.33 years)	No Value	No Value	No Value	No Value
NTGR	Agric-Default>2yrs	Agric-Default>2yrs	Agric-Default>2yrs	No Value	No Value
DeliveryType	DirInstall PreRebDown	DirInstall PreRebDown Any	DirInstall PreRebDown	No Value	No Value
GSIA	Def-GSIA	Def-GSIA	Def-GSIA	No Value	No Value

# Agricultural / Irrigation Measure Affirmation

8

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# Questions

9