

# Auto-DR Developing Technical Coordinator (TC)

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# Auto DR Program Goal

- Auto-DR Background
  - Improve DR program participation
  - Improve load reduction consistency, reliability and predictability
- DR enable program (TA/TI, Auto DR) - transition program
- Develop open standard for automation technology
- Train market participants and technology providers to implement Auto DR

# Technical Coordination Concept

- Initially hand-holding customers through the automation process including DR strategy development and technology integration done by LBNL researchers.
- Identified as an important role for successful commercialization.
- Control vendors, EMCS providers, and retro-commissioning vendors identified as ideal candidates.
- LBNL tested with the Demand Response Integration Services Company (DRISCO) concept in 2006
- Utilized in 2007 Auto-DR (Hands-on vs. Hands-off)

# 2007 and 2008 TC incentives

Technical Coordinators Incentive	2007	2008
Equipment Incentive	Up to 30/kW based on T&M	Up to 30/kW based on T&M
1 DR Event Incentive	Up to 20/kW based on T&M	N/A
End of Year Incentive	Up to 20/kW based on T&M	Up to 30/kW based on T&M
Total	Up to 70/kW based on T&M	Up to 60/kW based on T&M

# TC Costs Summary for 2007 Auto-DR

TC Firm	kW Enabled	\$/kW	Number of Sites	DR Program			Client	
				CPP	DBP	CPP & DBP	CLIR	WS Client
<b>TC1</b>	2982	29	41	17	22	1	15	2
<b>TC2</b>	15175	4	3		3		3	
<b>TC3</b>	1568	42	13		12		3	1
<b>TC4</b>	2874	70	25		25			1
<b>Total</b>	<b>22599</b>	<b>19</b>	<b>82</b>	<b>17</b>	<b>62</b>	<b>1</b>	<b>21</b>	<b>4</b>

Customer Type	Shed (kW)	TC hours	Hr/kW
<b>All Customers</b>	22642	2159	0.10
<b>New Industrial</b>	15175	449	0.03
<b>New Commercial</b>	6116	1637	0.27
<b>Legacy Industrial</b>	100	5	0.05
<b>Legacy Commercial</b>	1251	68	0.05

# Installation and TC Costs for 2007 Auto DR

<b>Customer Type</b>	<b>All Customers (N=82)</b>	<b>New Industrial (N=2)</b>	<b>New Commercial (N=66)</b>	<b>Legacy Industrial (N=1)</b>	<b>Legacy Commercial (N=13)</b>
<b>Shed (kW)</b>	22642	15175	6116	100	1251
<b>TC Cost (\$)</b>	\$357,075	\$59,021	\$286,215	\$800	\$11,039
<b>Installation (\$)</b>	\$1,390,240	\$709,706	\$629,878	\$0	\$50,656
<b>Av. TC \$/kW</b>	24	5	35	8	12
<b>Min. TC \$/kW</b>	-	3	4	8	-
<b>Max. TC \$/kW</b>	70	7	70	8	47
<b>Med. TC \$/kW</b>	11	5	32	8	9
<b>Av. Inst. \$/kW</b>	69	37	88	-	67
<b>Min. Inst. \$/kW</b>	1	5	33	-	1
<b>Max. Inst. \$/kW</b>	187	68	180	-	187
<b>Med. Inst. \$/kW</b>	71	37	94	-	45
<b>Av. Total \$/kW</b>	96	41	123	8	79
<b>Min. Total \$/kW</b>	8	12	29	8	10
<b>Max. Total \$/kW</b>	210	72	210	8	198
<b>Med. Total \$/kW</b>	71	41	118	8	49

## Conclusion – TC

- TCs have been instrumental in achieving Auto-DR goals for 2007.
- TA/TI fund distribution was sufficient to fund TC activities.
- Hands-on TC Firms' involvement in installing and configuring the Auto-DR systems may lead to efficiency in installation and reduction in overall costs. It leads to education of controls vendors in the field on DR issues and strategies.
- 2007 PG&E TC still need more hand on training in the future
- Need to develop more TC