

# *Demand Response Incentives for Data Centers*

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*October 24, 2012*



## Current Demand Reponse Programs

### Base Interruptible Program

- The Base Interruptible Program (BIP) offers a monthly bill credit to businesses that commit to reducing power to a minimum pre-determined level when requested.
- ~\$7/kW Payment per event

### Critical Peak Pricing Program

- Save money throughout the year by reducing your power use only on hot summer days. When electric supplies are expected to be low, SDG&E will contact you to request a reduction in your energy consumption. In return for your reduction, you can earn a year-round rate discount.

### Technology Assistance / Technology Incentive Program

- Receive incentives to subsidize the cost of upgrades.
- ~\$300/kW Automatic Demand Response Enabling Technology Incentive
  - One Time Incentive
- Must use CPP DR rates for one year

\*Disclaimer: Rebates and Incentive Levels are only estimates, and specific DR Programs may not be available at all times.

# 1 MW Example Data Center

## Assumptions

- \$0.006/kWh difference between CPP Rates and non-CPP Rates
- 1 MW Constant Data Center 24/7
- \$0.96/kWh Higher on CPP days
- 7 Hour Length of Event Time

CPP Economics	
\$144	Savings Per Day
\$52560	Savings Per Year
\$6720	Extra Cost Per CPP Event
8	Number of Events to Break Even

# 1 MW DR Center Load Shed Strategies

Strategy	Percent Reduction	kW Reduction	BIP Payment (\$7/kW)	Extra CPP Cost Minus BIP Payment per Event	TI Incentive Amount (\$300/kW)
Server and CRAC Unit Shutdowns	41	410	2870	1095	123K
Load Shifting or Queuing IT jobs – Server idling	30	300	2100	2604	90K
Temperature set point adjustment	6	60	420	5897	18K
Shutdown and idling of IT storage clusters	28	280	1960	2878	84K
Load migration between heterogeneous systems	15	150	1050	4662	45K
Load migration between homogeneous systems	28	280	1960	2878	84K

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## *Automatic Demand Response*

- Shed Load Automatically based on DR and Price Signal
- Data Centers can easily respond to DR Signal
  - Listen to DR Server
- Open Automatic Demand Response (OpenADR)
  - Open Internet Protocols
- Ancillary Services