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Load Impact Evaluation of California's Statewide Base Interruptible Program

Final Report

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1. EXECUTIVE SUMMARY

Each of California's three major investor-owned utilities, Pacific Gas and Electric (PG&E), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E), offer the Base Interruptible Program (BIP). BIP is a tariff based, emergency-triggered demand response program that the California Independent System Operator (CAISO) can dispatch for system emergencies, and the utilities can dispatch for local emergencies. Customers enrolled in BIP receive incentive payments in exchange for committing to reduce their electrical usage to a contractually-established level referred to as the Firm Service Level (FSL). Participants who fail to reduce their load to their FSL are subject to a financial penalty assessed on a kW per hour basis. Enrollment in BIP in January 2009 equaled 149 accounts for PG&E, 583 accounts for SCE and 20 accounts for SDG&E.

This report documents the ex post and ex ante load impact estimates associated with BIP for all three of California's major investor owned utilities. Ex post estimates are provided for the most recent events for PG&E and SDG&E. Ex ante load impact estimates are provided for SCE and SDG&E for the years 2009 through 2020. PG&E plans to fold BIP customers into the Company's PeakChoice program after 2010. As such, ex ante load impacts for PG&E are presented just for the years 2009 and 2010.

1.1. Ex Post Load Impact Estimates

In 2008, PG&E was the only utility to call a BIP event. A test event was implemented for two hours on August 28th. SDG&E had two events in 2007, when only three customers were enrolled in the program. By agreement with the CPUC, the impacts associated with the two 2007 event days in SDG&E's service territory were to be included in this report. However, considering that only one customer participated in the second event, the impacts are not reported for that event due to customer confidentiality. SCE's last called event was in 2006. Ex post analysis for that event was conducted in conjunction with SCE's Demand Response Program filing for 2009-2011.

The August 28, 2008 event for PG&E lasted two hours, from 3 to 5 pm. The aggregate hourly load drop per hour over the two-hour event period equaled approximately 210 MW. This represents an 83 percent drop relative to the reference load of 252 MW. The load drop exceeded what was required to meet the FSL by roughly five percent.

The September 4, 2007 event for SDG&E lasted four hours for the two customers on Option A (30-minute notification, four hour maximum event duration) and three hours for the one customer on Option B (3 hour notification and maximum event duration of three hours). The aggregate load drop across the three hours from 3 to 6 pm was 1.87 MW and the load drop in the fourth event hour, from 2 to 3 pm, was 1.72 MW.

1.2. Ex Ante Load Impact Estimates

BIP is a large, statewide emergency resource. Table 1-1 shows the amount of DR available statewide in 2010[1] through BIP. For the typical event day and monthly peaks throughout the year, between 915 and 1,013 MW of load reduction is available under 1-in-2 weather year conditions. These results are not significantly different for the 1-in-10 weather year conditions because BIP customers are not

[1] Results for 2010 are reported in this section because PG&E plans to incorporate BIP customers into the Company's PeakChoice program after 2010.

weather sensitive on average. For each day type, around 75 percent of the load reduction comes from SCE, 24 percent from PG&E, and the remaining 0.5 to 1 percent from SDG&E.

Table 1-1 Aggregate Impact per Hour for Event Period (2 to 6 pm) for California BIP Program Participants by Day Type 1-in-2 Weather Year Conditions, Forecast Year 2010				
Day Type	SCE[2] (MW)	PG&E (MW)	SDG&E (MW)	Total (MW)
Typical Event Day	690.6	227.6	5.9	924.1
January Monthly Peak	692.4	216.5	6.2	915.1
February Monthly Peak	694.2	219.3	6.1	919.6
March Monthly Peak	706.3	223.9	6.2	936.4
April Monthly Peak	718.1	227.5	6.1	951.6
May Monthly Peak	717.9	226.2	6.2	950.3
June Monthly Peak	698.4	227.5	5.8	931.7
July Monthly Peak	684.4	227.4	6.1	918.0
August Monthly Peak	693.3	229.7	6.1	929.1
September Monthly Peak	694.4	223.1	5.9	923.5
October Monthly Peak	706.8	218.6	5.9	931.3
November Monthly Peak	780.8	217.5	5.6	1003.8
December Monthly Peak	781.9	225.4	5.6	1012.9

Table 1-2 shows the aggregate impact per hour by local capacity area for a typical event day. More than half (51 percent) of the total resource is located in the LA Basin, where the estimated load reduction potential equals 472.5 MW. The rest of the SCE territory provides an additional 24 percent of the total load impact, split roughly evenly between Outside LA Basin LCA (100.7 MW) and the Ventura LCA (116.9 MW). PG&E's Other LCA provides the second largest load impact with 164.3 MW, or 18 percent of the statewide total. It is the only LCA outside of SCE's territory that provides more than 3.5 percent of the total load impact.

[2] For SCE, aggregate impacts are expected to grow through 2013 due to enrollment growth and the economic recovery. As a result, aggregate impacts for SCE in 2013 are 13 to 19 percent higher on average for the day types reported in Table 1-1.

Table 1-2 Aggregate Impact per Hour for Event Period (2 to 6 pm) for California BIP Program Participants by Local Capacity Area Typical Event Day, 1-in-2 Weather Year Conditions, Forecast Year 2010		
Utility	Local Capacity Area	Load Impact (MW)
SCE	LA Basin	472.5
	Outside LA Basin	100.7
	Ventura	116.9
PG&E	Greater Bay Area	29.1
	Greater Fresno	3.3
	Humboldt	4.3
	Kern	9.8
	Northern Coast	8.0
	Sierra	3.0
	Stockton	5.6
	Other	164.3
San Diego	San Diego	5.9
	Total	924.1