

DOCKET

09-IEP-1C

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**California Energy Commission
2009 Integrated Energy Policy Report
Docket Number 09-IEP-1C**

The following spreadsheets are the California Energy Commission (Energy Commission) forms for collecting data and analyses relating to electricity demand. The Energy Commission's statutes and regulations specify that a broad array of information can be collected and analyzed to prepare the *Integrated Energy Policy Report*. Specifically, Public Resources Code (PRC) Section 25301 directs the Energy Commission to conduct regular assessments of all aspects of energy demand and supply to that it may develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. To carry out these assessments the Energy Commission may require submission of data from market participants in California:

To perform these assessments and forecasts, the Energy Commission may require submission of demand forecasts, resource plans, market assessments, and related outlooks from electric and natural gas utilities, transportation fuel and technology suppliers, and other market participants. PRC 25301(a)

Submittal Format

Parties are requested to submit a diskette or compact disk containing:
data from Forms 1, 2, 3, 6, 7, and 8, and
reports on Forms 4 and 5 in Word or Acrobat.

Data with no confidentiality request should be sent to:

California Energy Commission

Docket Office

Attn: Docket 09-IEP-1C

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

or email to: Docket@energy.state.ca.us. Please include "Docket #09-IEP-1C Demand Forecast", in the subject line.

If you are requesting confidentiality, please review the detailed instructions.

To expedite the forecast comparison and review process, an Excel template with formats for each form in 1, 2, and 3 is provided. While it is preferred that filers use this template, participants may provide these results in their own format as long as the equivalent information is provided and the information is clearly labeled.

Due Date: **All** **Friday, February 13, 2009**

The data do not have to be distributed to the IEPR service list.

Technical questions relating to the electricity demand forecast should be directed to Chris Kavalec (916) 654-5184 or Tom Gorin (916) 654-4759 of the Demand Analysis Office or by email at ckavalec@energy.state.ca.us or tgorin@energy.state.ca.us.

Form 4

City of Glendale – Water & Power

Demand Forecast Methodology Documentation

Glendale *Water & Power* (GWP) doesn't have a load forecasting software used by larger load serving entities (LLSEs). The benefits that a relatively small utility like GWP might derive from using such a software do not off set the purchase and maintenance costs of such software.

The forecasted loads were developed using ordinary least-squares linear regression techniques with input data spanning the years 1990 through 2006. The fiscal year loads from 2007 to 2018 were then estimated. The submitted forecasts are reasonable since the historical and forecast growth patterns have remained consistent through the years.

Form 5

City of Glendale – Water & Power

DSM Methodology Documentation

SMART HOME ENERGY AND WATER SAVING SURVEY

GWP Smart Home Energy and Water Surveys is a turnkey demand side management program that helps customers evaluate their homes and make recommendations on how to save energy and water. The auditor discusses the benefits of using compact fluorescent lamps (CFL's) where possible, determines applicable locations for placement, and installs up to two CFL's. For customers with central heating and air conditioning systems, the auditor recommends regularly scheduled maintenance, encourages customers to change or clean their filters periodically, provides information on GWP's Smart Home AC Tune-Up & Duct Sealing program for testing and sealing duct systems to minimize heating and cooling losses, and discusses proper heating and cooling temperature settings and the benefits of installing programmable thermostats. The auditor inspects the attic insulation and informs customers with insufficient insulation levels that adding insulation will help lower the heating and cooling costs of the home. The auditor inspects the condition of all windows and doors and discusses installing weather stripping on doors and adding storm windows to single pane windows as a simple but cost effective means of reducing heating and cooling losses. The auditor checks refrigerator, freezer, and water heater temperature settings, and discusses energy saving benefits of maintaining proper temperatures. The auditor also uses the home visit as an opportunity to market the Smart Home Energy and Water Saving Rebate program. The auditor will provide rebate packets for the customer and will offer guidance and information to further assist in the promotion and success of the rebate program. Demand and energy savings are based on standard engineering analysis. Average annual per unit energy savings and demand reductions are estimated at 751 kWh and 0.1715 kW. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 7 years.

SMART HOME ENERGY AND WATER SAVING REBATES

This program provides incentives to promote the purchase of ENERGY STAR® rated and other approved energy and water saving appliances and devices to replace older less efficient ones. Demand and energy savings are based on standard engineering analysis. Average annual per unit energy savings and demand reductions are as follows:

Refrigerator	360 kWh	0.0822 kW
Clothes washer	320 kWh	0.0731 kW
Room AC	135 kWh	0.0308 kW
Central AC	400 kWh	0.0913 kW
Dishwasher	71 kWh	0.0162 kW
Insulation	530 kWh	0.1210 kW

Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 10 years.

COOL CARE LOW-INCOME REFRIGERATOR EXCHANGE & RECYCLING

The primary goal of Cool Care is to provide long-term electric bill discounts for low-income customers through energy savings. Refrigerators are the most diverse of all the appliances and can account for 30-40% of a low-income household's energy use. An 18 cubic foot refrigerator produced before 1990 uses an estimated 1200 kilowatt-hours or more per year, while today's highly efficient ENERGY STAR models of the same size use only about 440 kWh. Average per unit energy savings and demand reductions are estimated at 750 kWh and 0.1715 kW. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 10 years.

SMART HOME AC TUNE-UP & DUCT SEALING

Provided by Proctor Engineering, this turnkey program helps residential customers save energy by ensuring that their air conditioning and duct systems are functioning at their optimal level using state-of-the-art "CheckMe!" air conditioning tune-up and duct sealing technologies. Average per unit energy savings and demand reductions are estimated at 225 kWh and 0.0514 kW. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 5 years.

PEAK HOGS LOW-INCOME AIR CONDITIONER EXCHANGE

Peak Hogs reduces GWP peak demand and customer energy consumption, and provides bill relief for GWP residential customers by providing incentives for Glendale apartment owners to replace apartment HVAC units. Energy savings and demand reductions are based on difference between the old SEER/EER and tonnage and new SEER/EER and tonnage assuming 900 cooling hours per year. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 10 years.

TORCHIERE EXCHANGE

This program will save energy and reduce the danger of fire by allowing customers to exchange up to two 300-watt or more halogen torchiere lamps for state-of-the-art 55-watt compact fluorescent models at up to five exchange events through June 2006. Assuming average 300 watt used for 4 hours per day is exchanged or a 55 watt with same average usage, per unit energy savings and demand reductions are estimated at 357 kWh and 0.0815 kW. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 5 years.

BUSINESS ENERGY SOLUTIONS

This program reduces business customer demand and annual energy consumption through cash incentives to conduct comprehensive energy audits and install demand reducing and energy savings measures. Recommended retrofit measures include lighting, HVAC systems, refrigeration, motors, and EMS-DDC systems. Demand (mW) and energy (gWh) savings are calculated by comparing the appropriate baseline model to the prospective retrofit model taking into consideration specific Energy Conservation Measures (ECMs). The difference between the appropriate baseline model and prospective retrofit model provides the associated demand and energy savings. For example, with respect to lighting, the difference between calculated existing vs. proposed total watts is the demand savings. Individual fixture operating hours are typically estimated based on observations and occupant interviews. Savings are expected to last 12 years.

SMART BUSINESS ENERGY SAVING UPGRADES

This program provides small business customers with comprehensive no-cost energy audits, written audit reports, energy education, as much as \$1,000 worth of installed cost-effective energy conservation measures. Energy savings and demand reductions are based on customer specific energy audits. Recommended retrofit measures include lighting, HVAC systems, refrigeration, motors, and window film. Demand (mW) and energy (gWh) savings are calculated by comparing existing equipment with newly installed energy saving equipment. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 7 years.

SMALL BUSINESS AC TUNE-UP & DUCT SEALING

Provided by Proctor Engineering, this turnkey program helps small business customers save energy by ensuring that their air conditioning and duct systems are functioning at their optimal level state-of-the-art "CheckMe!" air conditioning tune-up and duct sealing technologies. Average per unit energy savings and demand reductions are estimated at 225 kWh and 0.0514 kW. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 5 years.

OPERATION STOP LIGHT

This program completed LED retrofits at all 200 City of Glendale traffic intersections. Demand and energy savings were calculated difference between existing vs. proposed total watts and operating hours, and verified through actual metering data taken from 40 traffic intersections. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 10 years.

OPERATION CITY LIGHTS

This program completed comprehensive lighting and HVAC retrofits in twenty-three City owned and/or operated buildings. Demand and energy savings were calculated by comparing the appropriate baseline model to the prospective retrofit model taking into consideration specific energy conservation measures (ECMs). The difference between the appropriate baseline model and prospective retrofit model provides the associated demand and energy savings. For example, with respect to lighting, the difference between calculated existing vs. proposed total watts is the demand savings. Individual fixture operating hours are typically estimated based on observations and occupant interviews. Demand reductions were derived using a kWh/kW factor of 4,380, which is comparable to GWP's average load capacity factor. Savings are expected to last 15 years.

Form 6

City of Glendale – Water & Power

Uncertainty Analysis

Glendale Water & Power (GWP) realizes that there are many uncertainties; unpredictable events which may significantly affect the forecasts which we have made for future load and energy requirements. Among the events which GWP acknowledges as unpredictable are:

A war or major armed conflict

An oil or natural gas embargo

A major earthquake or natural disaster

Severe weather conditions; prolonged drought or El Niño conditions

Hyper inflation or collapse of the national economy

A major technological break through altering the methods or economics of energy delivery or production

Etc.

All these events as mentioned are unpredictable in their possible timing or effect. GWP operates in a prudent fiscally sound manner and updates its forecasts regularly and frequently to take account of developing changes. GWP feels it to be a speculative and academic exercise to develop scenarios for these events.