Agenda Report

August 16, 2010

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (August 10, 2010)

FROM: Water and Power Department

SUBJECT: **CITY COUNCIL WORKSHOP ON THE STATUS OF IMPLEMENTING THE 2009 POWER INTEGRATED RESOURCE PLAN**

RECOMMENDATION:

This report provides information that will be used to support the City Council workshop on the status of implementing the 2009 Power Integrated Resource Plan.

EXECUTIVE SUMMARY:

Following an extensive analytic and public stakeholder input process, the City Council adopted the Pasadena Water and Power (PWP) 2009 Power Integrated Resource Plan (IRP) on March 16, 2009. The IRP established a recommended mix of power supply resources that is intended to provide a sustainable balance between environmental benefits, electric service reliability, and competitive electricity cost for PWP's customers under a wide variety of market, regulatory, and economic conditions. The IRP created various metrics for reducing PWP's reliance on existing coal resources, increasing renewable resources, replacing an aging local power plant, incentivizing energy conservation and demand reduction, and promoting customers' use of solar photovoltaic systems. This report is to provide an update on PWP's progress in implementing the IRP.

PWP has initiated an array of measures to implement the IRP recommendations, as summarized in Table I. Significant metrics for 2010 include achieving 15% Renewable Portfolio Standard (RPS) goal; 3 MW of solar photovoltaic installations; and a 5% reduction in greenhouse gas emissions (GHG). PWP expects to meet or exceed these metrics with the exception of the solar goal, which will likely be achieved during FY2011. Although PWP has approved sufficient solar rebate applications to meet the 3 MW goal, the actual installation of systems is dependent upon customer decisions and contractor progress that is beyond PWP's control. PWP has also initiated efforts towards many other IRP metrics for future years.

Table I
IRP Implementation Status as of June 30, 2010

Recommendations	Target Quantity	Target Date	Status
Coal Power Displacement	35 MW	2016	Negotiations in process
Local Gas-Fired Generation: • Replace Broadway Unit 3 with a similarly-sized combined cycle • Upgrade controls and equipment on Gas Turbine Units 1 and 2	65 MW (approx.)	2014	On track to date Additions to scope of work resulting from GT-1 failure may delay B3 repowering and GT-2 improvements
Energy Efficiency: Cumulative annual energy savings from Fiscal Year 2007	45.5 GWh/yr 124.0 GWh/yr 211.5 GWh/yr	- FY10 - FY15 - FY20	On track Cumulative savings estimated at ~53 GWh/yr (4%) as of FY2010
Peak Load Savings: Reduce peak load by 10% below expected levels	33 MW	2012	Unlikely ~11 MW (3.4%) as of FY2010
Demand Response: Incentives to reduce or curtail electric use during peak load hours	5 MW	2012	Delayed. To be developed in conjunction with smart grid program
Renewable Portfolio Standard (energy used for PWP's retail electric customers)	15% (187 GWh) 33% (381 GWh) 40% (460 GWh)	2010 2015 2020	On Track ~ 8% for CY 2009 ~ 15% for CY 2010
Solar photovoltaic installations in Pasadena (SB-1 goal is 14 MW by 2017)	3 MW 10 MW 15 MW 19 MW	2010 2015 2020 2024	Behind schedule ~1 MW as of June 2010 Estimated 3.2 MW by June 2011
Feed-In Tariff for Local Renewable Resources	8 MW 10 MW	2020 2023	In development
GHG Emissions Reductions (base year 2008 emissions = 905,000 tonne)	5% (45,250 tonne) 25% (226,250 tonne) 40% (362,000 tonne)	2010 2015 2020	On Track ~ 5 % reduction in CY 2010

Local Generation Repowering

The May 4, 2010 power turbine failure and resulting fire has rendered Gas Turbine Unit 1 (GT-1) irreparable. PWP, in conjunction with the insurance company, is evaluating replacement options and associated cost and business losses. PWP is evaluating potential impacts on the scope of work for the Broadway Unit 3 repowering, including alternative designs and potential permitting impacts. In addition to potential delays in the Broadway 3 repowering project, the loss of GT-1 has resulted in lost revenues and adversely impacted PWP's ability to respond to unplanned outages.

Feed-In Tariff

A feed-in tariff requires utilities like PWP to purchase renewable electricity from generators under a standardized contract that provides a guaranteed rate structure, typically for 15 to 20 years. The use of feed-in tariff rates and standard contract terms helps project developers determine the feasibility of renewable energy projects. The IRP seeks to establish a feed-in tariff program with the goal of procuring 8 MW of renewable resources inside the City by 2020 at an average price of up to 15 ¢/kWh. Recently, the Federal Energy Regulatory Commission (FERC) ruled that their authority applies to relatively small renewable energy generators contemplated under feed-in tariffs. Thus, PWP is carefully considering federal compliance issues as well the potential impact on electric rates as it works towards developing a feed-in tariff for renewable resources, and a forthcoming proposal for compensating PWP's solar-electric customers for any net excess generation as required under Assembly Bill 920 (2009).

Rate Impacts

Thus far, implementation of the IRP has not resulted in significant cost or rate increases. This is due to a number of factors, including delays in delivery of some higher-cost renewable resources, spreading payments for large solar incentives over five years, the procurement of relatively low cost short term renewable resources, and lower than expected spot market costs for power and natural gas. Ultimately, IRP implementation will put additional upward pressures on the energy charge and public benefits charge rate formulas as PWP acquires additional long-term renewable resources and solar incentive payment obligations accumulate. As summarized in Table II, each component of PWP's electric rates is facing significant upward pressure in the coming years.

Table II
Electric Rate Pressures

Rate Component	Approx. Rate	Rate Pressures
PBC	0.58¢	• Solar and Energy Efficiency Programs
Energy	8.53¢	• Renewable Resource Acquisition • Feed-in Tariff • Fuel and Spot Market Energy Costs • GHG Mitigation, Credits/Tax
Transmission	0.82¢	• CAISO Transmission Rate
Distribution	4.28¢	• Infrastructure Replacement • Smart Grid
Total	14.21¢	

The FY 2011 budget includes a 0.5¢/kWh increase in the Power Cost Adjustment to the Energy Charge; however, PWP's single-tier electric rates remain competitive with local municipal utilities and well below Southern California Edison's tiered rates.

Legislative and Regulatory Uncertainty
Evolving legislative and regulatory policies at State and Federal level continue to create moving targets for RPS and GHG reduction with complex and often opposing accounting rules. This poses a challenge in forming long-term strategic compliance plans and creates significant implementation risk when making long-term resource commitments. PWP is adopting a conservative approach in contracting for renewable resources that can deliver energy to Pasadena, with preference for those located within the state.

COUNCIL POLICY CONSIDERATION

The IRP implementation is consistent with the energy efficiency, renewable energy use, and greenhouse gas emissions reductions objectives embodied in the City's Urban Environmental Accords Goals, the U.S. Council of Mayors Climate Protection Agreement, and the General Plan Energy Element. Furthermore, it supports quality of service and facility objectives expressed in the General Plan and the City Council's Strategic Planning Goals.

FISCAL IMPACT

A rate increase of 0.5¢/kWh in power cost is expected in FY 2011. This translates to $2.50 per month increase in the electricity bill for a typical customer using 500 KWh per month. The electricity cost in future years is expected to rise mainly due to increased procurement of costly renewable energy and anticipated carbon related legislation, however, exact amounts and timings can not be estimated at this time due to market and regulatory uncertainties.

Respectfully submitted,

PHYLLIS E. CURRIE
General Manager
Water and Power Department

Prepared by:

GURCHARAN BAWA
Assistant General Manager
Power Supply

Approved by:

MICHAEL J. BECK
City Manager