

**WEST BASIN MUNICIPAL WATER DISTRICT**      **JULY 9, 2003 - Water Resources**  
McDonald, Kwan  
**JULY 28, 2003 - Board Meeting**  
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## INFORMATION CALENDAR

EVALUATION OF COGENERATION POWER PLANT PROPOSALSSUMMARY:

Currently, West Basin is paying approximately \$.12/kWh for Southern California Edison (SCE) power. However, SCE has submitted two proposals, PROACT and the General Rate Case (GRC), to the California Public Utilities Commission that will effectively lower energy costs. If passed as proposed by SCE, the effects of these proposals could drop SCE rates to about \$.0892/kWh as early as August 2003 and rates could increase to \$.095/kWh in 2004. West Basin's consultant, Complete Energy Services, forecasts that if SCE's TOU-8 rates have a starting point of \$.095/kWh in 2004, the rates could stay in the range of \$.095/kWh to \$.100/kWh over the next several years. The net effect would be a decrease of about 20% from the current rate.

The Board approved a study to evaluate the feasibility of on-site power generation. Staff also received two proposals regarding on-site energy generation opportunities. The summary of the energy unit cost of the proposals, the feasibility study, and the projected SCE rate is attached as Exhibit "A".

A summary of the proposals and the feasibility study follows:

Power Innovators Proposal

Power Innovators (PI) submitted to WBMWD a power plant proposal to provide on-site energy generation at WBMWD's Carson and El Segundo facilities by constructing a 45.9 megawatt and 34 megawatt power plant, respectively. The proposed power plants are significantly larger than the projected WMMWD needs and will likely attract negative community reaction. WBMWD's projected power need with the expansion of the West Basin Water Recycling Plant to 100 mgd is only 7.7 megawatts.

In the proposal, PI would agree to incur all capital costs (design and construction) and all operations and maintenance cost to build and maintain the two power generation facilities. In consideration of PI's investment, WBMWD would sign a 20-year agreement to purchase a minimum amount of electricity and thermal energy from PI. The energy would be sold to WBMWD at an initial rate of \$.085 /kWh and incrementally increase to \$.125 /kWh in year nine and in year eleven and thereafter be adjusted according to the Consumer Price Index.

In addition to contract rates paid to PI, WBMWD will be required to pay SCE an exit fee. The exit fee was instituted through AB 117 and allows SCE to recover associated costs for users who choose to purchase energy through another provider. The proposed exit fee is \$.0301/kWh for year 2005 and decreases incrementally to \$.0049/kWh in year 2018.

Additionally, PI also proposes to pass on residual payments to WBMWD for excess power sold to a third party. PI estimates that the excess power will be available 70% of the time. The estimated residual payment to WBMWD is \$.026/kWh. However, the residual payments are not guaranteed.

#### PFR Energy Systems' Proposal

PFR Energy Systems (PFR), in conjunction with Macpherson Energy Corporation, submitted a proposal for a 5.0 MW cogeneration power plant. The proposed facility will recover thermal energy that is typically lost and use the energy to preheat feedwater to the RO plant. This will reduce the pump power required or alternatively decrease the throughput required through the membranes.

PFR proposes to charge a rate of \$.113/kWh (includes the cost of natural gas and the exit fees). The proposed rate is about 6% less than the current rate charged by SCE. However, it is well above the projected SCE rate of \$.095/kWh.

#### Emcor Energy Services Feasibility Study

Emcor Energy Services prepared a "Preliminary Feasibility of Cogeneration and Self-Generation Potential" draft report for WBMWD. The report also evaluates various energy alternatives and identifies the construction and subsequent operation and maintenance (O&M) of an on-site generation facility by WBMWD as the most economical. However, the energy market has somewhat stabilized since the study's publication and this alternative is no longer favorable.

The draft report identifies two cogeneration plant configurations, a reciprocating gas-engine plant and a combined gas/steam turbine plant, with the former being the more economical of the two. The estimated energy cost rates, exclusive of the SCE exit fee, are \$.078/kWh and \$.086/kWh for the gas engine plant and the gas/steam turbine plant, respectively. The costs are inclusive of natural gas, standby charges, annual operations and maintenance, SCE facility cost, and annualized capital costs (assuming a 25 year loan), but not the SCE exit fees.

Including the exit fee and accounting for the increase in the cost of natural gas since the report was submitted, the overall energy cost rate is \$.138/kWh for WBMWD to construct and operate a power generation facility - more costly than the projected SCE rate of \$.095/kWh.

#### Conclusion

The proposal from Power Innovators appears to be the most attractive cogeneration opportunity. However, the proposal does not appear favorable given the projected changes in SCE rates. Since the residual payments are not guaranteed, the energy cost to WBMWD in the initial year will actually be somewhere between \$.089/kWh to \$.115/kWh. Should the residual payments not materialize and the projected SCE rates come into fruition, WBMWD will be paying 20% over the SCE rate.

FISCAL IMPACTS:

Not applicable.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

The item was reviewed at the Water Resources Committee on July 9, 2003 and agendaized to the July 28, 2003 Board meeting as information.

RECOMMENDED MOTIONS:

This item is for information only.

EXHIBITS:

Exhibit "A" - Summary of Energy Cost