Proposed Solar Bond Initiative
Illustrative Bundle of Projects
$100 Million Revenue Financing

Assumptions

1. Illustrative "bundle" of projects comprised of:

   10 MW Photovoltaics ("PV" = Solar)
   30 MW Wind
   Modest energy efficiency retrofits to balance to $100M after bond issuance costs and Interest During Construction (IDC)

2. Capital Costs

   PV estimated at average $5.50/watt
   Modest $5M federal subsidy or grant assumed to buydown to $5.00/watt
   Wind estimated at average $1 million/megawatt
   Energy efficiency estimated at $1 investment per 2 kWhrs/year saved

   All above capital costs based upon actual project experience. SMUD reported an average PV cost of $5.35/watt. The wind and energy efficiency estimates are based upon capital cost estimates for Hetch Hetchy projects presently under development.

3. Debt Service Costs

   The debt service schedule has been imported from a model which considers the timing and magnitude of investments anticipated. The resultant average interest rate is 6.5% p.a. over a 25 year term. For purposes of this illustration, a 50% debt service coverage requirement is presumed to be met via an interest earning account that is pledged to secure the revenue financing throughout the debt service term.

4. Prices of Energy Supply and Transport

   The "utility perspective" cases evaluate project economics on the basis of a range of projected values of annual wholesale power costs:

   a. Conservative estimates are based upon Table TA 1.1 filed by PG&E in its recent (May 2001) filing at the CPUC to support a cost effectiveness evaluation of PG&E's energy efficiency programs.

   b. A higher range of wholesale power costs has also been assessed which takes into account the value of long term power purchase contracts entered into by the state. The rationale for including the cost of power purchased under long term contracts is that they certainly will impact the average cost of both wholesale and retail power for ratemaking purposes.

   Retail electric prices have been approximated by adding 5 cents/kWhr to the wholesale price of power adjusted for long term state contracts. The resultant 11.9

cents/kWhr in CY2003 is reasonable compared to average PG&E retail prices which presently range from 12 to 15 cents/kWhr for most customers.

Transmission and distribution costs are assumed at an average 1.25 cents/kWhr in 2000$, escalating at 1% p.a. throughout the forecast period.

All of the above assumptions are conservative. Wholesale price levels are consistent with present futures markets expectations for the near-term (3 to 5 years) horizon and are based upon an assumption that natural gas prices will return to pre-2000 levels. Retail prices are likely understated, since present PG&E average prices (inclusive of recent surcharges approved by the CPUC) range from 12 to 15 cents per kWhr, and are expected to continue at these levels for at least 10 years in order to cover the excess purchase and financing costs of wholesale power purchases during CY2000 and CY2001. Transmission and distribution rates are estimated at the midpoint of primary and secondary voltage rates. Since wires costs are largely fixed, these prices are assumed to escalate at a low rate of 1% p.a. No adjustment has been made for anticipated increases to transmission costs due to recently proposed changes to the transmission access rate methodology applied by the California Independent System Operator (ISO).

5. Quantity of Energy Produced/Saved

The quantity of energy produced or saved has been estimated on the basis of ballpark planning estimates that are consistent with known project experience. For PV, an average load factor of 18% has been assumed, which is consistent with studies conducted by the Department of Energy of the San Francisco Peninsula's PV potential. Actual energy production will ultimately depend on site and project specific characteristics. A 1/2%/year degradation factor has been applied commencing CY2006, which is consistent with reported experience.

A 30% average load factor is typical for wind projects in the California Central Valley (especially Altamont). The energy efficiency assumptions are based upon an actual portfolio of projects approved in the Mayor's Energy Conservation Account program for FY01/02.

Distributed generation and energy efficiency projects of the type contemplated herein have an additional energy benefit in that they reduce the amount of energy needed to supply a load by the amount of avoided energy losses. Specifically, when power is supplied from a distant generator to a load, energy losses occur in the transport of the power, as well as during transformation to lower voltages. A conservative average 6% avoided energy loss has been applied to the estimated quantity of energy produced or saved for PV and energy efficiency projects only. It is assumed that the wind project would be sited either at Altamont or on the City's East Bay watershed lands, and that transmission losses in delivering that power to loads would still occur.

6. Benefits, Utility Perspective

The quantity of energy produced or saved is valued at projected average wholesale costs, including the value of avoided energy losses (see note 5 above). In addition, the value of avoided costs of power transport (transmission and distribution) for energy that will offset deliveries to end users (equivalent to the combined amount of PV production and energy saved) is calculated.

7. Operating Costs

For conservatism, operating costs are estimated at the high end of actual project experience, i.e. 5 mils per kWhr for PV, 15 mils ($0.015) per kWhr for wind, and $0 for energy efficiency projects. These costs are escalated at CPI, assumed to be 3% p.a.

Maintenance of PV systems is very modest, principally consisting of checking connections and keeping PV panels clean. The one major component of future cost is replacement of the inverters which allow power produced to be exported to the grid when not needed to serve the connected load. Some equipment manufacturers guarantee the inverters for only five years, although actual life estimates reported by SMUD and others range from 10 to as high as 25 years. For purposes of this proforma, we have assumed a mid case 15 year life. According to SMUD, costs on inverters range from $0.50/watt for a residential size inverter (1 kW), to $0.21/watt for a commercial installation (up to 500kW) and a low of $0.18/watt for a large industrial installation (>= 1 MW). For conservatism, we have used an average price of $0.30/watt based on a presumed mix of 10% small (1 kW) installations, 60% medium (500 kW) installations and 30% large (1 MW) installations. This price was then escalated at CPI. This is deemed to be a very conservative approach since industry expects these costs to decline as demand increases.

Other costs are comprised of trustee and program management fees. Program management fees are escalated at 3% p.a. No escalation has been assumed for trustee fees. Debt service costs were calculated by Public Finance and have been imported into this illustrative analysis.

8. Sensitivity Analyses

The Base Case assumptions produced an average cost of approximately $0.11/kWhr, which is competitive from the customer perspective but creates as negative NPV from utility perspective when a 7.5% hurdle rate is applied.

The Worst Case scenario employs reasonable assumptions for actual project economics but $0 in federal or state grants and subsidies. Even at this pessimistic assumption, the illustrative project mix produces a competitive average cost per kWhr (approximately $0.12) when compared with retail prices.

Cases 2 and 3 present potential improvements based on 50% to 100% PV subsidies from the federal and state governments. Under these scenarios, the average cost of energy drops to roughly 9 to 10 cents/kWhr.

Additional improvements are possible through production incentives offered by the state for the first 5 years of new renewable (e.g., wind) projects. However, that potential upside has not been addressed within these sensitivity cases.