8. The Power Policy Division's Output

- **The San Francisco Electric Reliability Project has not met its project milestones or deliverables. Expediting this project's implementation would ensure that the unexpended balance of the $13,266,667 in Williams Energy Company settlement agreement proceeds is used for maximum benefit. Each month less that the four turbines have to be stored is $32,000, plus preventative maintenance and warranty extension costs, which could be used for other project purposes.**

- **The projected benefits of the various energy efficiency and alternative energy initiatives being implemented by the Power Policy Division do not consider foregone revenues for the Hetch Hetchy Enterprise, operational capacity shortfalls, or ongoing operating and maintenance costs. Going forward, cost benefit analyses for such initiatives should include these factors so that the projects' maximum income is recovered.**

- ***The Electricity Resource Plan* (December of 2002) is the City's mandated resources plan and the template for the Power Policy Division's work program. However, the Department has not met the Board of Supervisors' requirements to (a) submit an annual report on its progress towards implementing the plan's goals, and (b) evaluate and update the plan annually. These actions would ensure that this mandated resources plan remains a live document guiding the work of the Power Policy Division within the policy parameters approved by the Board of Supervisors.**

Role and Functions

The Power Policy Division was created in June of 2001 to develop energy efficiency and alternative energy initiatives and advise on risks in the wholesale electricity market. Since its establishment, the Power Policy Division has worked on:

- Developing energy efficiency and alternative energy plans and initiatives. In FY 2000-2001, the Mayor had established the Mayor's Energy Conservation Account with $15 million of unappropriated Hetch Hetchy Enterprise Fund accounts. The Power Policy Division has developed initiatives that are eligible for funding from the Mayor's Energy Conservation Account and from other Federal, State, and local sources. The Power Policy Division has contributed to the development of a more diversified power supply portfolio for the City by concentrating on energy conservation, renewable energy sources, distributed generation, and improved power generation and transmission (through the San Francisco Electrical Reliability Project, which has not yet been implemented for the reasons outlined below). The specific projects that have been completed, or are in progress, are listed in Table 8.2 below.

In addition, there are demonstration projects whose primary purpose is public education.

- Developing community choice aggregation policy which would allow the City to procure electricity from a portfolio of power providers on behalf of citizens currently served by the Pacific Gas and Electric Company. By early 2005, the Board of Supervisors will require a Draft Community Choice Aggregation Implementation Plan and a draft Request for Proposals to select an electric service provider to implement the Final Community Choice Aggregation Implementation Plan.

- Developing energy legislation. For example, the Power Policy Division initiated Assembly Bill 594 that allows the City to participate in net metering and to develop larger solar projects.

- Developing energy policies and plans. For example, the Power Policy Division, in conjunction with the Department of Environment, wrote a ten-year Electricity Resource Plan on the development of new power generation, transmission, and demand-side management resources for the City.

- Developing a Hetch Hetchy Water and Power Business Plan. This project, which has not resulted in a business plan, is discussed in detail in Section 1.

- Renegotiating the 1987 power sales agreements with the Modesto and Turlock Irrigation Districts, which were originally due to, expire in 2015. Following renegotiations in 2004, the long-term power sales agreement with the Modesto Irrigation District now ceases in 2007, thereby reducing by eight years the need to purchase power in volatile wholesale markets to make fixed price sales to the Modesto Irrigation District. The City is currently working towards resolution with the Turlock Irrigation District.

- Renegotiating the 2001 five-year power sales contract with Calpine Energy Services. This was restructured in 2003, reducing the contract by $26,281,000 and reshaping the seasonal delivery of electricity to better match the Department's needs.

As shown in Table 8.1 below, between July 1, 2001 and June 30, 2005, the Hetch Hetchy Enterprise Fund is projected to invest $8,317,582 in Power Policy Division personnel and operating costs.

Table 8.1

The Hetch Hetchy Enterprise Fund Investment in the Power Policy Division FY 2001-2002 through FY 2004-2005

Fiscal Year	Actual Power Policy Personnel and Operating Expenditure of Hetch Hetchy Enterprise Funds
FY 2001-2002	$393,128
FY 2002-2003	1,679,005
FY 2003-2004	2,534,626
FY 2004-2005	3,710,823[1]
Total:	**$8,317,582**

Source: Public Utilities Commission Financial Services

Actual Energy Savings for the City

As a result of the Hetch Hetchy Enterprise Fund's projected investment of $8,317,582 in personnel and operating costs through June 30, 2005, the Power Policy Division has utilized State buy-down, grant, enterprise department, and private company funding for the projects listed in Table 8.2 below which, by June 30, 2005, will generate cumulative projected energy savings for the City in the amount of $6,408,815, according to Power Policy Division staff. The Power Policy Division does not project that these projects will create any new revenues.

[1] The FY 2004-2005 figure is budget only. As of September 30, 2004 (25 percent of the year elapsed), Power Policy had only expended $361,429 or approximately 9.7 percent of the $3,710,283 budgeted. A further $1,004,665 is encumbered.

Table 8.2

Completed Power Policy Projects Generating Energy Savings for the City through June 30, 2005

Project/Location	Project Start Date	Project Completion Date	Gross Cost	Estimated Annual Energy Savings to the City	Cumulative Projected Energy Savings to the City by June 30, 2005
Power Policy Projects Completed					
PUC Southeast Water Pollution Control Plant: co-generation plant	Sept 2000	Aug 2002	$3,065,260	$1,050,000	$2,975,000
DPW Bureau of Building Repair: lighting retrofit	Mar 2001	June 2004	$50,347	$4,940	$4,940
San Francisco General Hospital: lighting system retrofit	July 2001	Jan 2003	$1,258,000	$176,625	$250,219
Moscone Convention Center: solar power and energy efficiency	Sept 2001	Oct 2003	$7,978,612	$402,724	$671,207
City-wide LED traffic signals	Jan 2002	Dec 2003	$2,935,000	$1,208,248	$1,812,372
REC: Golden Gate Park energy efficiency	Feb 2002	June 2003	$76,415	$8,625	$17,250
West Portal Library: lighting project	Apr 2002	Dec 2003	$22,000	$193	$289
San Francisco Housing Authority: refrigerator energy efficiency	July 2002	Aug 2003	$1,062,038	$92,100	$168,850
Moscone Convention Center: West Expansion energy efficiency	June 2003	Apr 2004	$7,000,000	$419,621	$489,558
Subtotal:			**$23,447,672**	**$3,363,076**	**$6,389,685**
Power Policy Projects Currently Underway					
17 DPH health clinics: lighting and controls energy efficiency	Jan 2002	June 2005	$1,059,018	$112,500	$0
7 City-owned garages: energy efficiency	Apr 2004	Dec 2004	$176,832	$38,259	$19,130
PUC Southeast Water Pollution Control Plant: solar power and energy efficiency	Oct 2004	Aug 2005	$3,500,000	$137,522	$0
Subtotal:			**$4,735,850**	**$288,281**	**$19,130**
TOTAL:			**$28,183,522**	**$3,651,357**	**$6,408,815**

Source: Power Policy Division

Table 8.2 indicates that the Power Policy Division's projects are generating a worthwhile payback in that:

- A full year's estimated annual energy savings, in the amount of $3,651,357, represents a 12.96 percent annual return on the projects' cumulative capital investment cost of $28,183,522.[2]

- Projecting the cumulative estimated annual energy savings for projects completed by June 30, 2005 indicates that the Power Policy Division will be responsible for total energy savings of an estimated $6,408,815 by June 30, 2005.[3] This represents approximately 77.1 percent of the Hetch Hetchy Enterprise Fund's projected $8,317,582 investment in Power Policy Division personnel and operating costs by June 30,2005.

- The Power Policy Division further estimates that the projects listed in Table 8.2 have the potential to reduce the City's peak energy demand by an estimated 6,119 kilowatts. The Power Policy Division has not estimated the value of that benefit.

However, the Budget Analyst notes that the projected benefits do not factor in the following:

- Foregone revenues for the Hetch Hetchy Enterprise. Energy efficiency and alternative energy initiatives free up hydroelectric power, which must be sold, to the Modesto and Turlock Irrigation Districts at a lower rate than the Hetch Hetchy Enterprise would otherwise have charged on the open market.[4]

- Less than optimal performance. The Budget Analyst notes that the estimated savings contained in Table 8.2 are, in most cases, based on investment-grade audits and engineering calculations, following the engineering methodology used by the Pacific Gas and Electric Company and accepted by the California Public Utilities Commission, rather than on metering or other monitoring and verification methods. In the case of solar electricity projects at the Moscone Convention Center and the Southeast Water Pollution Control Plant, the energy savings are based upon guaranteed performance figures where the design-build contractor will pay liquidated damages for any performance shortfall during the first five years. However, in some cases, the estimated savings are not met and are not eligible for compensation. For example, the Southeast Water Pollution Control Plant's co-generation plant, which is metered, has had significantly fluctuating capacity and availability over the past two

[2] This full rate of return will not be achieved until after August of 2005, when the last project is due to be completed.

[3] This amount is calculated by pro-rating the annual estimated energy savings by the number of complete months each project will have operated by June 30, 2005.

[4] Department staff advise that the most recent comprehensive analysis of the net value of energy savings to the Hetch Hetchy Enterprise was conducted by Hansen, McQuat & Associates in 1988. The Rocky Mountain Institute undertook a partial review in its December of 2003 *An Energy Resource Investment Strategy*.

years which has meant that the project has not achieved its estimated energy savings. Department staff advise that recent improvements paid for by the co-generation plant's construction contractor are projected to increase operational capacity to approximately 70 - 80 percent, as originally estimated.

- The ongoing operating and maintenance costs for all of the projects listed in Table 8.2.

The Budget Analyst recognizes that the Power Policy Division performs work such as developing policy and legislation and implementing public education initiatives, which do not generate direct energy savings for the City. However, for those projects which do generate energy savings or new revenues, it is important that the Power Policy Division, as it seeks to further diversify its energy efficiency and alternative energy initiatives, carefully assess each new project, taking into account foregone Hetch Hetchy Enterprise revenues and realistic operational capacity projections. In addition to meeting public policy goals, each new initiative also needs to provide an adequate rate of return for its capital investors and to cover its development costs funded by the Hetch Hetchy Enterprise Fund.

Power Policy Division staff advise that, in order to ensure that future energy efficiency and alternative energy initiatives are financially viable, such initiatives should not be developed one at a time. Rather, the Department would need to develop a balanced, diversified portfolio of energy efficiency and alternative energy initiatives in conjunction with the Hetch Hetchy Enterprise's existing hydroelectric power generation. For example, it might be possible to use hydroelectric power generation to (a) support the more intermittent power generated by wind power initiatives, and (b) electrolize water to create oxygen and hydrogen for sale. This will require a detailed planning approach, which takes into account the financial interrelationships between bundles of energy efficiency and alternative energy initiatives.

None of the energy efficiency initiatives to date relate to the Hetch Hetchy water and power system itself. Staff indicated that a proposed energy efficiency project at Moccasin was not successfully implemented due to non-collaboration between the Power Policy Division and the Water Operations and Power Operations Divisions, and funding reprioritization. A system of Hetch Hetchy's size and complexity inevitably has energy efficiency opportunities which would benefit from the Power Policy Division and the Water and Power Operations Divisions working collaboratively.

Monitoring Progress Against the Electricity Resource Plan

After its purchase of the Potrero Power Plant from the Pacific Gas and Electric Company in 1999, Mirant Potrero, LLC proposed expanding the Potrero Power Plant by adding a new 540 megawatt power plant (Unit No. 7) which is more than twice the size of the existing power plant. There was strong community resistance to that proposal and the Board of Supervisors enacted the *Human Health and Environmental Protections for New Electric Generation Ordinance* in May of 2001, which required the Public Utilities Commission, and the Department of Environment to develop an energy resource plan.

After 16 months of input from the public, consultants, and City officials, *The Electricity Resource Plan: Choosing San Francisco's Energy Future* was the result. This plan was endorsed by the Public Utilities Commission, and revised and approved by the Board of Supervisors as the City's mandated resources plan in December of 2002. Department staff characterize this plan as the template for the Power Policy Division's work program since then, particularly as there is no other integrated plan or directive providing a framework for power policy.

The Electricity Resource Plan makes a total of 42 recommendations related to:

- The development of a clean, reliable electricity portfolio (30 recommendations, of which five have specific energy efficiency, generation, or transmission goals).
- Environmental justice (five recommendations).
- Implementation and review (seven recommendations).

In terms of a formal process to monitor progress against *The Electricity Resource Plan* and implementation of the 42 recommendations, Department staff advise that the Department and the Department of Environment participated in a 2004 public hearing convened by the Board of Supervisors Rules Committee. That has been the extent of the Department's formal monitoring against *The Electricity Resource Plan*. This is despite the Board of Supervisors' approval of Recommendation 3.B.7 of *The Electricity Resource Plan*, which states that the Department of Environment and the Public Utilities Commission:

> "… should provide periodic updates on any developments in the regulatory or electricity industry that bear on this plan and should submit a joint annual report to the Board of Supervisors on achievements and challenges of the energy program. The Plan itself should be evaluated and updated annually."

In effect, the Department has failed to comply with its own recommendation.

Delayed Implementation of the San Francisco Electric Reliability Project

The San Francisco Electric Reliability Project consists of the siting, development, construction, and operation of four turbine generators in a new power plant and associated infrastructure. This project results from the City's participation in the settlement agreement negotiated by the State of California with Williams Energy Company related to price gouging and market manipulation which caused price spikes in the wholesale electricity market and shortages of electricity beginning in June of 2000. The State's December of 2002 settlement agreement with Williams Energy Company included restructured long-term gas and electric contracts, a cash settlement, a litigation fund to continue the prosecution of other generators, and the transfer of six natural gas fired General Electric LM 6000 combustion turbine generators. Each turbine purchased by Williams Energy Company in 2001 at a cost of $15 million is capable of generating 48

megawatts of electricity, or sufficient electricity for 8,000 single-family residences. Such turbines are intended to supply electric power for 30–40 percent of the annual hours that a traditional power plant would operate. The turbines have an estimated life of 20 years. Under the settlement agreement, the City received four of the six turbines and $13,266,667[5] to fund the siting and development of electricity generating facilities to house them.

San Francisco Electric Reliability Project Goals

When the City accepted the four turbines in December of 2002, the City intended to:

- Secure a site for the four turbines by December 31, 2003. Under the original settlement agreement, if the City could not meet that date, the California Consumer Power and Conservation Financing Authority could exercise an option to take over title to the four turbines for siting elsewhere, reimbursing the City just $2.5 million for each turbine, or approximately 16.7 percent of their 2002 value of $15 million each. [6] The City would no longer have control over how the electricity generated by the turbines would be used. Although the December 31, 2003 deadline has not been met, for the reasons outlined below, the State has chosen not to exercise its option at this time.

- Construct a proposed power plant using revenue bond funding, certificates of participation, or some other form of public financing. The new 192 megawatt power plant would be operated and maintained by a qualified power plant operator.

- Reduce reliance on inefficient, unreliable, and excessively polluting electric generation at the Hunters Point and Potrero Power Plants by using the new, more efficient, environmentally friendly, and operationally flexible turbines, thereby improving air quality. The Board of Supervisors has approved an agreement with the Pacific Gas and Electric Company (File No. 98-1256) requiring the Hunters Point Power Plant's closure when the California Independent System Operator, the State agency which operates the State's electric transmission grid, determines that it is no longer needed for local electric reliability. This agreement will not be ratified by the

[5] To date, the City has received the first two of seven installments, for a total of $5,333,334. However, the Board of Supervisors has not yet appropriated the January 1, 2004 payment of $2,666,667. While Williams Energy Company has restructured to avoid bankruptcy, there is a risk that they will not meet all of their settlement obligations particularly as its last three settlement agreement payments in years 2008 through 2010 are not secured by a letter of credit. Delays in implementing the San Francisco Electric Reliability Project may increase the City's risk of not receiving the full settlement monies. While the City is eligible to receive surplus funds from the other recipient of the Williams Energy Company settlement agreement (the King's River Project), and such surplus funds are currently estimated at $2,300,000, such surplus funds are also not secured by a letter of credit. If Williams Energy Company defaults on any of their latter payments, the City would have to either cover those development costs itself or fund them through some form of public financing.

[6] The California Consumer Power and Conservation Financing Authority no longer exists. Therefore, some combination of State entities would be responsible for taking back title to the four turbines in the event that the State needed to do so.

California Independent System Operator until either specified transmission system improvements are in place, or the four new combustion turbines are operable.

- Work on energy efficiency programs and distributed power initiatives, in conjunction with transmission line projects, to increase reliability for both the City, which has among the worst electrical system reliability in California, and the regional electric system. Multiple smaller turbines would provide greater redundancy, thereby increasing overall system reliability.

- Comply with the *Electricity Resource Plan* which includes the development of environmentally friendly in-City electricity generation and the closure of aging in-City power plants.

Power Purchase Agreement

To facilitate the siting and funding of the four turbines, on December 9, 2002 the Board of Supervisors authorized the Public Utilities Commission General Manager to execute, by December 31, 2002, a ten year Power Purchase Agreement between the Public Utilities Commission and the California Department of Water Resources to enhance the City's electricity reliability in emergencies (Resolution No. 0830-02). Under the Power Purchase Agreement:

- The City would sell the capacity to generate electric power using the four turbines to the California Department of Water Resources for the first ten years of operation.

- The California Department of Water Resources would provide all the revenues required to construct and operate the proposed power plant over a ten-year period. The City would receive the capacity payment regardless of whether the plant is operated in any given month so long as the plant is available for operation.

- The City has a high level of certainty that it will recover the cost of developing the power plant. Under the Power Purchase Agreement, the City is entitled to all of its reasonable development costs from the $13,266,667 in settlement agreement proceeds whether or not the City ultimately decides to go forward with the project. If the City proceeds with the project, the development costs will be rolled into the financing and the City will recover them unless the Department of Water Resources objects to the overall level of costs (see below). If the City does not proceed with the project, and the turbines are sold, the City is entitled to profits from the sale to cover excess costs. The high level of certainty associated with this type of payment structure would improve the terms under which the City finances construction of the proposed power plant. Department staff advise that most of the financial risks to the City under the Power Purchase Agreement can be passed through to the contracted power plant operator using common industry practices.

- After ten years, the Department of Water Resources' right to the energy produced by the proposed power plant would cease and the City would be free to sell power on the open market or to continue operating the turbines under a future must-run contract, if

they are still required for reliability purposes. Therefore, the City receives the economic benefit of the proposed power plant's power output after the first ten years. It is difficult to define the economic value of that power because there is no firm contract after the first ten years and forward price curves ten years in the future are speculative.

Based on information provided to the Budget Analyst by the Department and the City Attorney's Office, there are certain risks related to cost recovery under the Power Purchase Agreement:

- If the City spends more than the $13,266,667 in settlement agreement proceeds and does not proceed with the project, there could be insufficient money from the sale of the turbines to cover the City's costs in excess of the $13,266,667 in settlement agreement proceeds.

- Costs not deemed "reasonable" for the purposes of reimbursement by the California Department of Water Resources would be the City's responsibility and the City would be unable to recover the related debt service costs.

- The expenses associated with schedule delays, cost overruns, and/or insufficient capitalized interest during construction would be non-reimbursable.

- The City cannot insure against the full risk associated with not meeting the Power Purchase Agreement standards with regard to (a) the percentage of time the proposed power plant is available for use ("plant availability"), and (b) the efficiency with which fossil fuel is converted to electricity ("heat rate"). The City can only partially offset this risk by purchasing insurance and equipment warranties, and ensuring that its operations and maintenance agreement places certain operations risks with the qualified power plant operator selected to operate the proposed power plant.

San Francisco Electric Reliability Project Implementation

Implementation of the San Francisco Electric Reliability Project requires the following steps:

1. Identify appropriate candidate sites, and select the preferred site.

2. Obtain control of the preferred site through long-term lease or purchase, subject to Board of Supervisors approval. Under a November 14, 2003 extension to the Power Purchase Agreement, this was to be achieved by May 1, 2004. The City, however, did not meet this project milestone. The California Department of Water Resources has further extended this project milestone date.[7]

[7] In a May 6, 2004 letter, the California Department of Water Resources advised the City that it was not taking any action on the site control milestone at that time, but that it reserves all rights while the State monitors the City's progress in locating an alternative site.

3. Obtain California Energy Commission determination that the City's Application for Certification is "data adequate" by December of 2003. The Department was unable to obtain control of a site for a new power plant in time. Under a November 14, 2003 extension to the Power Purchase Agreement, the project milestone related to the California Energy Commission' determination of data adequacy was delayed until May 1, 2004. Although the Department met this delayed milestone, the Application for Certification that the Department submitted was in anticipation of obtaining a property owned by Mirant Potrero, LLC[8] at 23rd and Illinois Streets through purchase or eminent domain condemnation. However, due to Mirant Potrero, LLC's bankruptcy, neither option eventuated. The Application for Certification proposed an alternate four-acre site at 25th and Illinois Streets partially owned by the Port and partially owned by MUNI, currently leased to the Western Pacific Railway Company, which remains a live option. The Department currently anticipates that it will reach agreement on the lease or purchase of that site with the Port and MUNI by mid-January of 2005.

4. Finalize the specific terms of the Power Purchase Agreement with the Department of Water Resources to finalize the project financing.

5. Issue a Request for Proposals for an engineering, procurement, and construction contractor, select the preferred contractor, and execute the contract, subject to Board of Supervisors approval. The Request for Proposals is now due to be issued on February 21, 2005.

6. Obtain the necessary Federal, State, and local regulatory approvals related to air, water, and land impacts.

7. Complete gas and electrical interconnection studies.

8. Construct the proposed power plant.

9. Select a qualified power plant operator and execute an operations and maintenance contract with that operator, subject to Board of Supervisors approval.

10. Start up and test the proposed power plant prior to commencing commercial operation. The California Energy Commission expects the proposed power plant to be in service by Spring of 2006. This now appears unlikely as the Department itself does not project taking delivery of the four turbines until February of 2007.

The Power Policy Division receives support from two major consultants, as well as numerous subconsultants. The Department awarded a $1,257,216 contract to PB Power for (a) engineering services and site work necessary to support project licensing and environmental review, (b) procurement specifications for design-build specifications,[9] (c)

[8] Mirant Potrero, LLC is an out-of-state merchant energy company, which purchased the Potrero power plant from the Pacific Gas and Electric Company in 1999.

[9] This project will be the first design-build contract into which the City has entered. The cost is estimated to be $200 million.

a construction management plan, and (d) procurement specifications for a ten-year operations and maintenance contract. The Department also awarded a $2,201,177 contract to CH2M Hill for assistance with the California Energy Commission permitting process for the Potrero site and the California Environmental Quality Act permitting process for the Airport site.

Obstacles to Implementation

The San Francisco Electric Reliability Project is a difficult, controversial initiative which is not fully within the Department's control. The Department cites a number of obstacles:

- The project is attempting to solve area electric reliability problems for the City as well as for the whole peninsula. For example, during periods of peak demand, the City can only import 60 percent of the power required to meet its needs over the existing transmission lines. If the City was not trying to improve the City's grid reliability, the four turbines could be sited at the Airport. This, however, would not address the transmission line bottlenecks at the City's boundary line. Instead, the turbines have to be sited in the City at the end of the radial transmission line arm, to feed generation back down the peninsula's radial transmission line arm. For this reason, the California Independent System Operator has mandated in-City power generation.

- The City has not built power plants for 27 years and is not set up to expedite the development of a proposed power plant. Further, the California Department of Water Resources has not defined what "reasonable" mitigation for a proposed power plant would be. This represents a major unknown financial risk for the City.

- The proposed power plant requires at least four acres of undeveloped, industrially zoned land away from residential areas, and close to the necessary natural gas and electric transmission infrastructure.

- The Department has a poor relationship with certain communities. For example, the Southeast community resists the development of any more major public utility facilities south of Islais Creek given its concerns about the Hunters Point Power Plant and the Southeast Water Pollution Control Plant both sited in its community. The Department has consumed a lot of time to develop a rapport with the Southeast communities' key decision-makers on San Francisco Electric Reliability Project issues.

- The Department did not work sufficiently closely with the Departments of City Planning, Public Health, and Environment which have better grassroots outreach networks to understand the Southeast communities' concerns, garner better public participation, and develop the necessary level of trust.

- The Potrero community has a poor relationship with Mirant Potrero, LLC which, as the owner of the Potrero Power Plant, is the largest Potrero landowner. Mirant

Potrero, LLC was the only Potrero landowner to respond quickly to the City's interest in its property. The Potrero community did not support such a sale without elimination of the proposed new Potrero Power Plant No. 7 and the construction of one plant downtown as a symbolic gesture. The high costs of developing a downtown power plant would have required the City to underwrite a guaranteed return on investment to make the downtown plant economically viable. Department staff advise that this could potentially have exposed the City to several million dollars in liabilities. Despite offering to pay up to $14.2 million for the property purchase and demolition costs of a 4.5 acre site owned by Mirant Potrero, LLC which had only been appraised at $5.88 million,[10] the City's attempt to purchase the Mirant Potrero, LLC property was undermined by (a) Mirant Potrero, LLC's bankruptcy, which also complicated the use of eminent domain condemnation, and (b) a very acrimonious price gouging lawsuit between the State and Mirant Potrero, LLC. As a result, the Department has an Application for Certification for a site it cannot use. (However, as noted above, the Application for Certification proposed an alternate site partially owned by the Port and partially owned by MUNI, currently leased to the Western Pacific Railway Company, which remains a live option.)

- The Port and the Real Estate Division of the Department of Administrative Services did not assist. The Port Commission resisted the use of Port land near Pier 80, arguing that this property had recently been placed in the State land trust assigned for maritime use. Since the first ten years of power generation were already allocated elsewhere under the Power Purchase Agreement, the proposed power plant could not provide free power to the Port in an attempt to qualify as a maritime use. The Dogpatch community opposed the use of Pier 70, the only other identified site on Port land. However, the Port's Central Waterfront Plan does not preclude future industrial uses. Despite the Port Commission's resistance, the Department is currently considering Port land because it is the only quick property option left given Mirant Potrero, LLC's bankruptcy. The City Attorney's Office advises that, on further review, it appears that this project could be consistent with, and enhance, State land trust purposes.

- Privately owned land adjacent to the Port was either too close to residential developments or landowners refused to sell due to concerns about contaminated landfill which the City could force them to clean up.

To address interdepartmental obstacles, the Department has established an Interdepartmental Working Group with representatives from the Mayor's Office, the

[10] The $14.2 million cost included (a) the purchase of the 4.5 acre parcel and demolition of the existing buildings on that property, (b) Mirant Potrero, LLC's suspension of its California Energy Commission Application for Certification for its proposed Potrero Power Plant No. 7, (c) closure of Mirant Potrero, LLC's Potrero Power Plant Nos. 4, 5, and 6 when they are no longer needed for reliability, and (d) granting the City first right of refusal to purchase Mirant Potrero, LLC's remaining 27 acre Potrero Power Plant site in the City. The Budget Analyst notes that this amount did not include any offset for $1,979,241 in delinquent 2000 and 2003 property taxes owed by Mirant Potrero, LLC to the City or Mirant Potrero, LLC's assessment appeal on the subject property.

Board of Supervisors, the City Attorney's Office, the Department of Environment, and the Department of Public Health.

Issues Arising from Delayed Implementation

The Department's failure to implement the original vision has resulted in a number of issues:

- There has been significant mayoral dissatisfaction with the progress made. Due to this dissatisfaction and departmental personnel changes, during the two-year life of the San Francisco Electric Reliability Project to date, management responsibility has been transferred from (a) the Assistant General Manager, Power Policy, to (b) the Infrastructure Development Program Manager, in conjunction with the Mayor's Office of Economic and Workforce Development, to (c) the Director of Wastewater Planning, and now, under the new General Manager, back to (d) the new Director of Power Policy position.

- Due to the failure to site all four turbines within the City, the Department now anticipates that one turbine will be located on a 2.03 acre site at San Francisco International Airport. The Department has entered into a 30-year memorandum of understanding with the Airport for development of the site and sale of emergency back-up electric power.[11] While siting a turbine at the Airport provides back-up power to the Airport, it does not address the transmission bottleneck into the City due to insufficient import capacity in the underground cables at the City boundary line. In-city generation is the most reliable way of dealing with the peninsula's transmission system weaknesses. Nevertheless, the California Independent System Operator has agreed to permit the closure of (a) the Hunters Point Power Plant, if certain transmission line connections which will improve electricity transmission capacity between the City and the peninsula are completed, as well as (b) the largest portion of the Potrero Power Plant, if three of the four turbines are sited within the City and the fourth turbine is sited at the Airport. The California Independent System Operator will permit the closure of the remaining peaking plants at the Potrero Power Plant if certain additional smaller transmission line connection improvements are made. The Planning Department has begun its environmental review of the Airport project. The environmental permit for the Airport site is likely to take the form of a negative declaration.

- The four turbines, originally worth $15 million each, are currently valued at between $9 million and $10 million each, and are being stored in a Houston, Texas warehouse at a monthly storage cost of $32,000 which protects their manufacturer's warranty,

[11] After construction, the Department would pay the Airport $159,210 in rent for the first year, adjustable annually by the Consumer Price Index. The Airport would pay the Department for the power actually provided to the Airport in an amount equal to the Department's actual costs of operating the turbine. The Department's costs in the first ten years related to repair, maintenance, utilities, scavenger services, damages, and losses would be reimbursable from the revenues paid by the California Department of Water Resources under the Power Purchase Agreement. The Airport Memorandum of Understanding is silent on what will happen after the first ten years.

insures them against loss, and guarantees the necessary four acres of high security storage with sufficient equipment to move them as required. By February of 2007, such storage and insurance, in addition to preventative maintenance and warranty extensions, will have consumed $1,967,985 or approximately 14.83 percent of the $13,266,667 in settlement agreement proceeds. Further, if the City does not go forward with the project or fails to do so in a timely manner, the State could take back title to the four turbines for siting elsewhere, reimbursing the City just $2.5 million for each turbine, or approximately 16.7 percent of their 2002 value of $15 million each.

- As at June 30, 2004, Department and other City staff had already incurred direct labor costs of an estimated $1,850,000 on the San Francisco Electric Reliability Project, with an additional $1,496,000 to be incurred during the project's development phase. Currently, these costs are not being reimbursed from the settlement agreement proceeds in order to preserve funds for other expenditures, but they should be reimbursable by the California Department of Water Resources under the Power Purchase Agreement. The Department anticipates exceeding the settlement agreement proceeds significantly. Costs in excess of the settlement agreement proceeds are reimbursable under the Power Purchase Agreement so long as the total project costs are deemed reasonable by the California Department of Water Resources.

Conclusions

Since its inception in June of 2001, the Power Policy Division has performed important power policy, planning, project implementation, and power purchase contract renegotiation work. It is actively working to diversify the City's portfolio of energy efficiency and alternative energy initiatives. The Power Policy Division has responded to Board of Supervisors directives by implementing a number of worthwhile energy efficiency and alternative energy initiatives. However, as the Power Policy Division seeks to further diversify its energy efficiency and alternative energy initiatives, it needs to carefully assess each new project, taking into account foregone Hetch Hetchy Enterprise revenues and realistic operational capacity projections.

In terms of monitoring implementation of *The Electricity Resource Plan's* recommendations, the Department, in collaboration with the Department of Environment, does not meet the requirements of the Board of Supervisors to (a) submit a joint annual report to the Board of Supervisors, and (b) evaluate and update the plan annually.

The San Francisco Electric Reliability Project has not met its project milestones or deliverables. In two years, this project has been the responsibility of four different managers, has received insufficient support from other City departments, and has expended significant amounts of the $13,266,667 in settlement agreement proceeds.

Recommendations

The Public Utilities Commission General Manager should:

8.1 Ensure that the Power Policy Division's work program sets goals for new energy efficiency and alternative energy initiatives in terms of public policy, return on capital investment, and recovery of development costs funded by the Hetch Hetchy Enterprise Fund.

8.2 Ensure that all cost benefit analyses for new energy efficiency and alternative energy initiatives fully take into account foregone revenues for the Hetch Hetchy Enterprise and realistic operational capacity projections.

8.3 Include in the Power Policy, Water Operations, and Power Operations Divisions' work programs a comprehensive energy efficiency project for the Hetch Hetchy water supply and power generation system.

8.4 Develop a process, in collaboration with the Department of Environment, to evaluate, update, and revise the goals of the *Electricity Resource Plan*.

8.5 Submit each year to the Board of Supervisors, in collaboration with the Department of Environment, a joint annual report on progress against the annually updated and revised *The Electricity Resource Plan*.

The Board of Supervisors should:

8.6 If negotiations to obtain control of a site for a new power plant are not successfully concluded by January 31, 2005, require the General Managers of the Public Utilities Commission, the Port, and MUNI, with appropriate support from the Real Estate Division of the Department of Administrative Services, the City Planning Department, the Department of Environment, the Department of Public Health, and the City Attorney's Office, to (a) submit a bi-weekly report to the Board of Supervisors and the Mayor on the status of the site negotiations until a site is successfully secured, and (b) attend a public hearing before a Board of Supervisors committee to outline the interagency activities which are taking place to secure a site.

8.7 Require the Public Utilities Commission General Manager to (a) submit a monthly report to the Board of Supervisors on progress against all of the San Francisco Electric Reliability Project's other project milestones, and (b) attend periodic public hearings before a Board of Supervisors committee to report on progress.

Costs and Benefits

There are no new costs associated with the above recommendations because no additional staff are required to implement them.

The Hetch Hetchy Enterprise Fund would be protected if the development costs it funds for new energy efficiency and alternative energy initiatives are fully recovered. Therefore, it is important that the cost benefit analyses for each energy efficiency and alternative energy initiative fully take into account any foregone revenues for the Hetch Hetchy Enterprise and realistic operational capacity projections.

The Department wants to develop a balanced, diversified portfolio of energy efficiency and alternative energy initiatives in conjunction with the Hetch Hetchy Enterprise's existing hydroelectric power generation. Therefore, developing a detailed planning approach which takes into account the financial interrelationships between bundles of energy efficiency and alternative energy initiatives will assist the Department to more accurately forecast the combined costs and benefits of such initiatives.

Developing an effective energy efficiency initiative for the Hetch Hetchy water and power system itself could increase Hetch Hetchy Enterprise revenues.

Annual evaluation and updating of *The Electricity Resource Plan* would ensure that this mandated resources plan remains a live document guiding the work of the Power Policy Division within the policy parameters approved by the Board of Supervisors.

Expediting the implementation of the San Francisco Reliability Project would ensure that the unexpended balance of the $13,266,667 in settlement agreement proceeds is used for maximum benefit in terms of improving (a) the reliability of the local and regional electricity system, and (b) the City's air quality. Each month less that the four turbines have to be stored is $32,000, plus preventative maintenance and warranty extension costs, which could be used for other project purposes.

A comprehensive energy efficiency project for the Hetch Hetchy water supply and power generation system has the potential to achieve savings.