



● **Board of Directors**  
***Engineering and Operations Committee***

2/9/2010 Board Meeting

8-5

**Subject**

Adoption of Energy Management Policies

**Description**

This action authorizes adoption of Energy Management Policies to: (1) contain costs and reduce Metropolitan's exposure to energy price volatility; (2) increase operational reliability by implementing renewable energy projects; (3) provide a revenue stream to offset energy costs; and (4) move Metropolitan toward carbon neutrality and energy independence. These policies are consistent with Metropolitan's goal to balance long-term reliability with cost control while reducing Greenhouse Gas (GHG) emissions.

**Timing and Urgency**

Adoption of these policies would permit Metropolitan staff to move forward with cost-effective and environmentally responsible programs, projects, and initiatives, which will be brought to the Board for authorization on a case-by-case basis. These policies recognize the upward pressure on costs caused by the expiration of Metropolitan's Hoover power contract in 2017, by evolving power markets, by increased regulatory pressure to reduce GHG emissions, and by the risk of reduced Colorado River hydropower supplies with climate change. Under these risks, the projected electricity costs for Metropolitan's CRA and retail system could increase by 2- to 5-fold by 2020. These policies would enable Metropolitan to take proactive steps toward a goal of energy reliability and cost-effectiveness.

Upon adoption of the Energy Management Policies, staff plans to recommend several projects to the Board for implementation, including addition of up to 10 MW of new solar generation projects at the Weymouth, Skinner, Mills, and Jensen plants; a large-scale renewable energy project that would provide supplemental power for the CRA; and various renewable energy projects related to land lease/revenue stream opportunities at Diamond Valley Lake and other Metropolitan-owned properties.

**Background**

Metropolitan's Board established energy as a core initiative at its 2007 Board Retreat, and subsequently adopted revised Energy Policy Principles in 2008. Since the energy initiative was established, staff has provided a number of energy-related briefings to the Board regarding energy reliability and the challenges Metropolitan faces regarding energy independence. In September 2009, Metropolitan's Board authorized preparation of an Energy Management and Reliability Study (EMRS).

In January 2010, Metropolitan's Board received a board letter detailing the completed EMRS. The EMRS specifically includes:

- A comprehensive analysis of Metropolitan's power consumption and production profile.
- Identification of cost risks associated with projected power industry rate increases.
- Identification of regulatory and cost risks associated with the Global Warming Solutions Act of 2006 (AB 32).

- Identification of relationships between Metropolitan and potential developers and partners, as Metropolitan presses forward with comprehensive energy management initiatives.
- Identification of specific programs and projects to help meet the goals of energy reliability, cost containment, and GHG reductions.

The completed EMRS identifies future actions and serves as a blueprint for an Energy Management Master Plan (EMMP). The EMMP addresses actions and specific components to be undertaken immediately, in the near-term, and over a longer term (up to 20 years) to achieve energy reliability, cost containment, and GHG reduction. Staff has outlined various actions for the EMMP coinciding with three distinct planning phases: immediate (2010-2012), near-term (2013-2020), and long-term (by 2030). These response actions are aimed at controlling overall operational costs and moving Metropolitan towards carbon neutrality by 2030. However, a number of the response actions are contingent on various regulatory, legislative, and market-related trigger points occurring over the three planning phases. These actions are identified below and are also outlined in the EMMP Road Map shown in [Attachment 1](#). These actions would be undertaken upon completion of the appropriate CEQA process for each project on a case-by-case basis.

### **Immediate Actions (2010-2012)**

- Initiate the addition of up to 10 MW of solar power facilities at water treatment plants to reduce behind-the-meter consumption.
- Construct 5 MW Yorba Linda Hydropower Plant conversion to meet all load at Diemer.
- Initiate design of 7-10 MW of small hydro facilities along the distribution system.
- Participate in Southern California Public Power Authority (SCPPA)/SCE/other “evergreen”-type projects/partnerships.
- Proceed with developing detailed strategies for addressing risks associated with the SWP, working cooperatively with the Department of Water Resources to develop a detailed plan to control costs and mitigate regulatory risks.

### **Near-term Actions (2013-2020)**

- Partner on 50-100 MW of renewable energy projects along the Colorado River Aqueduct (CRA) utilizing cost-competitive power-purchase agreements (PPAs).
- Install up to an additional 10 MW of solar at the Skinner plant.
- Install up to 70 MW of solar facilities at: Foothill Power Plant, Etiwanda Power Plant, Diamond Valley Lake, Lake Mathews, Eagle Valley, and Arrow Highway.
- Participate in additional SCPPA/SCE/other “evergreen”-type projects/partnerships.

### **Long-Term Actions (2020-2030)**

- Partner/construct additional 100-200 MW of renewable energy projects.
- Site along the CRA.
- Utilize economies of scale for capital purchase or market competitive PPAs.
- Identify sites which would serve a large load continuously, such as the CRA pumping plants.

### **Proposed Energy Management Policies**

The proposed Energy Management Policies are based on the following overriding objectives for any and all future energy-related projects:

- Contain cost and reduce exposure to energy price volatility.
- Increase operational reliability by providing system redundancy.
- Provide a revenue stream to offset energy costs.
- Move Metropolitan toward carbon neutrality and energy independence.

The specific policies are as follows:

**Regulatory:** Track federal and state greenhouse gas regulations and develop strategies to hedge against price and regulatory risks towards Metropolitan.

**Legislation:** Pursue legislation to increase net metering, feed-in-tariffs, energy wheeling, or other means to allow expansion of renewable energy initiatives.

**Contracts:** Maintain maximum flexibility on existing and future contracts with Hoover and other energy contracts to hedge against cost and regulatory risks.

**Projects/Partnerships:** Pursue cost-effective renewable energy projects and partnerships to hedge against energy price increases, regulatory risks, and move Metropolitan towards carbon footprint reductions.

**Revenue Stream:** Pursue revenue stream renewable energy facilities on operational lands to assist in cost containment, provide reductions in carbon footprint, and provide hedge against renewable portfolio standards and regulations.

**Carbon Footprint:** Develop cost-effective projects and programs to reduce Metropolitan's carbon footprint at the retail level in 2015 by 50 percent, at the retail level in 2020 by 100 percent, and at both retail and wholesale levels in 2030 by 100 percent (carbon neutral).

Metropolitan staff will return to the Board at a later date to report on the recommended actions of the Energy Management Master Plan, including recommendations to move forward with up to 10 MW of new solar generation projects at the Weymouth, Skinner, Mills, and Jensen plants; a large-scale renewable energy project that would provide supplemental power for the CRA; and various renewable energy projects related to land lease/revenue stream opportunities at DVL and other Metropolitan-owned properties.

These Energy Management Policies are consistent with Metropolitan's goals for sustainability by providing an alternative source of renewable energy, enhancing plant reliability, and reducing overall carbon emissions.

## **Policy**

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Submitted per request of the Board

## **California Environmental Quality Act (CEQA)**

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CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA because the proposed action involves continuing administrative activities such as general policy and procedure making (Section 15378(b)(2) of the State CEQA Guidelines). In addition, where it can be seen with certainty that there is no possibility that the proposed action in question may have a significant effect on the environment, the proposed action is not subject to CEQA (Section 15061(b)(3) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not subject to the provisions of CEQA pursuant to Sections 15378(b)(2) and 15061(b)(3) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

## **Board Options**

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### **Option #1**

Adopt the CEQA determination and the proposed Energy Management Policies.

**Fiscal Impact:** None. Cost-effective programs, projects, and initiatives will be identified in future capital investment plan budgets and specific projects will be brought forward to the Board for approval on a case-by-case basis.

**Business Analysis:** This option will support Metropolitan's goals to provide long-term power reliability, help protect against energy market price volatility, and hedge against overall cost risks for operation of Metropolitan's distribution system.

**Option #2**

Adopt alternate Energy Management Policies as directed by the Board.

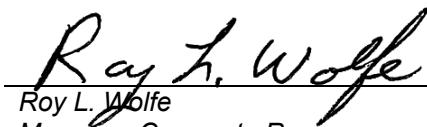
**Fiscal Impact:** Unknown

**Business Analysis:** Depending on the extent of the alternate policies, this option would adjust the level of support for Metropolitan's goals to provide long-term power reliability, help protect against energy market price volatility, and hedge against overall cost risks for operation of Metropolitan's distribution system.

**Staff Recommendation**

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Option #1

  
\_\_\_\_\_  
Roy L. Wolfe  
Manager, Corporate Resources

1/28/2010

Date

  
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Jeffrey Rightlidge  
General Manager

1/28/2010

Date

**Attachment 1 – Energy Master Plan Road Map**

Reference Number: CR12603933

## Energy Master Plan Road Map

### Energy Reliability, Cost Containment, and Carbon Neutrality

PHASE	TIMEFRAME	TRIGGER POINTS		COST IMPLICATIONS to Metropolitan	METHODS OF COST CONTAINMENT	CANDIDATE PROJECTS	ENERGY COSTS & CARBON REDUCTION RESULTS
		Energy / Carbon Related Regulatory Triggers	Energy Market Triggers				
1	2010-2015	<ul style="list-style-type: none"> <li>- AB-32 Regulation becomes applicable to Metropolitan (i.e., must reduce GHG emissions, both direct and indirect)</li> <li>- Renewable Portfolio Standards (RPS) hits 33% by 2020</li> </ul>	<ul style="list-style-type: none"> <li>- Increase in net metering or virtual net metering limitations allowing expansion of renewables and storage on grid</li> <li>- Re-institution of direct access or energy wheeling allowing Metropolitan to develop renewables and sell to market</li> </ul>	<ul style="list-style-type: none"> <li>- Annual energy operating costs could increase 15-20% due to indirect impacts to energy prices related to regulations</li> <li>- CRA energy costs could increase from \$23 M in 2009 to nearly \$30 M in 2015 due to new regulations that affect the mutually beneficial energy banking and transfer provisions of the current SCE Supplemental Energy Agreement</li> </ul>	<ul style="list-style-type: none"> <li>- Construct solar power facilities at WTPs</li> <li>- Construct new hydroelectric facilities within distribution system</li> <li>- Partner with regional energy providers or groups to develop competitive power purchase agreements</li> </ul>	<ul style="list-style-type: none"> <li>- 10 MW of solar at water treatment plants to reduce behind-the-meter consumption</li> <li>- 5 MW Yorba Linda Power Plant conversion to meet all load at Diemer</li> <li>- Construct 7-10 MW small hydro facilities along distribution system</li> <li>- SCPPA/SCE/other "Evergreen"-type Projects/Partnerships</li> </ul>	<ul style="list-style-type: none"> <li>- Annual retail energy costs for water treatment plants and other retail facilities baseline at \$10 M annually (2008 costs = \$9 M)</li> <li>- Achieves a 50% carbon reduction across Metropolitan's purchased retail power supply</li> </ul>
2	2015-2020	<ul style="list-style-type: none"> <li>- Phase 1 trigger points occur: AB-32 Regulation becomes applicable to Metropolitan (i.e., must reduce GHG emissions, both direct and indirect)</li> <li>- RPS hits 33% by 2020 and Metropolitan becomes regulated</li> <li>- Carbon price hits \$60/ton</li> </ul>	<ul style="list-style-type: none"> <li>- Hoover contract ends; loss of up to 5% low-cost Hoover contract</li> <li>- Loss of Supplemental SCE power contract on CRA – Metropolitan supplemental energy costs increase</li> <li>- Cost for larger scale solar or wind power reach parity with retail/wholesale rates due to technological advancements and market pricing reductions</li> </ul>	<ul style="list-style-type: none"> <li>- Overall CRA annual energy operating costs could increase 100% due to Hoover contract reductions, expiration of the Service and Interchange Agreement with SCE, and indirect impacts to energy prices related to regulations</li> </ul>	<ul style="list-style-type: none"> <li>- Construct large-scale solar or wind power facilities at potential sites within Metropolitan's distribution system</li> <li>- Partner with regional energy providers or groups to develop competitive power purchase agreements</li> </ul>	<ul style="list-style-type: none"> <li>- Partner on 100 MW renewable energy projects along CRA utilizing cost competitive PPA's below \$100/MWh</li> <li>- Install additional 10 MW of solar at Lake Skinner</li> <li>- Install 70 MW solar facilities: Foothill Power Plant, Etiwanda Power Plant, DVL, Lake Mathews, Eagle Valley, and Arrow Highway</li> <li>- SCPPA/SCPPA/SCE/other "Evergreen" –type Projects/Partnerships</li> </ul>	<ul style="list-style-type: none"> <li>- Annual retail energy costs for water treatment plants and other retail facilities are contained and grow at normal rate of inflation</li> <li>- Annual energy costs along CRA are reduced by 10-20% from projected post-2017 costs</li> <li>- Achieves a 100% carbon reduction across Metropolitan's purchased retail power supply</li> </ul>
3	2020-2030	<ul style="list-style-type: none"> <li>- Phase 1 and 2 trigger points occur: AB-32 Regulation becomes applicable to Metropolitan (i.e., must reduce GHG emissions, both direct and indirect)</li> <li>- RPS Standards hit energy industry: 50% by 2030, 80% by 2050</li> <li>- Wholesale electricity hits \$200/MWh</li> <li>- CO2 price hits \$160/ton</li> </ul>	<ul style="list-style-type: none"> <li>- Reduction of Hoover power supply due to climate change, i.e., water supply cannot drive hydroplant turbines at full load</li> <li>- GHG emissions from artificial lakes and reservoirs included in cap-and-trade; price of Hoover/Parker power increases</li> </ul>	<ul style="list-style-type: none"> <li>- Overall CRA annual energy operating costs increase dramatically</li> </ul>	<ul style="list-style-type: none"> <li>- Construct large-scale solar or wind power facilities at candidate sites along Metropolitan's CRA</li> </ul>	<ul style="list-style-type: none"> <li>- Partner/construct 100-200 MW renewable energy projects along CRA utilizing economies of scale for capital purchase or market competitive PPA's</li> <li>- Candidate sites would serve large load/consuming pumping plants 24/7</li> </ul>	<ul style="list-style-type: none"> <li>- Annual wholesale and retail energy costs are contained and remain constant</li> <li>- Achieves a 100% carbon reduction across Metropolitan's entire purchased power supply</li> </ul>