



Testimony

Provided By

Jon C. Lambeck, Manager of Power Resources

Metropolitan Water District of Southern California

On

*Investment in Small Hydropower: Prospects of Expanding Low-Impact and Affordable Hydropower Generation in the West*

Before the

U.S. House of Representatives  
Committee on Natural Resources  
Water and Power Subcommittee

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Madam Chair and Subcommittee Members:

### **Introduction**

Thank you for providing the Metropolitan Water District of Southern California (Metropolitan) the opportunity to testify regarding investment in small hydropower and the prospects of expanding low impact and affordable hydropower generation in the West . I am Jon Lambeck, Manager of Power Resources at the Metropolitan Water District of Southern California. My responsibilities include the management of the energy and environmental attributes produced from Metropolitan's 16 small conduit hydropower generators. In addition to this testimony, information developed earlier this month in response to an inquiry from the Subcommittee regarding Metropolitan's experience with the development of small hydropower generation has also been submitted for the record.

Metropolitan is the nation's largest provider of treated drinking water. Each day during a normal year, it moves on

average more than 1.6 billion gallons of water through its distribution system, delivering supplies to 26 member agencies. Those agencies, in turn, sell that water to more than 300 sub-agencies or directly to consumers. In all, 19 million Southern Californians rely on Metropolitan for some or all of the water they use in their homes and businesses.

Since Metropolitan's inception over 75 years ago, hydropower has played a key role in its success of providing water to the southern California coastal plain. As one of the largest contractors for power from the Hoover Dam, Metropolitan has used that energy from the start of its water operations in 1939 to supply over one-half of the power needed to move Metropolitan's allocation of Colorado River water to southern California. More recently, beginning in the late 1970's, Metropolitan has developed 16 small conduit hydropower generators throughout its water distribution system. These generators annually produce an average of 350,000 megawatt-

hours of energy.

### **Incentives**

Metropolitan developed these hydropower generators with its own funds with little or no incentives helping to offset the cost. The generators were placed at locations on the water distribution system where pressure control structures already existed. The installation of generators at these sites, typically where the water pipelines reach the bottom of a hill, allowed the necessary dissipation of energy to be accomplished with a turbine, rather than a large valve. Thus, the energy in the flowing water is used to produce environmentally benign electricity instead of simply being wasted in an energy dissipater. The economic justification of the development of these new generators was based on the sale of the energy to local utilities.

Due to the regional and national emphasis on the development of renewable, green energy and Metropolitan's own goal to develop cost-effective renewable energy while reducing its

carbon footprint, Metropolitan is re-evaluating its water distribution system for the potential of installing additional hydropower generators. The economics of these projects are once again being driven by the estimated revenue from the sale of the electricity to local utilities. However, given the possibility of green house gas regulations, Metropolitan is also looking at the potential to use the energy itself. The evaluations have identified three sites for detailed economic analysis and preliminary design.

To determine the economic feasibility of new generator installations, Metropolitan assumes the energy produced will carry a higher value since it will meet the criteria for renewable energy. However, even with the expected higher revenues from the sale of renewable energy, without incentives the breakeven point can occur too far into the future to make the project viable. In its analysis, Metropolitan assumes there will not be any incentives available to help defray the cost of the new facilities. Most renewable incentives have been developed to benefit for-profit

organizations by providing reductions in tax payments.

Metropolitan, like most water agencies, is a not-for-profit organization and does not benefit from incentives based on tax issues.

### **Barriers**

Over the past 30 years of Metropolitan's development of small hydropower generators, the regulatory environment for hydropower generators has changed to become more complex and burdensome. For example, all of Metropolitan's generators are classified as small conduit hydro. They were installed in existing water conduits or pipelines and simply redirect water to a power generating turbine instead of a pressure dissipating valve. However, even though the Federal Energy Regulatory Commission has always been expeditious in granting the small conduit exemptions from the full hydropower license requirements requested by Metropolitan, there are still inspections and reporting requirements that are burdensome and time consuming.

Metropolitan sees little value gained from these activities. Additionally, for small water agencies that have little or no experience with the power industry, such complexities could easily dissuade them from installing hydropower generators on their own conduits and pipelines, thus foregoing an opportunity to increase the production of renewable power that has no impact on the environment.

Another change has been the creation of Regional Transmission Organizations (RTO). RTOs have promulgated their own set of regulations and requirements for generators. Many times the regulations make no distinction for size and ability to impact the power system. For example, a water agency that wants to use a small, one megawatt hydropower generator to extract some of the energy from the water flowing through its pipelines may be required to report power schedules and projections as if it were a multi-hundred megawatt natural gas fired generator. These types of one-size-fits-all regulations may

simplify life for the RTO but they hinder and discourage small hydropower generator development that water agencies may be contemplating. Many water utilities have little experience in energy generation and may decide the regulatory burdens and risks are too great to proceed with the installation of a hydropower generator.

### **Federal Role**

Metropolitan believes the Federal government can play a very important role in assisting the development of small hydropower generators. This assistance could be provided as follows:

- Remove the size limitations for conduit hydropower licensing exemptions.
- Treat all hydropower generation as renewable.
- Eliminate regulations and reporting requirements that do not provide added value.

- Provide grants and other incentives for hydropower generator development that can be used by not-for-profit agencies that do not pay taxes.
- Work with state and regional entities to eliminate redundant or unnecessary regulations related to the development of new hydropower generators.
- Undertake or support studies to develop and improve the design and applicability of turbines for small hydropower generators.

## **Conclusion**

In conclusion, Metropolitan believes there are opportunities to expand the number of small hydropower generators, especially at existing water distribution facilities. Focused incentives and appropriate regulations will facilitate the identification of potential generator sites and result in the installation of new hydropower generators. The renewable energy produced through the more

expansive use of existing water distribution infrastructure and approved water diversions will replace energy from fossil fueled generators and assist in the reduction of green house gasses.