

## **Appendix D. Renewable Portfolio Standard**

### **D.1 Overview**

LADWP has historically maintained that its major objectives concerning integrated resource planning are; 1) providing reliable service to its customers; 2) remaining committed to environmental leadership; and 3) maintaining a competitive price.

Since its 2007 IRP, LADWP has made great strides towards achieving the 2010 goal of increasing its supply of electricity from “eligible” renewable resources to 20 percent, measured by the amount of electric energy sales to retail customers. It is expected that LADWP will meet the 20 percent goal for calendar year 2010.

There has been substantial progress from the goals of a few years ago to the current directed goal of 20 percent by 2010. The complete 2004 and 2007 Renewables Portfolio Standard Framework are included as Reference D-1 and D-2.

This 2010 IRP documents how LADWP expects to achieve and maintain approximately 20 percent renewable energy and describes the process for LADWP’s continuing commitment to increase the renewable energy goal to potentially 35 percent by 2020. Additionally, LADWP will continue to encourage voluntary contributions from customers to fund renewable resources above the stated Renewable Portfolio Standard (RPS) goal, as part of its Green Power for a Green LA Program (GREEN).

### **D.2 Renewable Energy Requests for Proposals**

To help meet the renewable energy goals for the GREEN Program and the RPS policy, LADWP has issued four major Request For Proposals (RFP) for renewable energy projects: January 2001, June 2004, January 2007, and March 2009. LADWP performed detailed technical and economic analysis of the proposals on a least-cost, best-fit basis. This approach considered factors such as cost, technical feasibility, project status, transmission issues, and environmental impact.

#### **D.2.1 2001 Renewable RFP**

In response to the 2001 RFP, a total of 21 projects were proposed. The 120 megawatts (MW) Pine Tree wind project met LADWP’s renewable, economic, technical and least-cost, best fit criteria. The Pine Tree wind project is located in the Tehachapi area; LADWP owns and operates this facility. This project was put in-service in June 2009. The Pine Tree wind farm is being expanded (ten new wind turbines) to 135 megawatts and will be in-service by 2011.

#### D.2.2 2004 LADWP Renewable RFP and the 2005 SCPPA Renewable RFP

In June 2004, LADWP issued another RFP with the intent of securing an increased portion of its power requirements from renewable resources. The goal of LADWP's 2004 RFP was to obtain about 1,300 gigawatts hours (GWhs) per year of renewable energy per year to meet the then RPS interim goal of 13 percent by 2010. A total of 57 distinct proposals were received, covering nearly all types of renewables, although wind and geothermal represented the largest share of proposed energy. Most of the proposals were from new California projects, with only a few actually located in Los Angeles. The proposals offered a mix of power purchase and ownership options.

In 2005, the Southern California Public Power Agency (SCPPA) also issued an RFP for renewable resources, in which LADWP is participated.

LADWP was assisted in the evaluations of the 2004 LADWP RFP proposals by two independent entities to ensure fairness and consistency during the evaluation process. This team evaluated proposals through a structured process consisting of two phases of evaluation. The Phase 1 evaluation comprised a Completeness & Requirements (C&R) screening, a Technical & Commercial (T&C) evaluation and an economic assessment. Proposals short-listed in the Phase 1 evaluation were evaluated in greater detail in the Phase 2 evaluation. The Phase 2 evaluation compared a calculated Net Levelized Cost (NLC) for each proposal. The NLC of each proposal is equal to the Levelized Busbar Cost of energy in units of \$/MWh less the Avoided Energy and Capacity Costs, and adding the Levelized Transmission Costs to cover wheeling, losses, transmission upgrades, etc.

Five contracts for renewable energy resulting from the 2004 and 2005 RFPs have been entered into, which provide 1,179 GWhs/yr of renewable energy from landfills, small hydro and wind.

#### D.2.3 2006 SCPPA and 2007 LADWP Renewable RFPs

In 2006 SCPPA issued an RFP for renewable resources, in which LADWP is participated.

In January 2007, LADWP issued another RFP with the intent of obtaining approximately 2,200 GWhs of renewable energy per year to meet the RPS goal of 20 percent by 2010. A total of 59 distinct proposals were received, covering wind, solar thermal, solar photovoltaic (PV), geothermal, and biomass renewable technologies. The proposals offered a mix of power purchase and ownership options.

Three contracts for renewable energy resulting from the 2006 and 2007 RFPs have been entered into, which provide 424 GWhs/yr of renewable energy from wind and small hydro projects. Several other proposals that were received are currently being negotiated.

#### D.2.4 2008 SCPPA and 2009 LADWP Renewable RFPs

In 2008 SCPPA issued an RFP for renewable resources, in which LADWP is participated.

In March, 2009, LADWP issued a fourth RFP for Renewable Resources. The intent of this RFP was to obtain a sufficient amount of renewable energy per year to achieve the RPS goal of 20 percent by 2010 and 35 percent by December, 31, 2020.

Two contracts for renewable energy resulting from the 2008 RFP have been entered into, which provide 834 GWh/yr of renewable energy from wind projects. Several other proposals that were received are currently being negotiated.

### D.3 Renewable Project Strategy

LADWP (and SCPPA) has increased its renewable energy through successful project development and completed agreement negotiations with multiple developers and project entities resulting from the above described RFPs. Existing renewable projects that supply LADWP are geographically diverse; wind energy comes from the ridges of the California Tehachapi Mountains, the north-central Oregon hills, southern Washington Columbia River Gorge area, the Milford Valley of Utah, and Southwestern Wyoming. Planning for future renewable energy will continue this emphasis on geographic diversity, as well as technology diversity.

The variety of renewable energy projects and technologies leads the Power System to have the dynamic capability to integrate renewable energy reliably. As described in other sections of the IRP, LADWP will maintain its Balancing Authority responsibility by addressing system issues such as reserve sharing, reserve commitments, system voltage support, spinning reserves, and existing and future quick response combustion turbines response units, etc.

This IRP describes several fundamental principles for the RPS progression from the current 20 percent renewable energy to a potentially higher goal of 35 percent goal by 2020. Principles and Issues affecting the future of the RPS plans are discussed below:

#### D.3.1 Issues

- The “Ramp Rate”, i.e., the annual rate of progress from 20 percent to 35 percent renewables, will be subject to several factors. The time frame is 10 years, which would equate to a constant ramp of 1.5 percent per year. However, the projected ramp rate is not a straight line, but rather varies from year to year depending on factors both external and internal to the LADWP. These factors include LADWP fiscal constraints, renewable energy technology improvement over time, renewable energy pricing, LADWP system integration limits, and transmission constraints, both in the LADWP systems and regionally.

- Steady investment in renewable resources is required to maintain a 20 percent RPS between 2010 and 2012 and to ramp to a 33 percent RPS between 2013 and 2020. There are several reasons for this path forward: Between 2010 and 2012, the projects maintaining the 20 percent RPS will become fully integrated into the system; reflecting 2010 economic conditions and allowing time for pricing adjustments and efficiencies of certain renewable industries such as solar PV to reach the marketplace. The constant rate from 2013 to 2019 is about a 2 percent per year annual increase. Of course, all of this strategy is dependent on adequate funding.
- Transmission limitations in several regions are constraining development activities. These constraints are being studied at regional, statewide, and Western Electricity Coordinating Council (WECC) levels and potential federal and state legislative actions will affect transmission availability. Further resource decisions are dependent on transmission availability and cost.
- Greenhouse Gas (GHG) and other Climate Change regulatory and legislative issues are pending. Determination of Cap and Trade methodology and market mechanism plans will influence RPS decisions.
- Within the overall RPS plan, decisions as to specific projects, technologies, operational strategies, and project financial structures, will be made as the marketplace and regulatory environment change.

### D.3.2 Principles

Future renewable projects will be strategically obtained with the following principles.

1. Geographic diversity is important to maintain and enhance power system reliability.
2. The use of existing LADWP assets such as transmission lines, land, and existing generation resources should be maximized.
3. LADWP will pursue multi-faceted development with adequate back-up strategies to handle project delays, project failures, reduced generation output, and operation or maintenance impacts.
4. Projects shall be targeted to specifically meet the Power System/Renewables policy objectives.
5. Flexible RPS goals will be established to address the variable nature of renewable energy while conforming to applicable state and federal requirements
6. Ownership, operation, and maintenance are core objectives to maintain power system reliability and cost stability. The Power System is interested in owning projects with proven technology.

7. Operation and maintenance (O&M) management is a key criterion in clustering renewable projects. Keeping projects in close proximity would reduce O&M costs due to economies of scale and personnel efficiencies.

### D.3.3 Balancing Renewable Resources

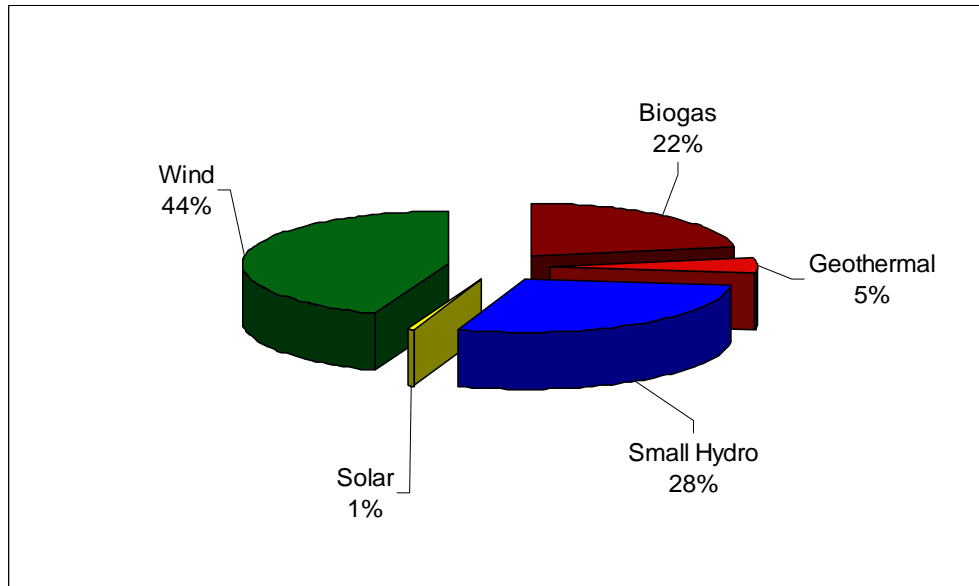
Several of these principles may be overlapping or even conflicting. For example, clustering of renewable projects would decrease O&M expenditures, but too many projects in an area will not meet the needs for geographic diversity. Also, ownership goals may impact the project costs and immediate availability. Obtaining tax credits and/or grants may necessitate the need for developers to own a project for a certain number of years (typically 7-10 years) to capture tax advantages; thereby lowering the ultimate cost to LADWP.

Subject to further studies, given the wind and solar projects coming on-line, limitations on the percentage of intermittent resources may be required. It is possible that no more than 15-20 percent intermittent energy can be ultimately integrated in the current electric system. There may be more stringent limitation in certain resource areas, or along certain transmission systems. The total amount of intermittent energy obtained will not be increased beyond current levels unless studies demonstrate that system integration issues can be handled.

Wind, as shown elsewhere in this IRP, is a volatile renewable energy resource. LADWP wind forecasting tools and meteorological analysis capabilities are recommended to be enhanced to provide efficient integration of wind.

Similar studies will be required for solar projects coming on line in the next few years, and limitations of the percentage of solar will be required. Photovoltaic solar systems can have dramatic voltage changes, resulting from passing cloud cover and/or storms. Large installations of solar PV will likely need to be limited within a geographical area unless it is coupled, with solar thermal systems or energy storage systems.

The projected renewable energy mix of 2010 is shown on Figure D-1



Subject to change due to negotiations and construction schedules

**Figure D-1: 2010 Renewable Energy Mix**

#### D.3.4 Tradable Renewable Energy Credits (TRECs)

In March of 2010, the California Public Utilities Commission (CPUC) authorized investor owned utilities (IOUs) the use of tradable renewable energy credits (TRECs) in the RPS program. Renewable Energy Credits (RECs) are a certificate of proof that one unit of renewable energy has been generated and are used as an accounting tool to prove a utility has complied with the RPS program.

Previously, IOUs were exclusively required to purchase RECs “bundled” with their associated energy. The use of TRECs for RPS compliance provides more flexibility for IOUs to comply with RPS mandates. TRECs may be traded for up to three years before being committed to use for RPS compliance.

Because the LADWP is a municipal utility, its TREC policy is governed by its Board of Commissioners. Currently, the LADWP does not engage in the trading of RECs.

## **D.4 Transmission of Renewable Energy**

California and many of the western states contain a variety of resources (wind, solar, geothermal, and other “eligible” resources previously defined in the RPS Policy) that can be developed to ultimately generate electricity. However, the current transmission system was not primarily designed with these natural resources in mind.

Even with the substantial existing transmission system owned by LADWP, and the other transmissions systems in California, there is only a limited amount of transmission lines to many of the potential renewable resource locations. In order to gain access to these sources of renewable energy, LADWP is planning on building additional transmission lines and expanding the capabilities of several existing lines. These projects include:

1. Barren Ridge Renewable Transmission Project (BRRTP) - Transmission access and transmission line upgrades are needed to accommodate proposed wind projects in the Tehachapi area and solar thermal projects in the Mojave Desert, which total nearly 1,000 MW. The initial project was the construction of the Barren Ridge substation which supports the 135 MW Pine Tree Wind project. This substation interconnects with LADWP’s existing 230 kV Inyo-Rinaldi transmission line (which was built to gain access to the renewable hydro-generated energy from LADWP’s aqueduct system in the Owens Valley). The Inyo-Rinaldi transmission capacity needs to be increased in order to accommodate additional renewable energy projects. A full Environmental Impact Report (EIR) process is currently underway on this project.
2. Related to the BRRTP project, the potential Owens Valley Solar projects may require further upgrades to the Inyo-Barren Ridge segment of this transmission line and a generation tie-line into the project area. Depending on ultimate solar build-out in the Owens Valley, additional new transmission may be required.

## **D.5 Funding the RPS**

For LADWP to develop a responsible and prudent renewable energy policy, it must balance environmental objectives such as fuel diversity, energy efficiency and clean air against its core responsibility to provide and distribute safe, reliable, and low-cost energy to its customers. That means developing a RPS that ensures LADWP’s continued financial integrity and striving to mitigate the financial impact on retail customers.

The financial impact of meeting a 35 percent RPS goal will vary depending on the mix of resource types and associated costs. Generally, renewable energy costs more than traditional energy sources such as natural gas and coal. However, a diversified energy portfolio, including a larger mix of renewables, may also reduce the risk of price spikes due to fuel supply shortages.

## **D.6 Other LADWP Renewable Projects**

LADWP has several additional projects that are in various stages of development. LADWP also has short-listed additional renewable energy projects that have been offered in response to past LADWP's Request for Proposal (RFPs) or SCPPA RFPs. These shortlisted projects and other proposals from upcoming RFP's will be used to select future projects, subject to the criteria enumerated within this section.

The eligibility of wind, solar, and geothermal projects to count toward renewable energy targets are well understood. LADWP has also procured biogas and is considering the use of certain types of biomass. Energy generated from this category is RPS-eligible.

### **D.6.1 Biogas**

The current California Energy Commission (CEC) Overall Program Guidebook of January, 2008 defines biogas as “gas, such as biogas or digester gas, that is derived from the anaerobic digestion of agricultural or animal waste” and biomass as “any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, biosolids, sludge derived from organic matter, and wood and wood waste from timbering operations.”

In keeping with capturing the intent of the California legislature to increase use of renewable fuels, the LADWP amended its RPS policy when the CEC issued its third edition of the Guidebook in January 2008. Language from the CEC Guidebook states, “RPS-eligible biogas (gas derived from RPS-eligible fuel such as biomass or digester gas) injected into a natural gas transportation pipeline system and delivered into California for use in an RPS-certified multi-fuel facility may result in the generation of RPS-eligible electricity.” The CEC also considers landfill gas (LFG)—gas produced by the breakdown of organic matter in a landfill—a renewable fuel.

The LADWP's gas-fired generating units capable of burning a mixture of biogas and conventional natural gas fall under the CEC multi-fuel designation. The CEC Guidebook states, “...only the renewable portion of generation will count as RPS eligible, and only when the Energy Commission approves a method to measure the renewable portion.”

Pursuant to the CEC Guidebook, the LADWP calculates the amount of RPS-eligible electricity produced at its gas-fired generating units by multiplying the total generation of the facility by the ratio of the quantity of biogas used to the quantity of total gas used by the facility. Both the energy generated and the quantity of gas used must be measured on a monthly basis.

The LADWP currently produces RPS-eligible energy derived from biogas/biomass. Digester gas produced at the Hyperion Wastewater Treatment facility is piped to the adjacent Scattergood Generating Station, where it is used to produce RPS-eligible energy. Additionally, the LADWP procures biogas/biomass-derived renewable energy via gas-fired microturbines located at several landfills throughout Los Angeles.

The LADWP currently holds short-term contracts with developers to purchase LFG. Under these contracts, the LADWP obtains LFG from several landfill sites located outside California. LFG

produced by the landfills is scrubbed and filtered to pipeline grade and injected into the interstate natural gas pipeline system for delivery to the LADWP's most efficient gas-fired generating units.

#### D.6.2 Municipal Solid Waste

The current CEC criteria set forth several conditions for RPS-eligibility of municipal solid waste (MSW) conversion facilities:

- The facility uses a two-step process to create energy whereby in the first step (gasification conversion) a non-combustion thermal process that consumes no excess oxygen is used to convert MSW into a clean burning fuel, and then in the second step this clean burning fuel is used to generate electricity.
- The facility is located in-state or satisfies certain out-of-state requirements.
- The technology produces no discharges of air contaminants or emissions, including greenhouse gases as defined in Section 42801.1 of the Health and Safety Code.
- The technology produces no discharges to surface or groundwaters of the state.
- The technology produces no hazardous wastes.
- As much as possible, the technology removes all recyclable materials and marketable green waste compostable materials from the solid waste stream before the conversion process.
- The facility certifies that any local agency sending solid waste to the facility diverted at least 30 percent of all solid waste it collects through solid waste reduction, recycling, and composting.

The LADWP currently does not procure energy from any MSW conversion facility, but may consider projects that meet all CEC criteria.

### **D.7 Power Content Label**

In 1997, Senate Bill 1305 was approved, which required Energy Service Providers (ESP) to report to their customers information about the resources that are used to generate the energy that they sell. A form, called the Power Content Label, would be used for this purpose, which would also provide a common reporting method to be used by all ESPs.

In addition, the 2002 Senate Bill 1078 established California's Renewable Portfolio Standard (RPS) which included both a requirement for electric utilities to report annually to their customers the resource mix used to serve its customers by fuel type, and to report annually to its customers the expenditures of public goods funds used for public purpose programs. The report should contain the contribution of each type of renewable energy resource with separate categories for those fuels considered eligible renewable energy resources, and the total percentage of eligible renewable resources that are used to serve the customers energy needs.

LADWP's 2009 Power Content Label is shown in Table D-1. As LADWP has two separate renewable programs, the RPS policy and GREEN, both of these programs are reported on the Power Content Label.

**Table D-1: LADWP's 2009 Power Content Label**

<b>Energy Resources</b>	<b>LADWP Power 2009</b>
<b>Eligible Renewable****</b>	<b>14%</b>
-Biomass & waste	1%
-Geothermal	2%
-Small hydroelectric	5%
-Solar	<1%
-Wind	6%
<b>Coal</b>	<b>39%</b>
<b>Large Hydroelectric</b>	<b>7%</b>
<b>Natural Gas</b>	<b>31%</b>
<b>Nuclear</b>	<b>9%</b>
<b>Other</b>	<b>&lt;1%</b>
<b>TOTAL</b>	<b>100%</b>

## **Reference D-1 – 2004 Renewables Portfolio Standard Framework:**

### **RENEWABLE PORTFOLIO STANDARD**

Resolution - WHEREAS, it is the number one priority of the Los Angeles Department of Water and Power (DWP) to provide reliable and affordable energy to its customers which many rely on; stability and affordability are vital to the economy and job development of the city; and

WHEREAS, providing affordable energy is even more critical to low income families; and

WHEREAS, the City has historically supported the preservation of local control and strong opposition to any form of state or federal jurisdictional encroachment efforts, this longstanding philosophy served to protect the City and its ratepayers during the State's energy crisis when California IOU's were forced to rely on spot market energy purchases to meet electricity demand following divestiture of substantial portions of their generation capacity as required by the State's deregulation legislation (i.e. AB 1890); and

WHEREAS, DWP launched the Green Power for a Green L.A. Program in May 1999, the goals of the Program were to reduce the use of fossil fuels for electricity generation by replacing them with new renewable sources such as solar, wind, geothermal and bio mass.

WHEREAS, most renewable energy production markedly reduces the emission of air pollutants ultimately improving air quality while also lowering the City's contribution to global greenhouse gases; and

WHEREAS, given the continuing public health and environmental problems associated with air pollution as well as the possibility of future energy shortages and prices spikes, it is in the environmental and economic interest of the City to increase the amount of energy that LADWP generates from renewable sources; and

WHEREAS, public benefit programs, such as demand-side management programs, are integral to the City meeting its energy demands and to the Department of Water and Power (DWP) achieving its strategic objectives; and

THEREFORE, BE IT RESOLVED, that with concurrence of the Mayor, by adoption of this resolution, the City Council request the Board of Water and Power Commissioners, by the end of 2004, adopt a Renewable Portfolio Standard of 20 percent renewable energy by 2017 setting applicable milestones to achieve this goal.

BE IT FURTHER RESOLVED that the Los Angeles Department of Water and Power (LA DWP) incorporate this Renewable Portfolio Standard into all future energy system planning. It should also be reflected in the Integrated Resource Plan now being prepared, to identify actions to be taken in the next year toward increased renewable energy procurement and/or development, and to instruct the DWP to include in its report on RPS the impact on the local economy and jobs [as amended].

## Reference D-2 – LADWP Renewables Portfolio Standard Policy:

### City of Los Angeles Department of Water and Power Renewables Portfolio Standard Policy As Amended April 2008

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#### 1. Purpose:

In 2002, California Senate Bill 1078 (SB 1078), an act to add Sections 387, 390.1 and 399.25, and to add Article 16 (commencing with Section 399.11) to Chapter 2.3 of Part 1 of Division 1 of the Public Utilities Code, was passed establishing a 20 percent Renewables Portfolio Standard (RPS) for California investor-owned utilities. SB 1078 provides that each government body of a local publicly owned electric utility shall be responsible for implementing and enforcing a RPS that recognizes the intent of the Legislature to encourage renewable resources, while taking into consideration the effect of the standard on rates, reliability, and financial resources and the goal of environmental improvement.

On June 29, 2004, the Los Angeles City Council passed Resolution 03-2064-S1 requesting that the Board of the Los Angeles Department of Water and Power Commissioners (Board) adopt an RPS Policy of 20 percent renewable energy by 2017, setting applicable milestones to achieve this goal, and incorporate this RPS into a future Integrated Resource Plan (IRP).

On May 23, 2005, the Los Angeles Department of Water and Power (LADWP) Board adopted a LADWP RPS Policy that established the goal of increasing the amount of energy LADWP generates from renewable power sources to 20 percent of its energy sales to retail customers by 2017, with an interim goal of 13 percent by 2010. On June 29, 2005, the Los Angeles City Council approved the LADWP RPS Policy.

On April 11, 2007, the LADWP's Board amended the LADWP RPS policy by accelerating the goal of requiring 20 percent of energy sales to retail customers be generated from renewable resources by December 31, 2010. In addition, the amended policy established a "Renewable Resource Surcharge," and also established renewable energy procurement ownership targets.

This RPS Policy, as amended April 2008, represents the LADWP's continued commitment to renewable resource supply as requested by the City Council Resolution 03-2064-S1 and is consistent with the provisions of SB 1078 (2002). It also includes an additional RPS goal of requiring 35 percent of energy sales to retail customers be generated from renewable resources by December 31, 2020, expands list of eligible renewable resources, and provides a new definition of when RPS energy can be delivered to the LADWP.

#### 2. Goal:

To promote stable electricity prices, protect public health, improve environmental quality, provide sustainable economic development, create new employment opportunities, and reduce reliance on imported fuels, the LADWP will increase its supply of electricity from "eligible" renewable resources until a target portfolio level of 20 percent is reached by December 31, 2010, measured by the amount of electric energy sales to retail customers. An additional goal is that 35 percent renewables will be met by December 31, 2020.

Also, the LADWP will continue to encourage voluntary contributions from customers to fund renewable resources above the stated RPS goal.

#### 3. Eligible Resources:

Electricity produced from the following technologies constitute "eligible" resources: biodiesel; biomass; conduit hydroelectric; digester gas; fuel cells using renewable fuels; geothermal; hydroelectric incremental generation from efficiency improvements; landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas injected into a natural gas pipeline for use in renewable facility;

renewable facilities using multiple fuels, including the use of up to 25 percent fossil fuel as measured on an annual total energy input basis; small hydro 30 megawatts (MW) or less, and the Los Angeles Aqueduct hydro power plants; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later.

4. Long-Term Resource Plan:

The LADWP will integrate the RPS into its long-term resource planning process, and the RPS will not compromise the LADWP's IRP objectives of service reliability, competitive electric rates, and environmental leadership.

5. Renewable Resource Acquisition:

The LADWP's renewable acquisitions will be based on a competitive bid process, and least-cost, best-fit project selection criteria will be utilized. Furthermore, preference will be given to projects that are located within the City of Los Angeles and are to be owned and operated by the LADWP to further support the LADWP's economic development and system reliability objectives.

For acquisitions before December 31, 2010, the LADWP will pursue its 20% RPS goal in a manner which will result in a minimum of 35% renewable energy generation ownership that LADWP develops or that LADWP acquires through contracts with providers of renewable energy. Furthermore, with respect to the foregoing contracts with providers, such contracts will provide for the LADWP ownership or an option to own, either directly or indirectly (including through joint power authorities).

On or after January 1, 2011, a minimum of 75% of all new renewable energy generation acquired by the LADWP will either be owned or acquired by the LADWP through an option-to-own, either directly or indirectly (including through joint powers authorities), until at least half of the total amount of the renewable resources are supplied by renewable resources owned or optioned either directly or indirectly (including through joint power authorities) by LADWP.

The first priority for the LADWP will be to pursue outright ownership opportunities, and the second priority will be consideration of option-to-own cost-based renewable resource acquisitions. In comparing outright ownership to "option-to-own," option-to-own projects must show clear economic benefits, such as pass-through of Federal or State tax credits or incentives, which could not otherwise be obtained, or the need to evaluate new technology. The option-to-own will be exercisable with the minimum terms necessary to obtain and pass those tax credits and/or incentives to the LADWP and/or upon a reasonable amount of time to evaluate the operation of the new technology.

6. System Rate Impact:

The Board established a "Renewable Resources Surcharge", to cover the additional costs of renewable resources to meet the RPS goals beginning on July 1, 2006. The LADWP may not make any major financial commitment to procure/acquire renewable resources prior to evaluating the rate impact and any potential adverse financial impact on the City transfer.

7. Solar Set Aside:

Following further assessment by the LADWP, and adopted legislation, the Board may establish a solar set aside. The Board may also establish the appropriate prices to be paid for solar resources and a "Solar Surcharge" to cover the additional cost of a solar set aside.

8. Reporting Requirement:

The LADWP will provide an annual report of the following information to its customers and the California Energy Commission as required by SB 1078 and SB 107: (1) expenditure of Public Benefits Charge funds for renewable energy resources development, (2) the resource mix used to serve its retail customers by fuel type, and (3) status in implementing an RPS and progress toward attaining the standard. The LADWP will continue to provide a quarterly Power Content Label Report to its customers as required by SB 1305 (1997), and an annual report of the total expenditure for renewable resources funded by voluntary customer contributions. As there may be significant fluctuations from year to year in the amount of energy generated, particularly from hydroelectric, wind and solar resources due to weather conditions, the LADWP RPS goals may report energy that would have been generated in an average year from individual projects utilizing these technologies.

9. Flexible Compliance:

Renewable resource procurements will be limited to development and acquisition of physical generation assets and energy purchase contracts, and therefore, the LADWP will not purchase the "renewable energy credit" from a renewable resource, without purchasing the associated energy. In the event that RPS goals cannot be achieved due to limitations in the Renewable Resources Surcharge, or the availability of renewables that meet the IRP requirements, the Board shall consider adjusting this RPS Policy as needed.

10. RPS Energy Delivery:

Renewable energy may be delivered to the LADWP's Power System at a different time than when the renewable facility generated the energy, pursuant to Public Resources Code Section 25741, Subdivision (a). Furthermore, the energy delivered to the LADWP may be generated at a different location than that of the renewable facility. In practical terms, renewable energy may be "firmed" or "shaped" within the calendar year. FIRMING and SHAPING refers to the process by which resources with variable delivery schedules may be backed up or supplemented with delivery from another source to meet customer load. The firming and shaping will allow renewable energy that is generated in a variable manner to be delivered to the LADWP in a consistent manner. This will allow transmission capacity to be utilized more efficiently, and will also increase system reliability.