• LADWP Achievements
• LADWP Power System Overview / Priorities
• 2010 Energy Mix
• RPS History – 20% by 2010
• Renewable Energy Approach – Diversity & Geographic
• Future Challenges
LADWP has made significant progress in achieving its environmental goals

- Achieved 20% delivered renewable energy in 2010 in accordance with Mayor’s Green LA Plan
- LADWP Supports AB32 Goals; direct investments to reduce GHG emissions are LADWP’s priority
- 2010 represented lowest coal usage (39%) by LADWP since 1990
- CO2 emissions are 22% below 1990 levels today
Energy Distribution, Transmission & Supply

- LADWP is the largest municipal utility in the U.S.
- Manages 27% of transmission in California for LA and other Southern California public utilities
- 465 square miles of service
- LADWP imports energy from several states
- Ability to import over 10,000 MW via AC and DC transmission lines
  - 157 Distributing Stations
  - 21 Receiving Stations
  - 121,000 Transformers
- For reliability, substantial amount of energy must come from In-Basin local generation supply.
LADWP Has a Vertically Integrated Power System

**Generation**
- 7,200 MW capacity
- 25,000 GWH production
- Hydro, coal, natural gas, nuclear, and renewables

**Transmission**
- 5,500 miles of lines
- 15,000 towers
- 28% of California's transmission
- AC: 115 kV - 500 kV
- DC: 1000 kV (+/-500kV)

**Distribution**
- 7,000 miles of overhead lines
- 6,300 miles of underground lines
- 301,000 poles

LADWP is nation’s largest municipal utility
Power System Priorities

**Reliability:** Continuous infrastructure replacement and upgrades to maintain reliability

**Maintain Competitive Rates**

**Environmental Stewardship:**
- regulatory Compliance by repowering in-basin power plants
- reducing use of Once-Through Cooling (OTC)
- meeting greenhouse gas (GHG) reduction requirements
- increasing renewable energy and energy efficiency
### Sources of Energy-2010

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<tbody>
<tr>
<td></td>
<td>% of Total</td>
<td>% of Total</td>
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</tr>
<tr>
<td>Coal</td>
<td>53</td>
<td>39</td>
<td>4.4</td>
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<td>10</td>
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<td>Large Hydro</td>
<td>6</td>
<td>5</td>
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<td>Renewables:</td>
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<td>20</td>
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<td>Small Hydro</td>
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<tr>
<td>Wind</td>
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<td>9</td>
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<td>&lt;1</td>
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<td>Biomass and Waste</td>
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<td><strong>Combined Average Cost</strong></td>
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Renewable Portfolio: 20% of Total Energy Mix delivered in 2010

CO$_2$ is 22% below 1990 level

* 2010 Energy Mix predicted, subject to final auditing
Renewable Portfolio Standard (RPS) Historical Progress

LADWP quadrupled RPS since 2003; by reaching 20% by 2010
Renewable Portfolio Standard (RPS)

Renewable Resource Portfolio

Type of Resource

- Wind: 25% (9.6 ¢/kWh)
- Solar: 20% (20.7 ¢/kWh)
- Geo: 1% (9.0 ¢/kWh)
- Biofuel: 54% (5.9 ¢/kWh)
- Small Hydro: 1% (7.3 ¢/kWh)

Type of Ownership**

- Owned or Option to Own: 51%
- PPA*: 15%
- Short Term Purchases: 34%

*Power Purchase Agreements (PPA) expire between 2015 and 2025.
**Subject to change due to negotiations and construction schedules.