Deployment of Deep Decarbonization Technologies

July 2019

GREEN NEW DEAL

PLAN

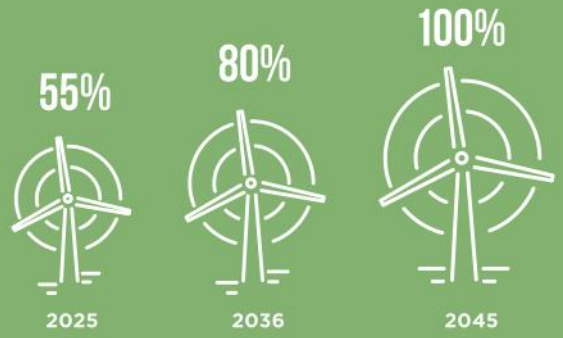
ENVIRONMENT ECONOMY EQUITY

Electrify 100% by 2030

GREEN NEW DEAL PLAN

GREEN NEW DEAL PLAN

100% RENEWABLE ENERGY BY 2045

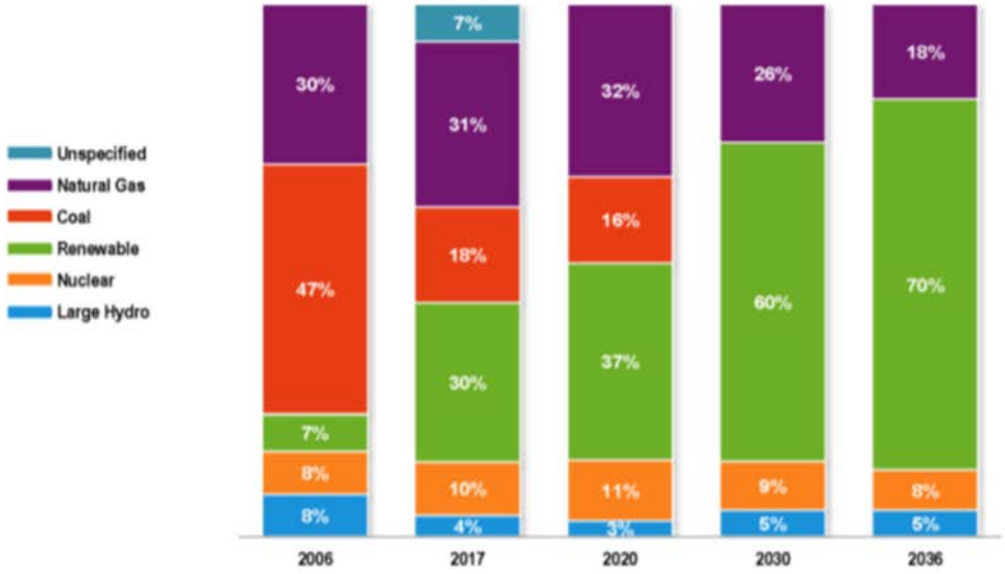


GREEN NEW DEAL PLAN

100% OF BUILDINGS WILL BE NET ZERO CARBON BY 2050

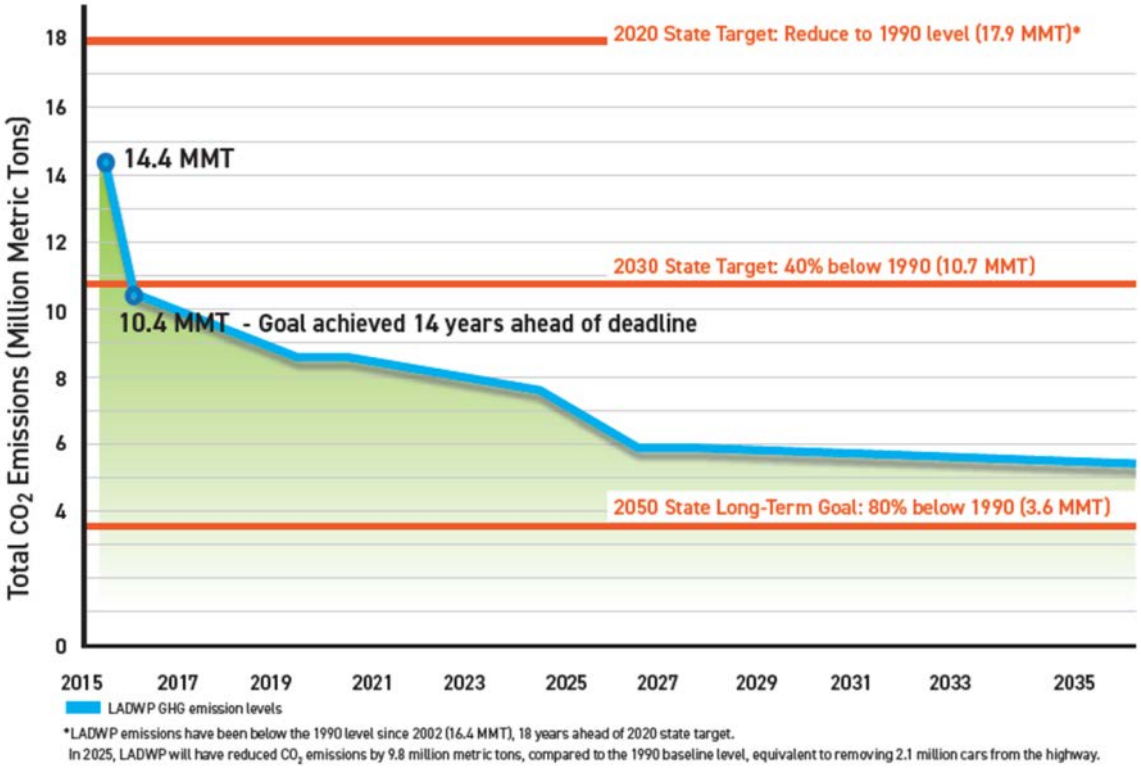
Green New Deal Energy Goals

- LADWP will supply 55% renewable energy by 2025, 80% by 2036 and 100% by 2045
- Demand Response to 234 MW by 2025 and 600 MW by 2035
- Reduce building energy use per sq ft by 22% by 2025, 34% by 2035 and 44% by 2050
- All new buildings will be net carbon zero by 2030 and 100% of new buildings will be net carbon zero by 2050
- Increase the percentage of zero emission vehicles in the city to 25% by 2025, 80% by 2035 and 100% by 2050
- Electrify 100% of Metro and LADOT buses by 2030
- Reduce Port of LA related GHG emissions by 80% by 2050



Clean Energy Recent Successes

- Reduce GHG emissions to 47% below 1990 level 14 years ahead of State target
- Achieved 30% renewables for CY 2017
- Achieved 1,000 MW of wind of large-scale solar
- Achieved >350 MW customer local solar
- Ranked No 1 Solar City in US in 2017 and 2018
- Commissioned Beacon 250 MW solar + 20MW lithium battery
- Moved forward with eliminating IPP coal by 2025
- Nearly 3,000 EV chargers installed in LA

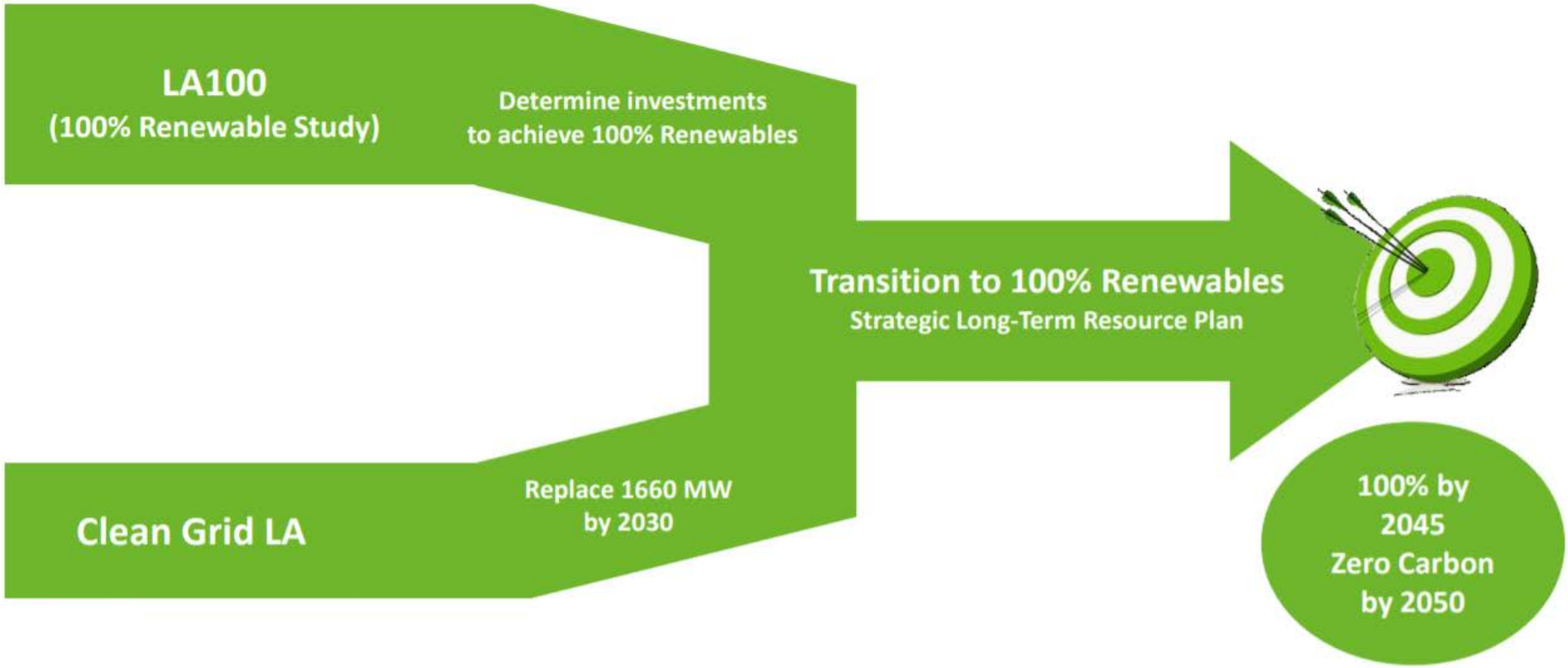


Clean Grid LA

- In February 2019, Mayor announced decision to not repower ocean cooled thermal units at Scattergood, Haynes and Harbor
- 1660MW of in-basin power generation must be replaced/offset by 2030
- Determine investments and timelines to achieve goal and integrate into the 100% Renewable efforts
- Internal Steering Committee and Stakeholder participation
- Presentation on the topic is scheduled to be presented to the Board in August

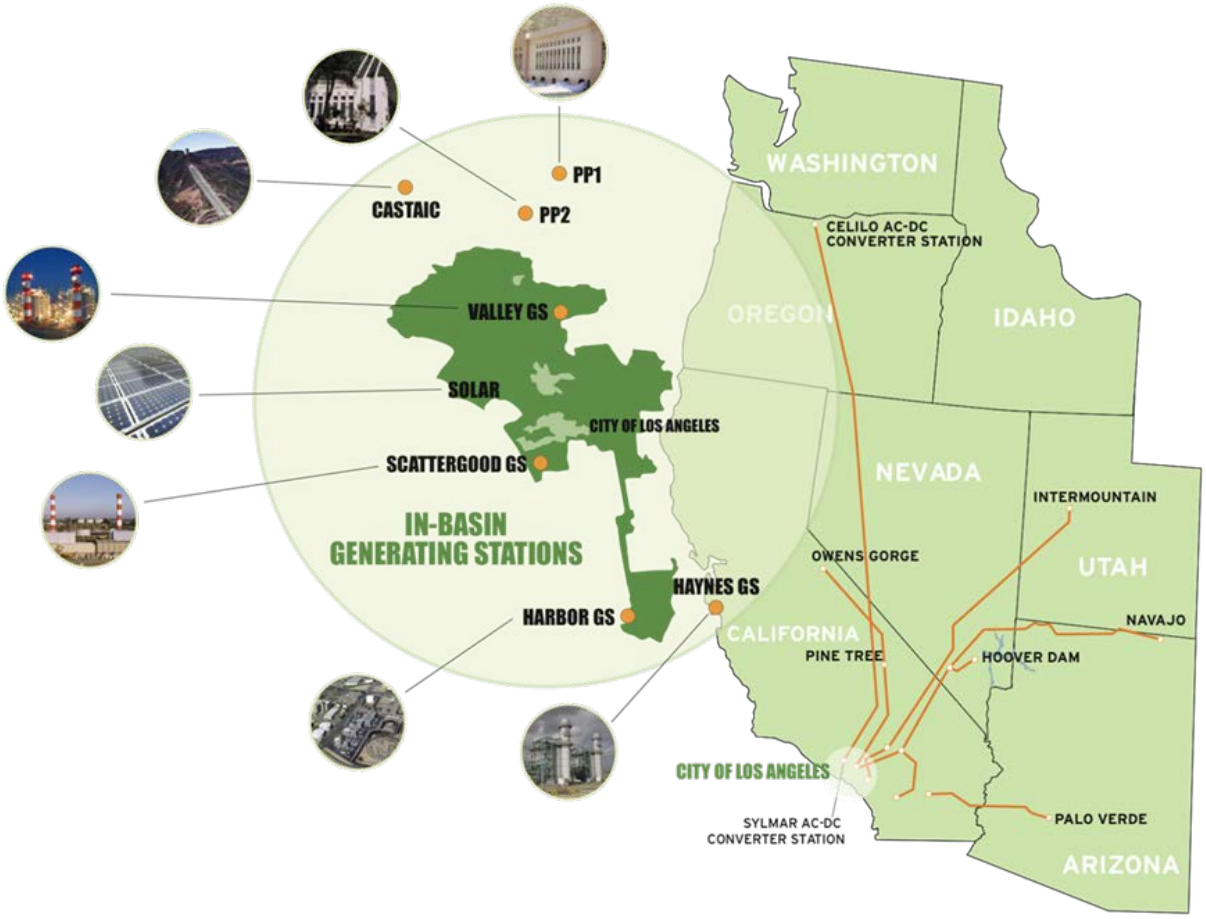
LA100 – 100% Renewable Study

- California State Senate Bill 100 (SB100) sets a target of 100% carbon free electricity for the State by 2045
- City of Los Angeles 100% Renewable (LA100) final plan due end of 2020
- Clean Grid Efforts will support LA100
- LADWP's Strategic Long-Term Resource Plan will align with 100% Study



Challenges

- Over generation of renewables
- Upgrading the Transmission System
- Upgrading the Distribution System
- Maintaing Reliability
- Sensitivity to Rate Impacts



LADWP's Current Transmission System & Generating Resources

Opportunities: Equity

- Green Job Growth: Los Angeles Green New Deal is anticipated to bring 400,000 new jobs to the LA region by 2050

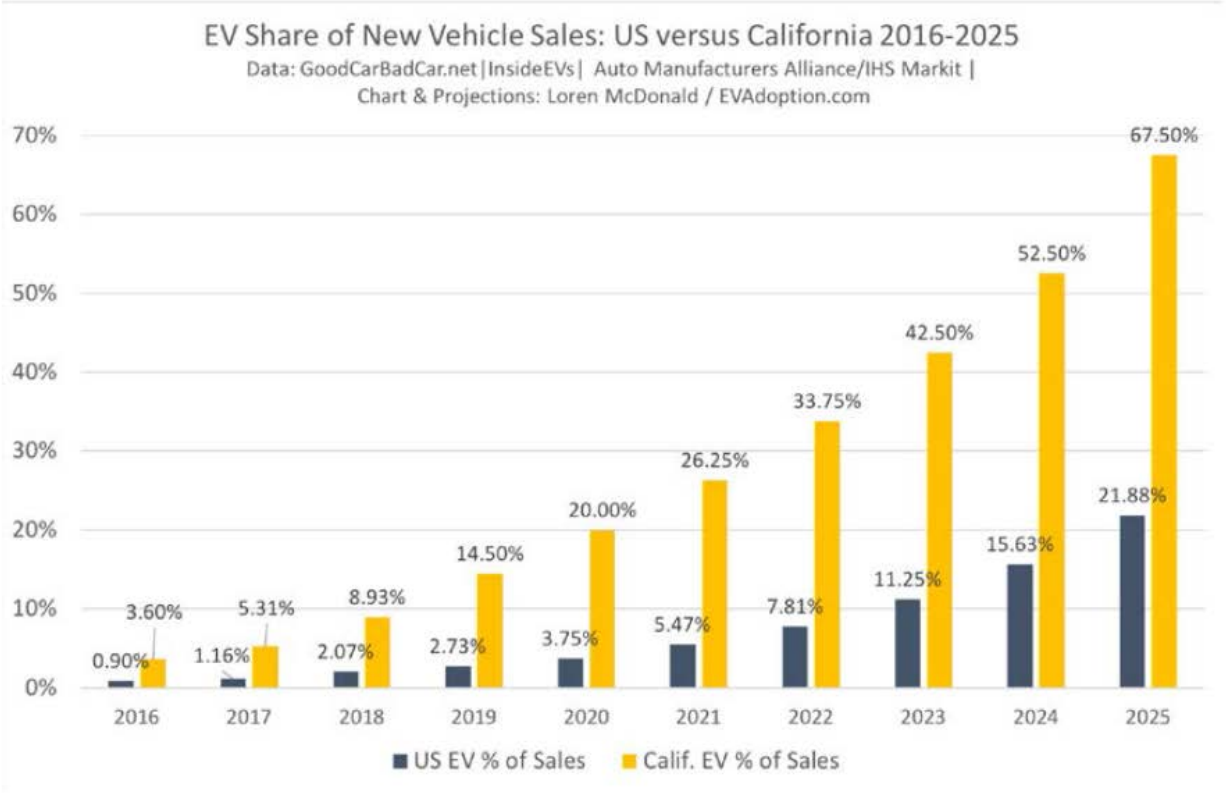
- Improved Air Quality

- LA's deep decarbonization efforts is anticipated to prevent:
  - 1,650 premature deaths annually
  - 660 respiratory and cardiovascular hospital admission annually
  - Save $16 billion from prevented deaths and hospital admissions annually

- Targeted incentives to improve infrastructure and resources in disadvantage communities

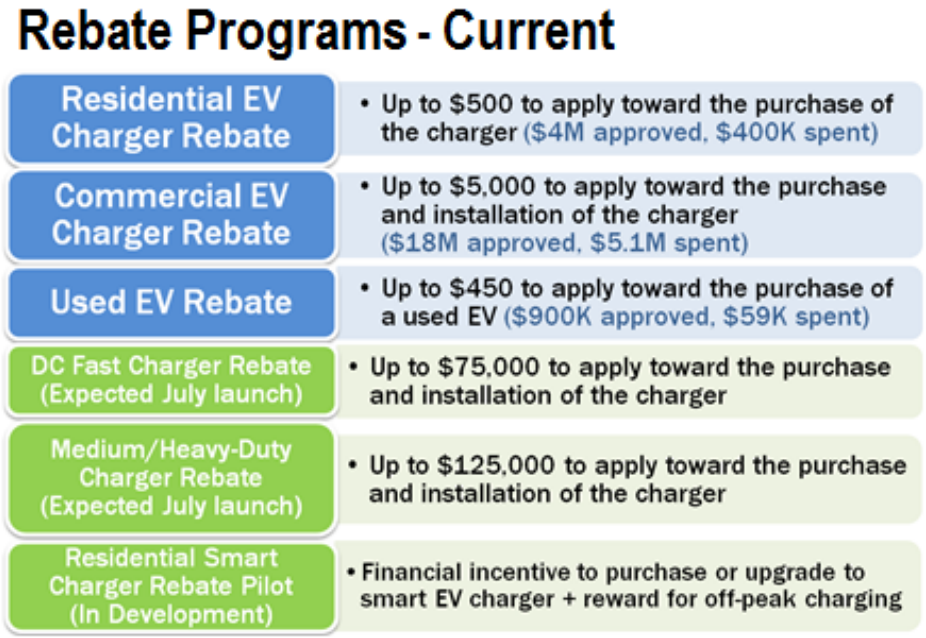
- Improved resiliency to natural disasters and climate change with an enhanced distributive power generation system

Opportunities: Transportation Electrification



LADWP Transportation Electrification

- Working with multiple agencies and California utilities on expediting transportation electrification:
  - Transportation Electrification Partnership (TEP) with LA Cleantech Incubator
  - West Coast Transportation Corridor
- LADWP working with the Port of Los Angeles to limit emissions in both transportation and docking with Alternative Maritime Power (AMP).
- LADWP manages a suite of EV Incentives to accelerate adoption:



Opportunities: Building Electrification

- Building Electrification Study recently completed with LADWP, Edison and Sacramento Municipal Utility.
- Electrification can reduce GHG emissions in homes by up to 60% in 2020 and by up to 90% in 2050
- All-electric new construction results in savings of $130-540 per year relative to a gas fueled home over the life of the equipment