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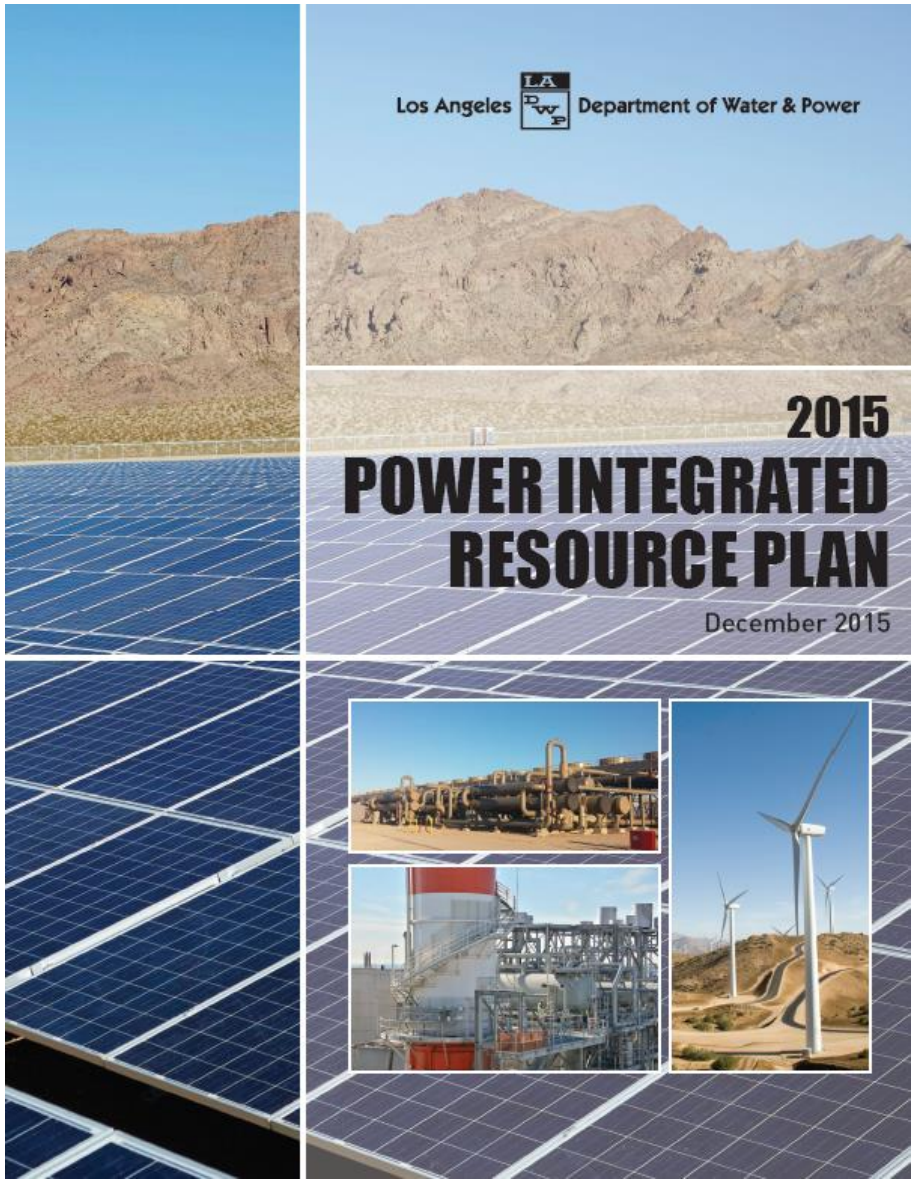
Putting Customers First



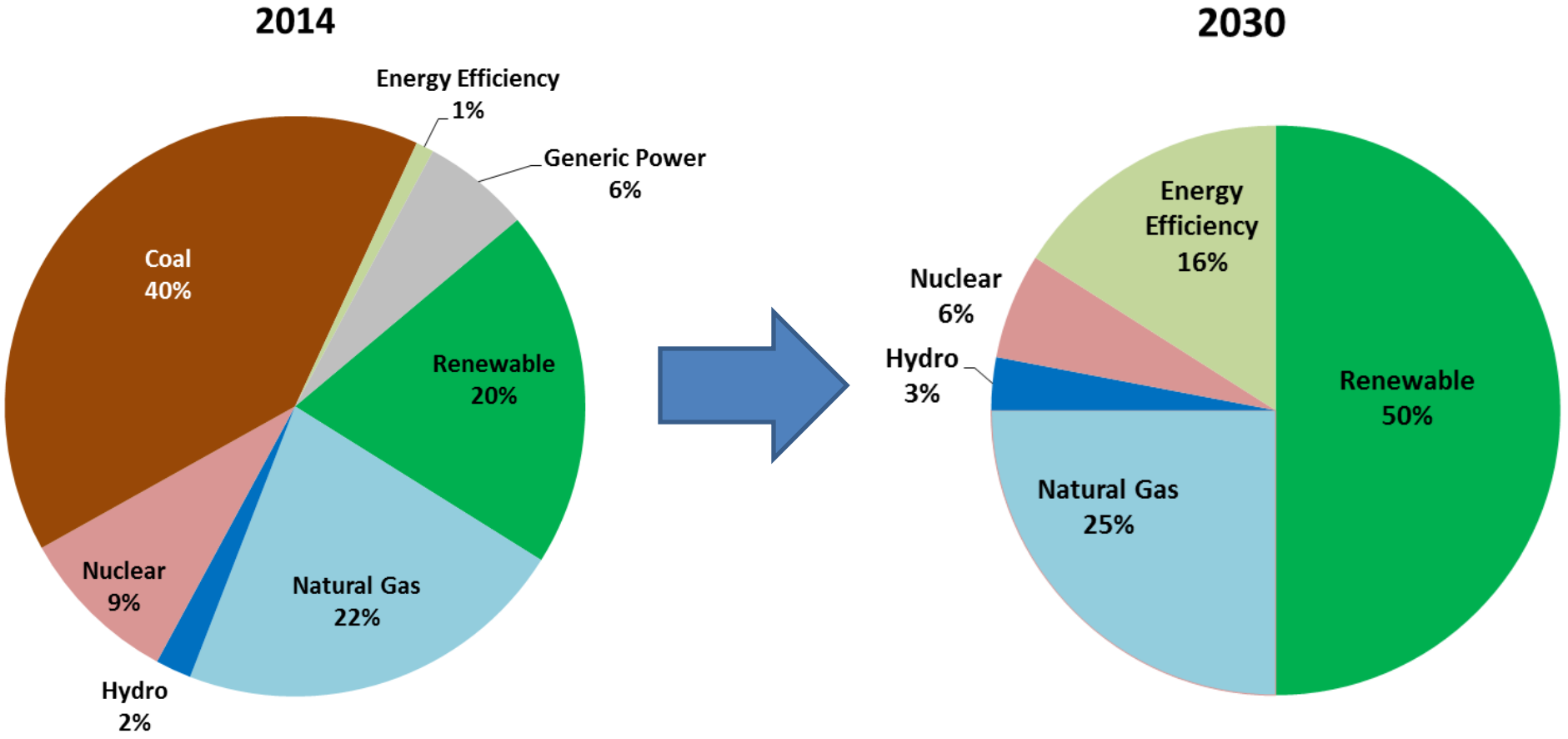
2015 IRP

LA's Power Transformation Overview

For
Renewable Energy Transmission Initiative
by
Brian Koch
Los Angeles Department of Water and Power

January 29, 2016

Energy Transformation



Over the next 15 years, LADWP will replace over 70% of its generation infrastructure used to reliably deliver power to its customers

Coal is eliminated and natural gas levels decrease with increased renewables

Transformation Elements

Eliminate Coal from LADWP's Power Supply

Reach 33% RPS by 2020 and 50% by 2030

Achieve 15% Energy Efficiency by 2020

Once-through Cooling Repowering

Invest in Power System Reliability Program (KPIs)

Support Electric Vehicle Expansion

GHG Reduction Strategy

Energy Efficiency

Navajo: 477 MW

IPP: 875-1200 MW

Solar

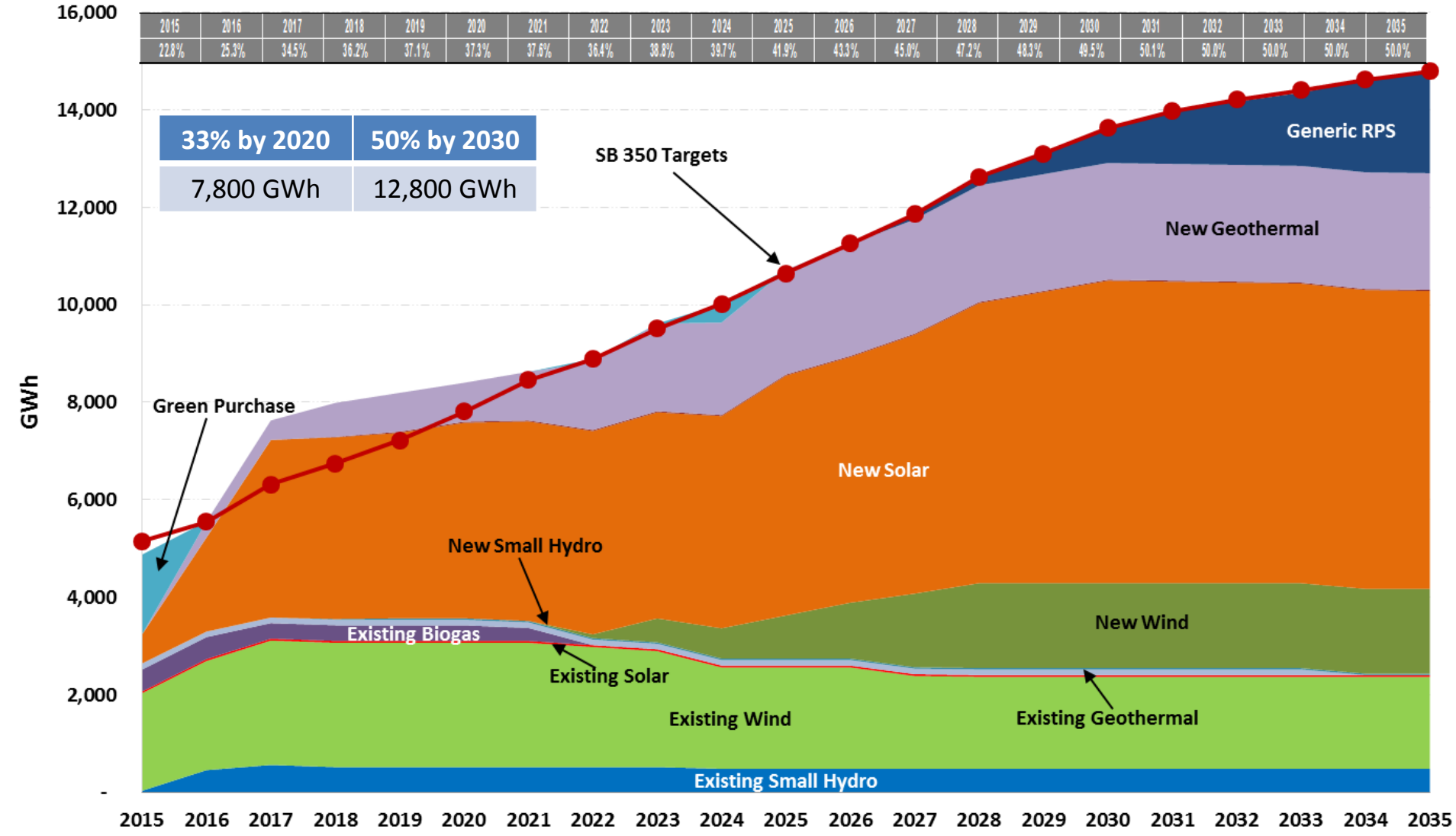
Wind

Geothermal

Combined Cycle Natural Gas

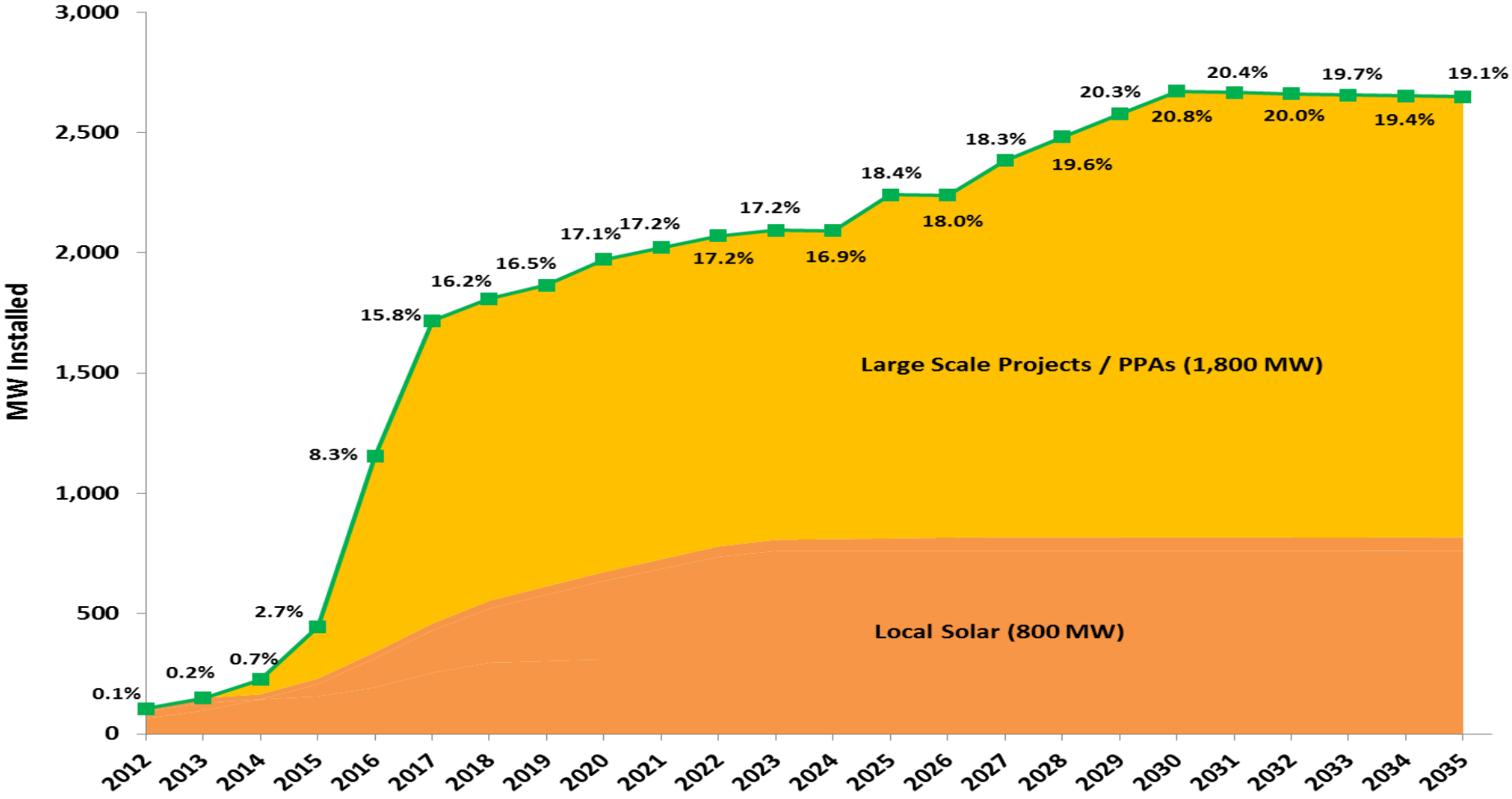
Electrification of the Transportation Sector

Achieving 50% RPS by 2030

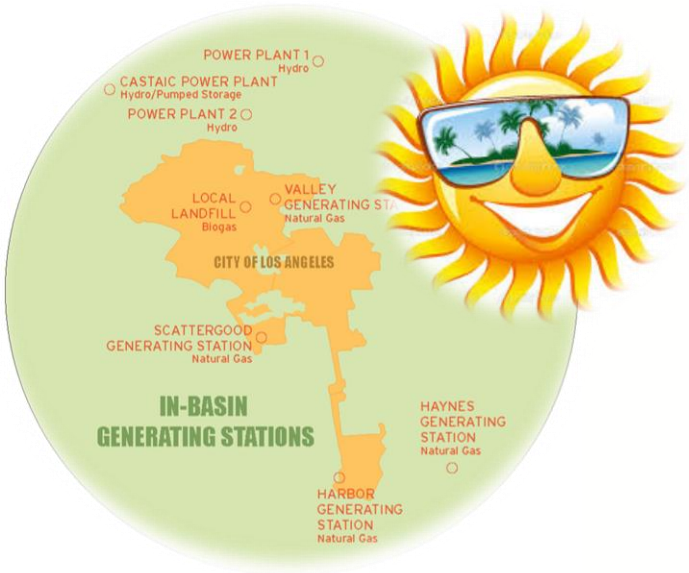


Solar Program Breakdown

Recommended Case	Customer Net Metered	Feed-in Tariff	Community Solar	Large Scale PPA	Total
50% RPS, Adv EE, 800 MW Local Solar, High EV	310 MW	450 MW	40 MW	1,800 MW	**2,600 MW**



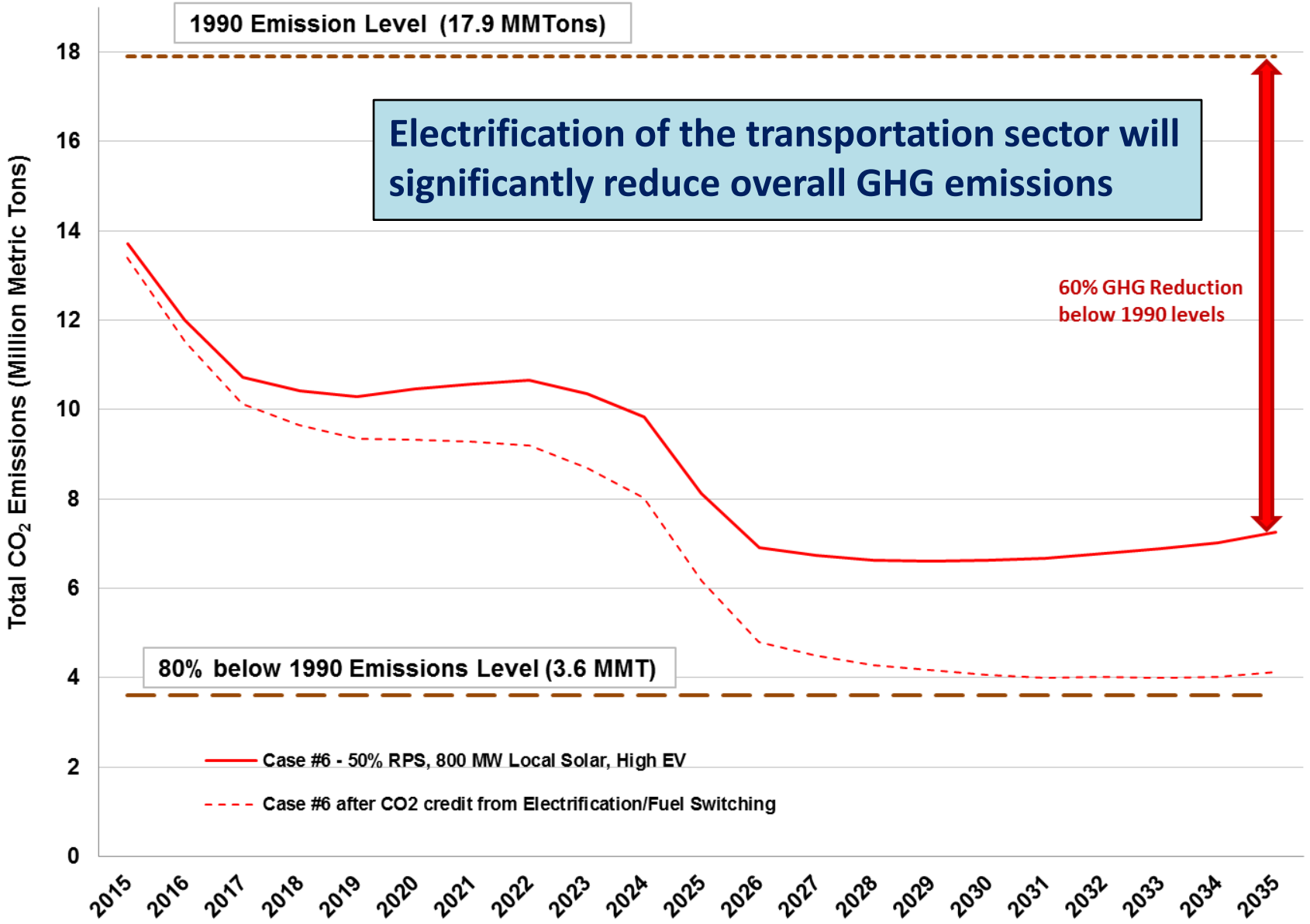
LADWP Power Resources



Transmission Upgrades

- Increased capacity from 450 to 2,200 MW
- Renewable interconnection requests of 3,773 MW from wind and solar developers
- New Haskell Canyon Switching Station (SS)
- New double-circuit 230 kV transmission line from Barren Ridge SS to the new Haskell Canyon SS.
- New 230-kV circuit on existing structures from the new Haskell Canyon SS to the Castaic Power Plant.
- Reconductoring of existing 230 kV transmission line from Barren Ridge to the existing Rinaldi Receiving Station
- Expand the existing Barren Ridge SS

2015 IRP Recommended Case



2015 IRP Case Scenarios

Coal Cases

1. Navajo 2016; IPP 2027* (base)
2. Navajo 2016; IPP 2025*

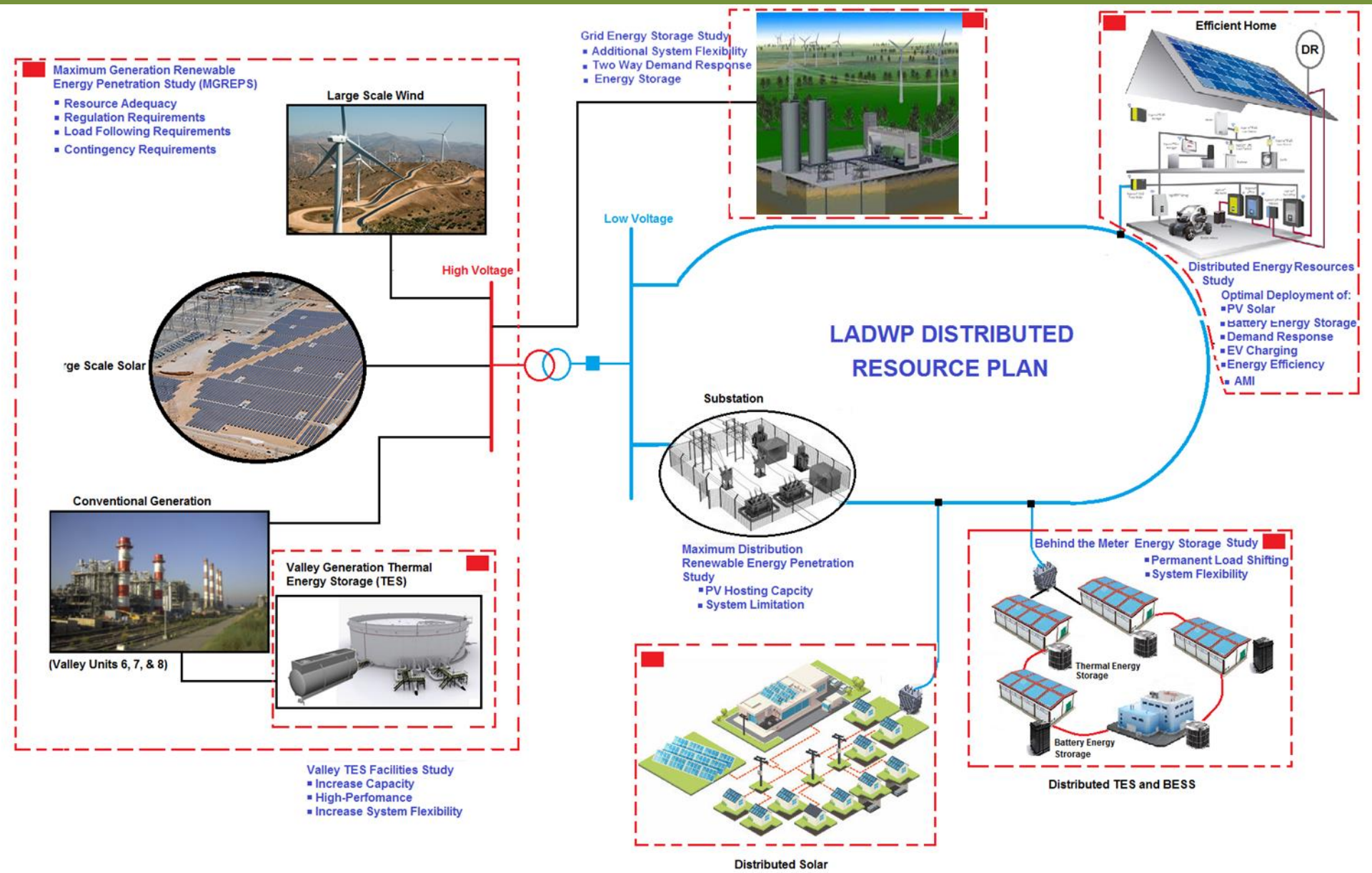
Renewable (RPS), Energy Efficiency (EE), and Local Solar Cases

3. 33% RPS; 15% EE; 800 MW Local Solar; Low EV
4. 50% RPS; 15% EE; 800 MW Local Solar; Low EV
5. 50% RPS; 15% EE; 800 MW Local Solar; Med EV
6. 50% RPS; 15% EE; 800 MW Local Solar; High EV*
7. 50% RPS; 15% EE; 1,000 MW Local Solar; Med EV

Recommended Case

**Expected, Low, and High Fuel Cost Sensitivity Analysis was performed*

Maximum Distribution Study



Questions ?

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