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Once-Through Cooling, Transmission, and Preferred Resources Update IEPR Joint Agency Workshop May 23, 2019

LADWP's Clean Energy Future

- OTC & Renewable Goal Updates
- Transmission Planning
- Preferred Resources

Transition to 100% Clean Energy Accelerated

February 2019: Announced decision to not repower ocean-cooled thermal units at Scattergood, Haynes & Harbor plants.



~1660 MW of in-basin generation must be replaced/offset by 2030



Transition to 100% Clean Energy Accelerated

May 2019: Release of new Sustainability Plan, including:

- Accelerated RPS goals
- Building Electrification goals





Transition to 100% Clean Energy Accelerated

LADWP's 100% Study with NREL to align with Strategic Long-Term Resource Plan (SLTRP) in 2020.

LADWP to identify noregrets projects & programs to accelerate ~1660 MW of alternative resource mix.





LADWP Transmission System Overview

Major Transmission Arteries (Out-of-Basin)

- Vic-LA Path: Collectively Segments A & B
- Pacific DC Intertie: Segment C
- Owens Valley System: Segment D

Local Transmission System (In-Basin)

- Local Transmission: Blue Lines
- Generating Stations Supporting Local Transmission:
 - Scattergood Generating Station
 - Haynes Generation Station
 - Harbor Generating Station
 - Valley Generating Station

Scattergood, Haynes, and Harbor Generating Stations include Once-Through Cooling (OTC) Thermal Plants.



Completed Transmission Projects



Barren Ridge Transmission Project Completed in 2016 to Deliver over 1,000 MW of Renewable Energy to Los Angeles.

Near-Term Transmission Upgrades



Barren Ridge Transmission System Expansion when completed in 2022 will deliver up to 1,700 MW of renewable energy to Los Angeles.

Near-Term Transmission Upgrades

Vic-LA Path (A & B)

- Increase import capacity of about 450 MW
- Maximize renewable energy import
- In-service date of 2022





Vic-LA Path Upgrades Completion Will Reduce LADWP Reliance on Natural Gas While Improving System Reliability.

Leveraging Existing Assets to Increase Renewable Energy



Navajo Generating Station

LADWP's transmission capacity ownership of 48.9% (628 MW)



Leveraging Existing Assets to Increase Renewable Energy



Mohave Generating Station

LADWP's transmission capacity ownership of 30% (716 MW)





Long-Term Transmission Expansion Plans for More Renewable Energy Access

Vic-LA Path (A & B) Major Upgrade Feasibility Studies

- Increase transmission capacity of 500 kV Lines (Segment A)
- Upgrade 287kV Century Lines 1 and 2 (Segment B) into High Voltage DC or AC



Southern Transmission System (STS)

- Rebuild STS DC Converter Stations system as part of life extension
- Nearly potential 1000MW of additional renewable energy from coal retirement



Distributed Energy Resources RFI

- Loss of OTC capacity will necessitate significant growth of not only utility-scale renewables and storage, but Distributed Energy Resources (DERs)
- Issued DER Request for Information on April 29 to industry experts for information on Distributed Energy Resources (solar, energy storage, EV charging, microgrids, etc.)
- DER RFI responses due June 14, 2019, with evaluations and RFPs to follow



Local Solar Programs



Energy Storage

Achieved

- Upgraded Castaic Power Plant, 21 MW Completed 2013
- ➤ Fire Station 28, 12 kW Completed 2/2018
- ➤ La Kretz Innovation Center, 60 kW Completed 7/2016
- Beacon Battery Energy Storage System, 20 MW 10/2018 in service

Upcoming

- LADWP HQ 100 kW Lithium Ion battery and 100 kW Flow battery project in construction
 - EMS pilot + EV #s
- Grid-connected installations at Rec & Parks, Distributing Stations, LA Zoo and others
- PPA for over 100 MW of 4 hour storage under consideration





Beacon Battery Storage – 20 MW





Demand Response

- ≻ 500 MW by 2030
- ➤ June 2015 launched C&I
- Increased C&I incentives for Summer 2019

Next:

- Residential Thermostat
 Program (Spring 2020)
- Update DR targets with consideration for OTC results





Transportation Electrification Goals

Facilitate the Adoption of Electric Transportation in Southern California

Electric Vehicle Goals for LA City

2022:145,000 Electric Vehicles15% of new car purchases

Commercial EV Charger Goals

- **2022:** 10,000
- **2025**: 25,000
- **2028:** 28,000





Electric Transportation Strategy

Incentives

- ➤ Used Car Rebate \$1,500
- EV Charger Rebates up to \$500, with +\$250 for dedicated service



Up to \$4,000 per charger – workplace, public & multifamily

Partnerships & Outreach

- Targeted education and outreach to DACs
- Funding support for BlueLA car sharing program
- Public pole-mounted chargers

Utility Infrastructure

 LADWP Installed, Owned and Operated EV Charging Infrastructure for Public and Fleet



Energy Efficiency: A Sustained Effort to Achieve 15% by 2020

Annual EE Investment and Goals: 2010 – 2020

Fiscal Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Budget										\$163.0
(millions)	\$49.5	\$37.3	\$50.0	\$78.0	\$79.0	\$73.0	\$133.0	\$168	\$177.0	(+\$20)
GWh Savings	265	228	319	337	343	412	480	477	396	359
Portfolio										
Savings Cum'l	1.1%	2.1%	3.4%	5%	6.5%	8.2%	10.4%	12%	13.7%	15.1%
									γ	
	Actuals							Current Year	Future Planned	
									Plan	



Energy Efficiency: 15% by 2020

Residential LED Distribution

- 2.6M bulbs to all 1.3M LADWP residential customers, SF and MF
- AC Optimization Program
- Energy Savings Assistance Program
 - Partnership with SoCalGas, available to CPUC-eligible lowincome residents in multi-family buildings in LA.
- EE lighting measures for LAUSD through Commercial Direct Install program; first project commenced 5/20/19

Electrification Targets: February 2018, LA City Council requests LADWP to adopt aggressive Building Electrification targets aimed at GHG reduction; LADWP partnered with SCE & SMUD on study, now complete



Thank You

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