



The Los Angeles 100% Renewable Energy Study

LA100 Final Run Updates

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Agenda for This Session

- Reference Case
- Status of Final Run
- Expectations for 2020 AG Meetings

Reference Case

LA100 Scenarios (updated September 2019)

		LA100 Scenarios								
		Moderate Load Electrification				High Load Electrification (Load Modernization)				High Load
		SB100	LA-Leads, Emissions Free (No Biomass)	Transmission Renaissance	High Distributed Energy Future	SB100	LA-Leads, Emissions Free (No Biomass)	Transmission Renaissance	High Distributed Energy Future	High Load Stress
	2030 RE Target	60%	100% Net RE	100% Net RE	100% Net RE	60%	100% Net RE	100% Net RE	100% Net RE	60%
	Compliance Year for 100%	2045	2035/2040	2045	2045	2045	2035/2040	2045	2045	2045
Technologies Eligible in the Compliance Year	Biomass	Y	No	Y	Y	Y	No	Y	Y	Y
	Biogas	Y	No	Y	Y	Y	No	Y	Y	Y
	Electricity to Fuel (e.g. H2)	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Fuel Cells	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Hydro - Existing	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Hydro - New	N	N	N	N	N	N	N	N	N
	Hydro - Upgrades	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Natural Gas	Yes	N	N	N	Yes	N	N	N	Yes
	Nuclear - Existing	Y	Y	No	No	Y	Y	No	No	Y
	Nuclear - New	N	N	N	N	N	N	N	N	N
Wind, Solar, Geo	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Storage	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Repowering OTC	Haynes, Scattergood, Harbor	N	N	N	N	N	N	N	N	N
DG	Distributed Adoption	Moderate	High	Moderate	High	Moderate	High	Moderate	High	Moderate
RECS	Financial Mechanisms (RECS/Allowances)	Yes	N	N	N	Yes	N	N	N	Yes
Load	Energy Efficiency	Moderate	Moderate	Moderate	Moderate	High	High	High	High	Moderate
	Demand Response	Moderate	Moderate	Moderate	Moderate	High	High	High	High	Moderate
	Electrification	Moderate	Moderate	Moderate	Moderate	High	High	High	High	High
Transmission	New or Upgraded Transmission Allowed?	Only Along Existing or Planned Corridors	Only Along Existing or Planned Corridors	New Corridors Allowed	No New Transmission	Only Along Existing or Planned Corridors	Only Along Existing or Planned Corridors	New Corridors Allowed	No New Transmission	Only Along Existing or Planned Corridors
WECC	WECC VRE Penetration	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Note, the study also includes a reference case (2017 IRP with minor updates). This case extends through 2036.

Reference Case: Purpose and Plan

- Inclusion of a reference case responds to LADWP Board request to do so to **increase transparency**
 - IRP 2017 reflects the latest Board-approved set of projections
- **Benefit:** Using a consistent set of assumptions and bulk power modeling tools allows us a basis to compare costs and reliability through 2036
- **Limitation:** This case does not include the same end year as LA100 scenarios and therefore is not included among pathways to reach 100% RE

Reference Case: Key Points

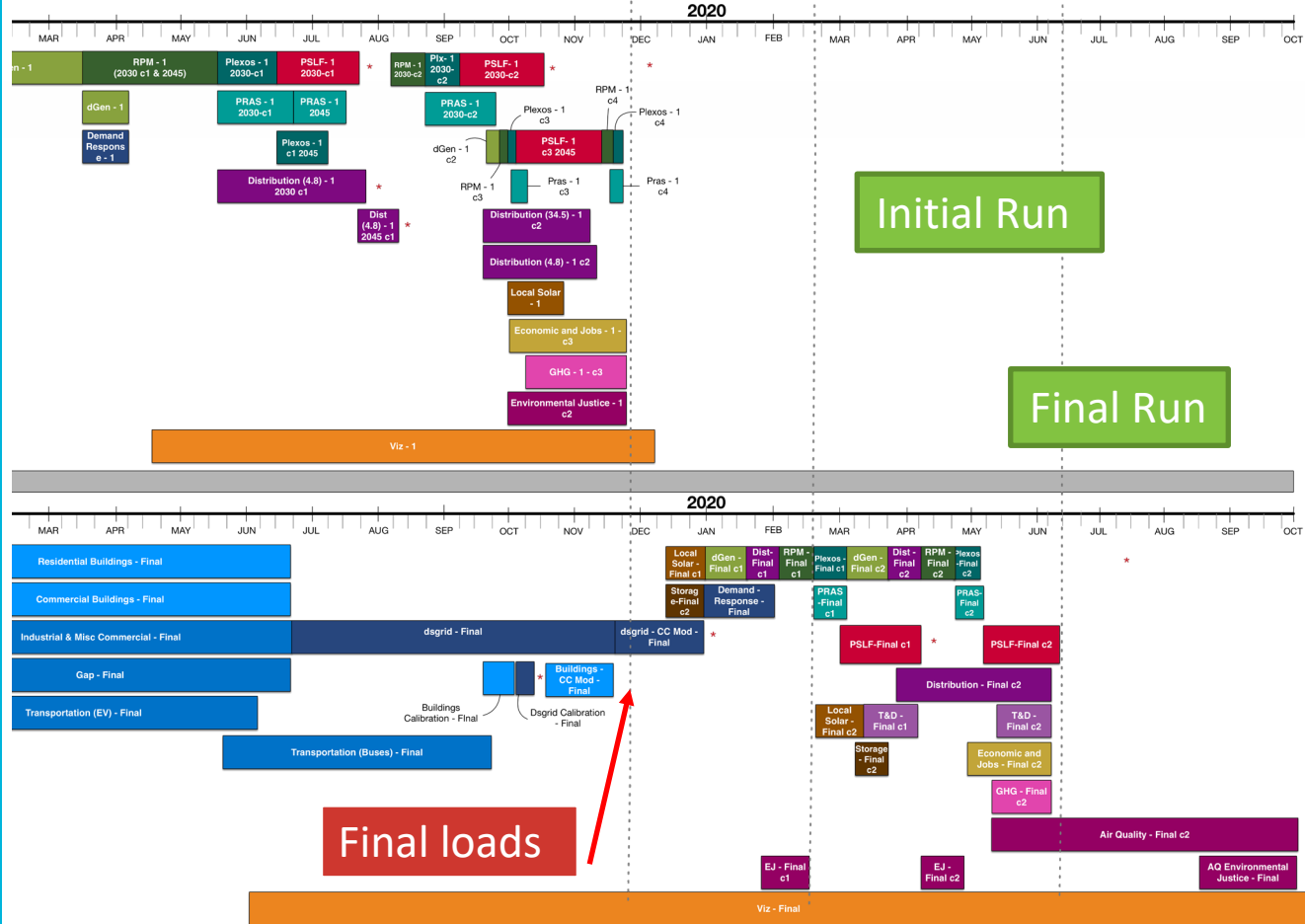
- The Reference Case (including repowering OTC units) **does not serve as the basis for the LA100 scenarios**
 - LA100 scenarios remain the same as before
 - No LA100 scenario includes repowering OTC
- Costs for LA100 scenarios and the Reference Case **can only be compared through 2036**, even though LA100 scenarios continue through 2045
 - Costs for the Reference Case will not be compared to 2045 scenarios
- The Reference Case will use **“moderate” load projections** to be consistent with the moderate set of scenarios

Questions on Reference Case?

Status of Final Run

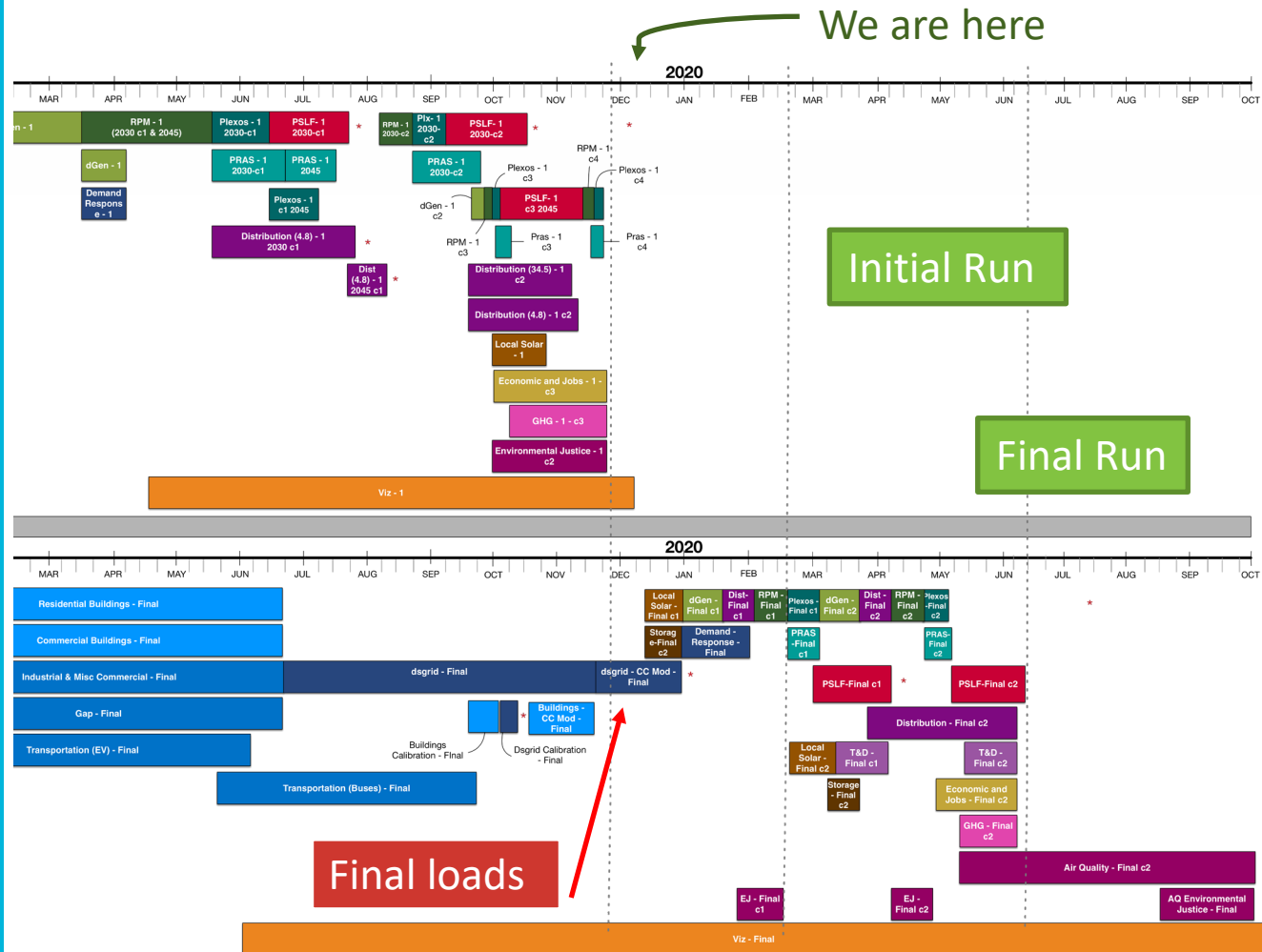
We Are Now Focused on the Final Run

We are here



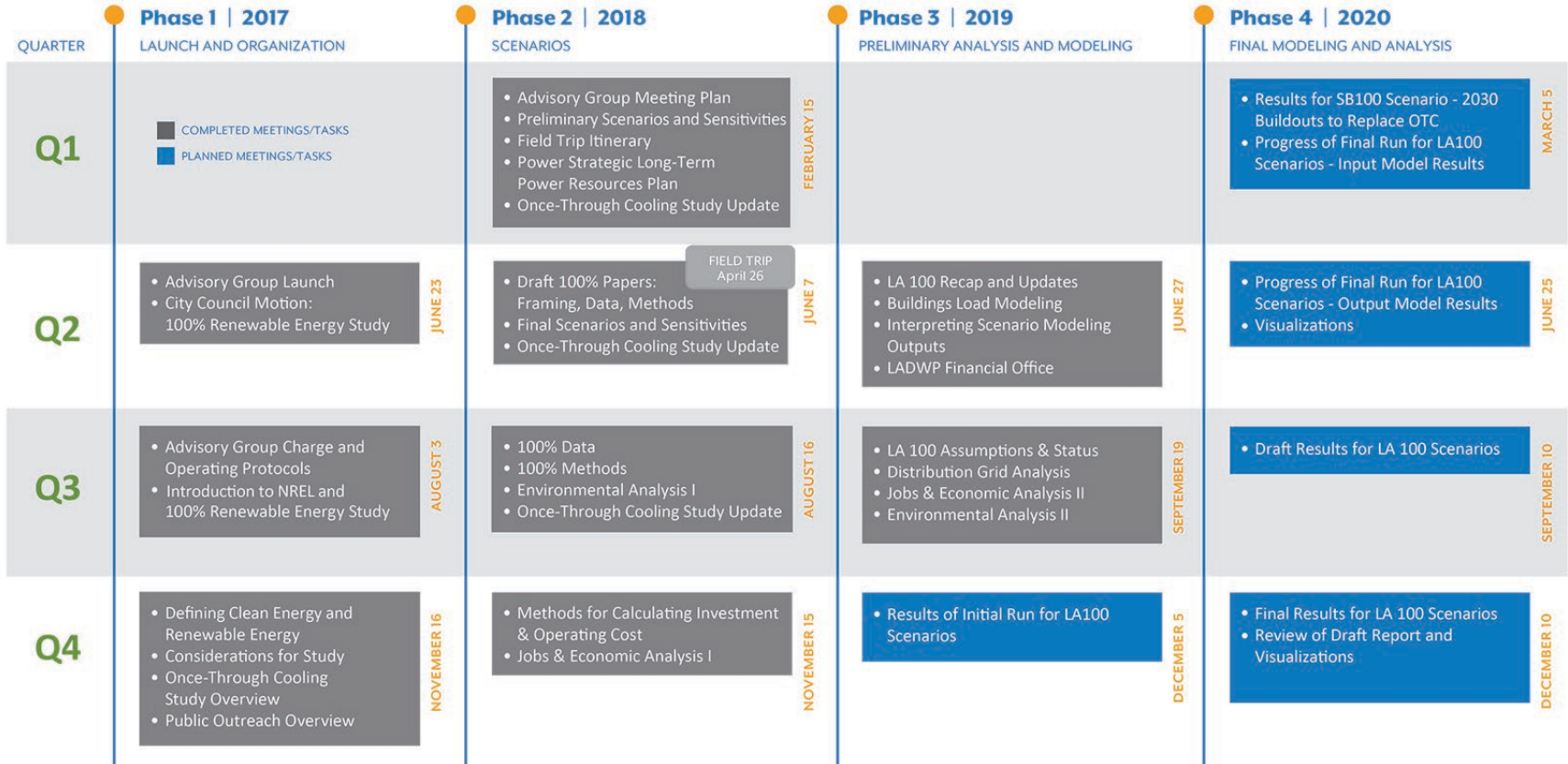
Final Run

- Buildings models have been rerun with higher temperatures
- In the process of assigning demand data to each building
- Adding local storage
- Output models continue to be improved



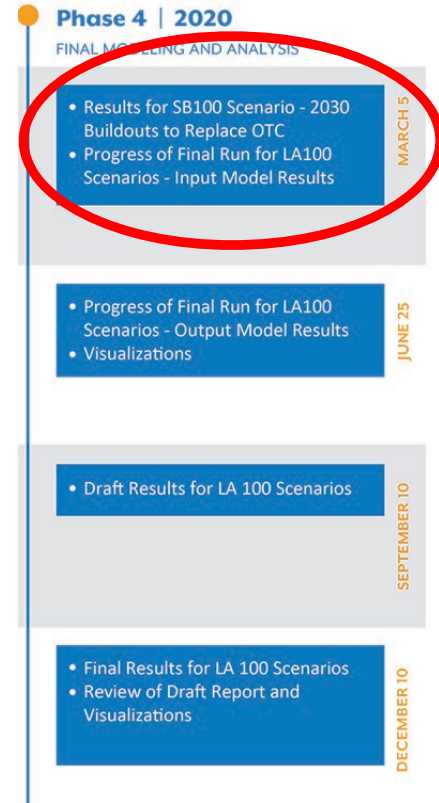
Expectations for 2020 AG Meetings

AG Timeline

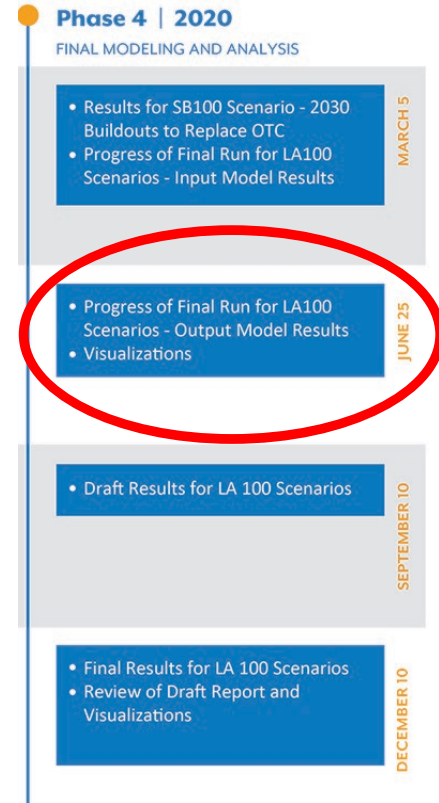


AG: March 2020

- **Results for 2030 Buildout (Focus on SB100)**
 - Represents an in-depth look at investments (bulk power and distribution grid) that can replace the OTC units
 - Will look at metrics of cost and reliability, including compared to Reference Case
- **LA100 Scenarios (2021-2045), Input Model Results**
 - Will review Final Run results:
 - Electricity demand projections (including buildings, EVs, and buses)
 - Local solar and storage (sites and ranking)
 - Options for demand response

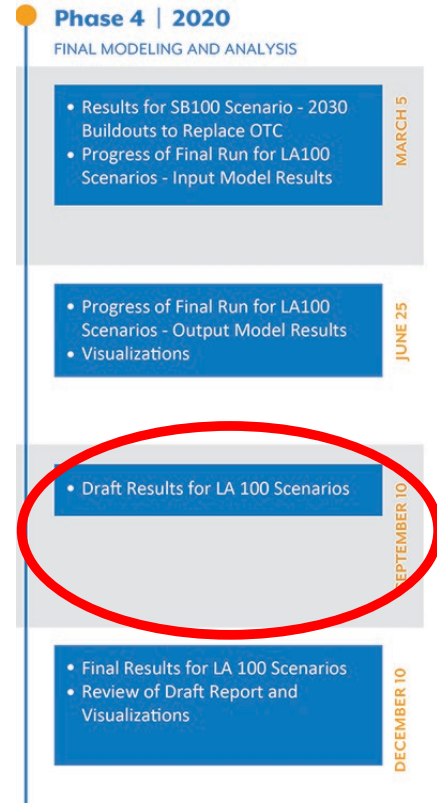


- **LA100 Scenarios (2021-2045), Output Model Results in Progress**
 - Review all output models; first look at investment pathways with final loads
 - Present on emissions inventory
 - Present progress on visualizations
- **June Feedback Goal:** Incorporate your feedback about additional questions that we can analyze based on results (without rerunning models)



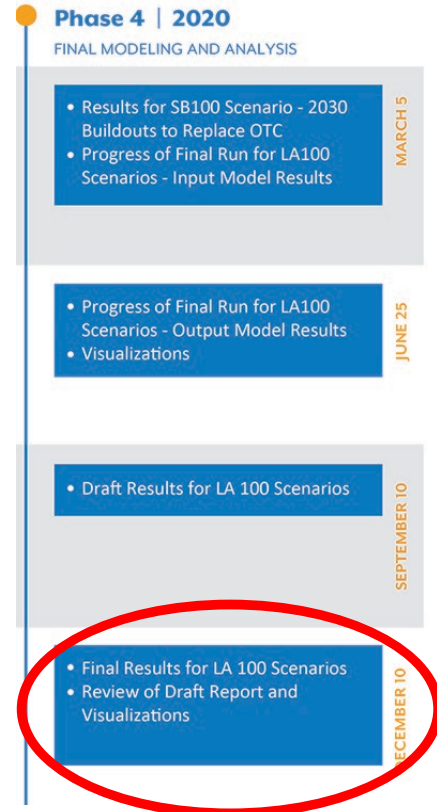
AG: September 2020

- **Draft Results for All Scenarios**
 - Results for all models except air quality will be complete
 - What are your questions?
 - Focus will be on finalizing how we communicate information, including improvements to our interactive visualizations



AG: December 2020

- Final Results: Air Quality and Environmental Justice
- Distribution of Draft Report and Visualizations
 - Request feedback and comments on the report
 - Types of feedback that will be most helpful:
 - Questions that we can answer but haven't
 - Caveats that we should add to the study (e.g., assumptions that might be out of date)
 - Key points that should be better emphasized
 - Explanations that can be improved
- Presentation by LADWP Financial Service Office



Follow-up Q&A from this Advisory Group Meeting

- Need time to digest and ask questions for the day?
- Like last two AGs, we will hold a webex-based Q&A after two weeks

- Mark your calendars for:

Tuesday, December 17, 2019

10:00 AM – 11:00 AM

Questions?



The Los Angeles 100% Renewable Energy Study