Update on the SB 100 Joint Agency Report

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Overview

- The CEC, CPUC, and CARB are developing the Joint-Agency SB 100 report, due to the legislature by January 1, 2021, which will review the policy and provide recommendations for planning and implementation.

Activity	Estimated Date
Kickoff Workshop (Sacramento)	September 2019
Scoping Workshop 1: Central Valley (Fresno)	September 2019
Scoping Workshop 2: Northern California (Redding)	October 2019
Scoping Workshop 3: Southern California (Diamond Bar)	October 2019
Technical Workshop (San Francisco)	November 2019
Modeling Inputs & Assumptions Workshop (Sacramento)	February 2020
Draft Modeling Results Workshop (Remote Only)	**September 2020**
Draft Report Workshop (Remote Only)	November 2020
Report due to Legislature	January 1, 2021

Draft Results Workshop - 9/2/20

- Remote attendance only with close to 400 attendees
- **Session 1** included staff presentations on the modeling framework and results
- **Session 2** included three stakeholder panels covering the following perspectives:

Resource Build Requirements

- **Ric O'Connell**, GridLab (M)
- **Danielle Mills**, AWEA
- **Bernadette Del Chiaro**, CALSSA
- **Alex Morris**, CESA
- **Logan Goldie Scot**, BNEF
- **Mateo Jaramillo**, Form Energy
- **Shannon Eddy**, Large-Scale Solar Association

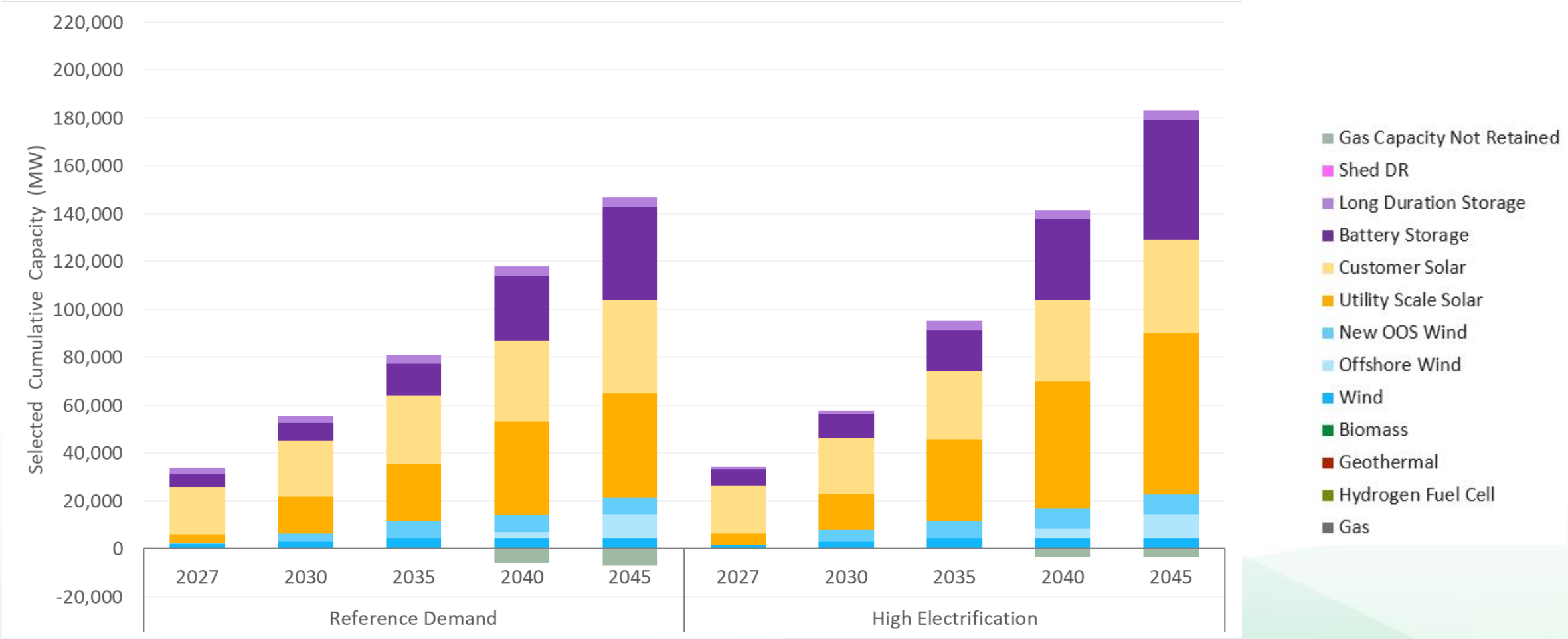
Grid Planning Implications

- **Mike Florio**, Gridworks (M)
- **Beth Vaughan**, CalCCA
- **Delphine Hou**, CAISO
- **James Barner**, LADWP
- **Erica Bowman**, SCE

Equity, Workforce and Additional Considerations

- **Aleecia Gutierrez**, CEC (M)
- **Shana Lazerow**, CBE
- **Elena Krieger**, PSE
- **Roger Lin**, DACAG
- **Mark Specht**, UCS
- **Shrayas Jatkar**, CWDB

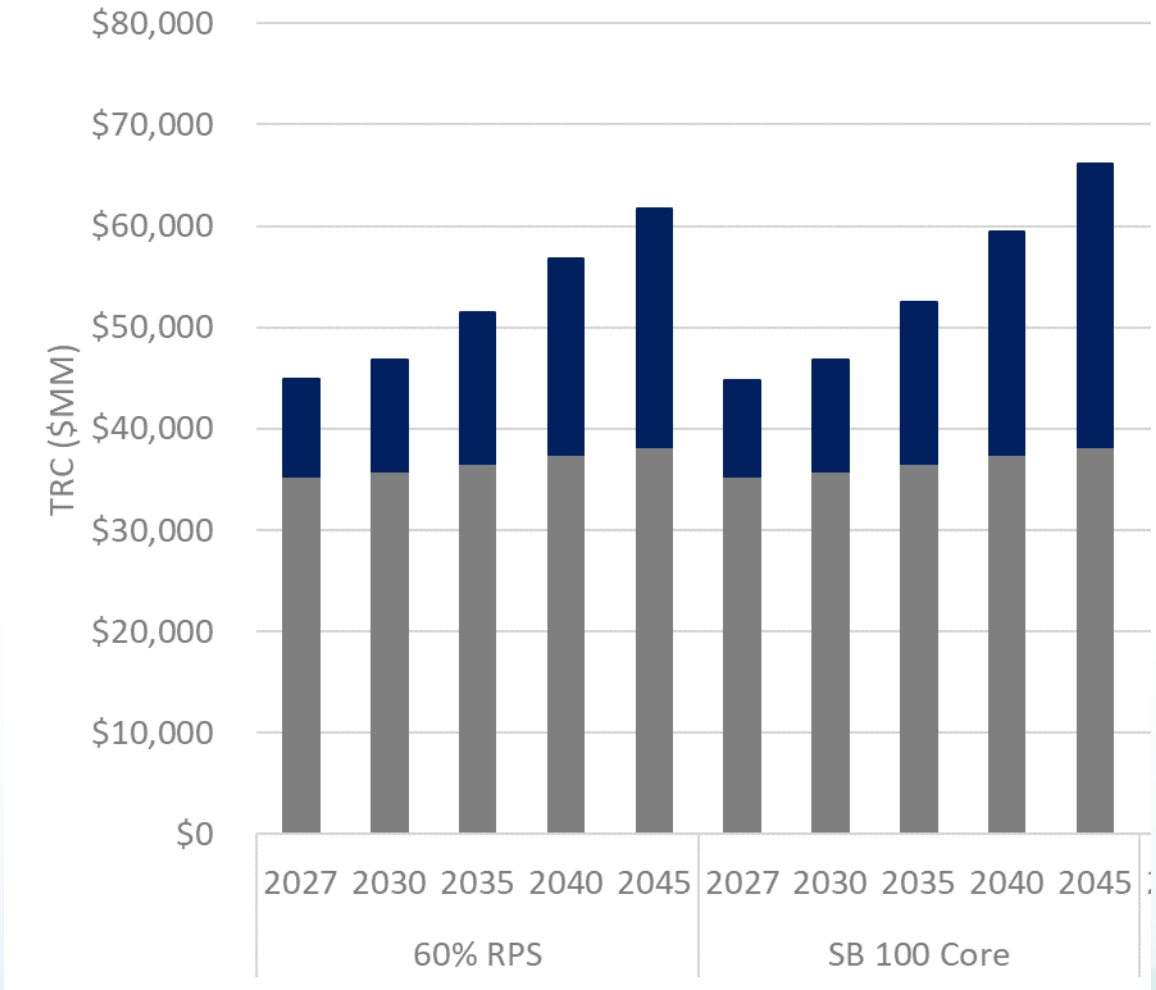
Core Scenario Results



As of 2019, there is 80 GW of in-state capacity in California.

Load Coverage: Core; Resource Options: All

Total Resource Cost



2045 Scenario Costs

Scenario	Total Resource Cost ($B)	Average Cost (¢/kWh)
60% RPS	$62	14.8
SB 100 Core	$66	16.0

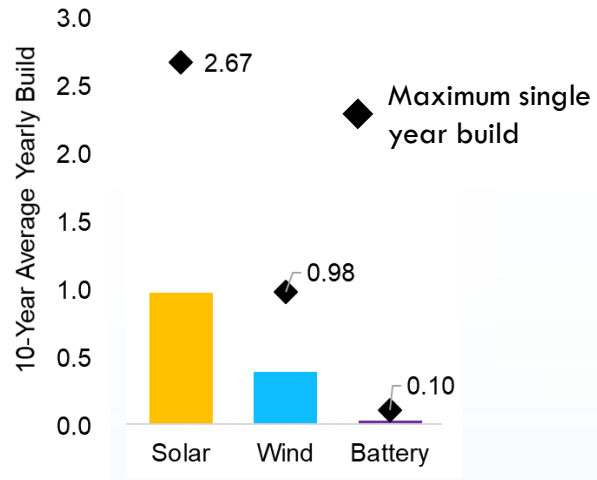
Total resource cost (TRC) includes existing system costs (baseline costs), capital investments and operation costs.

Demand: High Electrification; Resource Options: All

Resource Build Rates

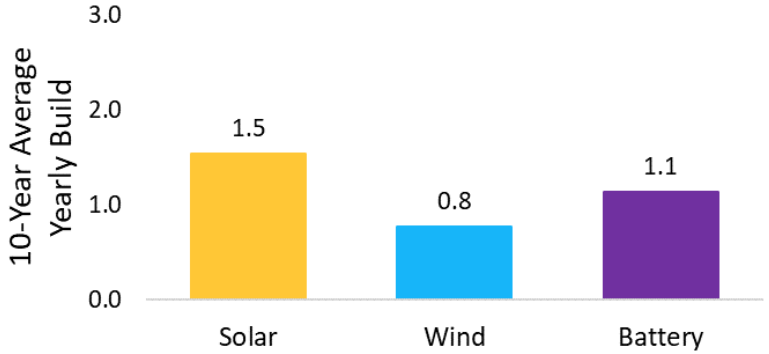
All build rates shown in "GW/year"

Average Build Rate to Date

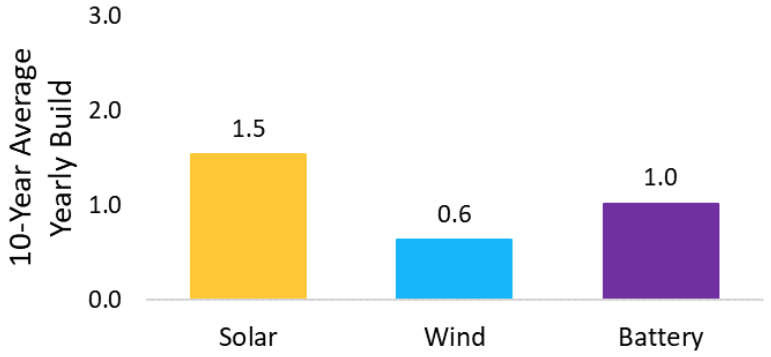


Average Build Rate to 2030

High Electrification Demand

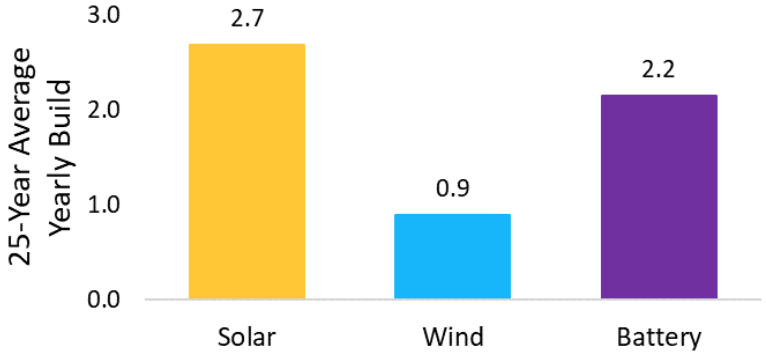


Reference Demand

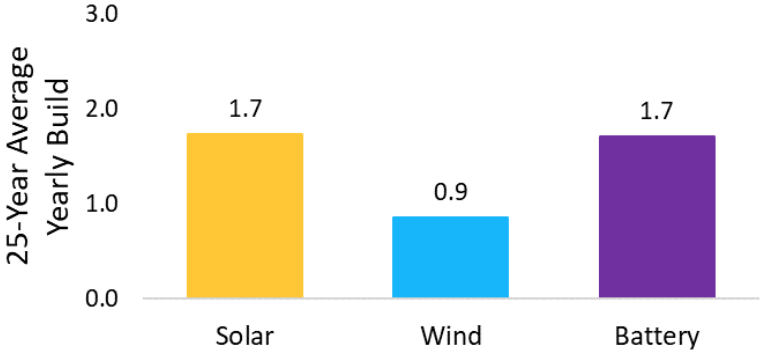


Average Build Rate to 2045

High Electrification Demand



Reference Demand



Load Coverage: Core; Resource Options: All

Key Takeaways from Draft Results

- **SB 100 is achievable with existing technologies.**
  - Cost reductions and innovation in zero carbon technologies, as well as demand flexibility and energy storage development can further reduce implementation costs.
- **Portfolio diversity is generally valued by the model.**
- **Sustained record setting resource build rates will be required to meet SB 100.**
- **Natural gas capacity is largely retained, but fleet-wide utilization decreases by 50% compared to a 60% RPS future.**
  - Cost reductions and innovation in zero carbon firm resources and storage resources may reduce economic gas fleet retention.

Workshop Comments

- **Achieving SB 100 is possible but will be a big push.** Requires a coordinated regulatory environment for system planning and to address bottlenecks.
- **Results are directionally useful, but more work is needed** to address specific implications, such as reliability, land-use and the location of resources, and equity.
- **Better capture resource potential of emerging and non-generation resources**, such as hydrogen, lower-cost geothermal, behind the meter resources, long-duration energy storage, and demand flexibility.
- Incorporate **social costs and non-energy benefits**
- Explore the use of **zero-carbon firming resources to further reduce remaining gas** and **prioritize retirements in disadvantaged communities**.
- **Workforce programs** require strong partnerships, including with employers. Pre-apprenticeship programs have been a successful model.
- **SB 100 provides a helpful forum** to address a range of topics across agencies.

Next Steps

- Staff will review additional written comments (due 9/15) and continue working with the joint agencies to develop the draft report.
- Draft report workshop planned for later this fall.