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GOING ALL THE WAY: CALIFORNIA'S COMMITMENT TO 100% RPS

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Agenda

- Senate Bill ("SB") 100
- Political Prognostications
- What Does 100% Look Like?



SENATE BILL ("SB") 100

California's Renewables Portfolio Standard (RPS)

- California's RPS program requires investor-owned utilities (IOUs), publicly owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources
- Established in 2002
- Accelerated in 2006
- Expanded in 2011
- Enhanced in 2015
- SB 100 did not pass in 2017



SB 100—Basics.

- Introduced by Senator De León.
- Titled “The 100 Percent Clean Energy Act of 2017.”
- Would have amended and added sections of the Public Utilities Code related to California’s Renewable Portfolio Standard Program.
 - Amends Sections 399.11, 399.15, and 399.30;
 - Adds Section 454.53.
- Current status: failed to pass in 2017; last amended in the Assembly on September 11, 2017.



SB 100—What Would It Have Changed?

- The current RPS Standard.
 - Requires all retail sellers to procure a minimum quantity of electricity from eligible renewable energy resources to achieve:
 - ~~25% of retail sales by December 31, 2016,~~
 - As reported by the CPUC, California's three large IOUs collectively served 34.76% in 2016.
 - 33% by December 31, 2020,
 - 40% by December 31, 2024,
 - 45% by December 31, 2027, and
 - 50% by December 31, 2030.



SB 100—What Would It Have Done?

- Would have required retail sellers and local publicly owned electric utilities procure eligible renewable energy resources to achieve:
 - 44% of retail sales by December 31, 2024,
 - 52% by December 31, 2027, and
 - 60% by December 31, 2030.
- Would have stated that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to serve California end-use customers and electricity procured to serve all state agencies no later than **December 31, 2045**.
- Would have required achievement of 100% policy without increasing carbon emissions elsewhere in the western grid, and disallows resource shuffling.

SB 100—What It Would Not Have Done.



- Provided 100% renewable energy as target, but does not mandate achievement of that goal.
 - Instead, it required state agencies to incorporate into existing climate programs the planning goal and regulatory requirement of achieving 100-percent reliance on renewable energy resources or zero-carbon resources by the end of 2045.
- Did not define “zero-carbon resources.”
 - which generating facilities match this description?

SB 100—A Closer Look...

- What does 100% RPS actually mean?
 - 60% of California's electricity would be generated by RPS-eligible renewables (solar, wind, geothermal, biomass, small hydro, renewable methane, ocean wave or thermal, or fuel cells using renewable fuels);
 - The remaining 40% would be generated by additional renewables or other electricity generation that do not qualify under RPS, but do not burn fossil fuels.
 - Example: large hydroelectric power facilities are not RPS-eligible, but are "zero carbon."
 - An Answer to SB 100 FAQs provides: "this latter provision leaves the door open to new technologies we may not know about today that could meet future state needs while protecting the environment."
(<http://focus.senate.ca.gov/sb100/faqs>)
 - What about: nuclear power, and gas-fired power plants that capture their carbon emissions?
- Timing and open issues

POLITICAL PROGNOSTICATIONS

Political Prognostications

- Bill was opposed by opposition from investor-owned utilities.
 - State's largest IOUs raised concerns about potential increases in electricity costs, and that 100% goal would not be applied equally to smaller competitors.
 - Worried that 100% goal, depending how defined and caveated will drive up costs needlessly given other alternatives.

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Political Prognostications

- Unions were also against the bill.
 - International Brotherhood of Electrical Workers, Local 1245 felt that legislators had gone back on a promise to protect union jobs and to assure the security of the power grid.
 - Pushing against DG community that storage resources be owned / developed by LSE and Union Jobs.
- Mixed views about CAISO expansion.
 - SB 350 required legislation by January 1, 2019 to alter CAISO governance board.
 - Strong support in the Governor's office to expansion of CAISO footprint.
- Lingering Questions in what gets counted and what does not.



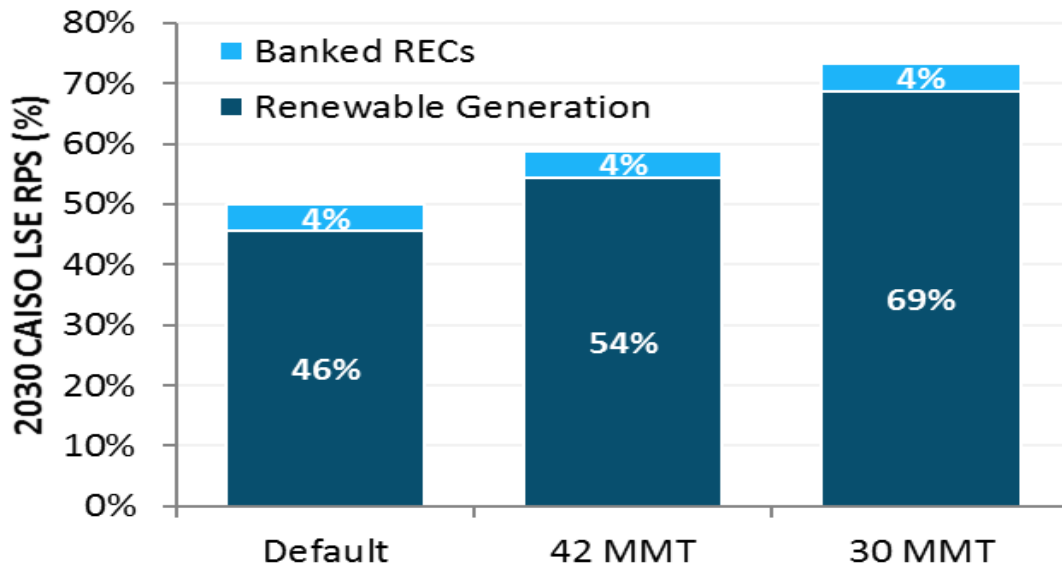
Political Prognostications

- Governor's legacy in last year
- Changing of the guard with Kevin DeLéon relinquishing President Pro Tem position to run for Senate
- Loss of Nancy McFadden, key advisor and advocate for Governor on CAISO Expansion
- Concerns about CA losing control over RPS with other states' policies and energy portfolios (coal), particularly in Trump-Pruitt world.
- Possible passage but high degree of uncertainty—perception is that departure of both DeLéon and McFadden have resulted in bill becoming stalled. Some in Governor's office say don't count out

WHAT DOES 100%
LOOK LIKE?

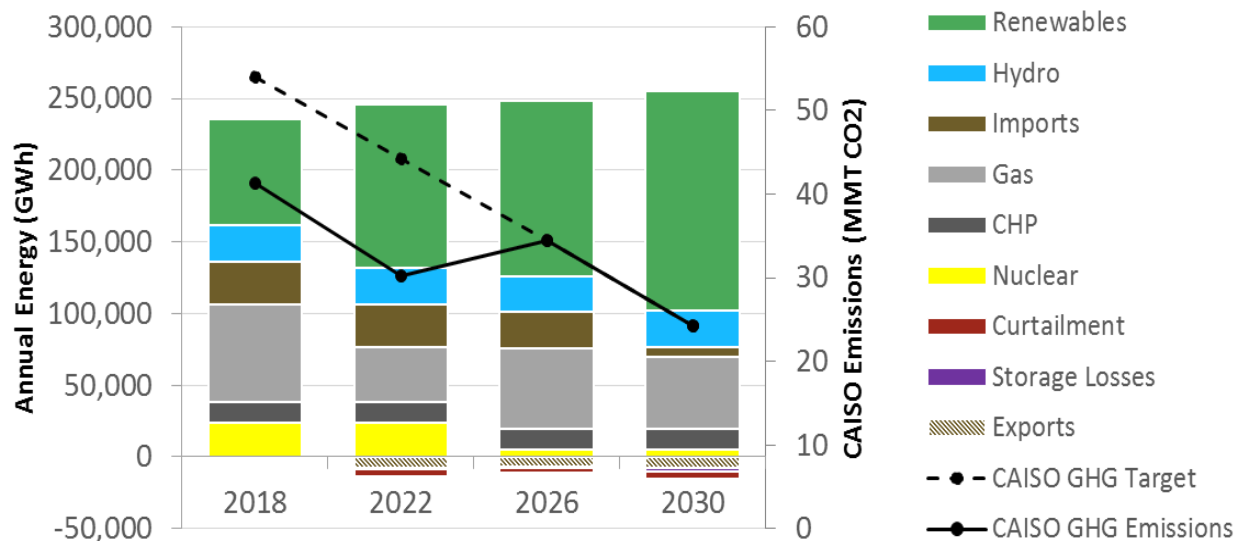
What does 100% RPS Look Like?

- CPUC IRP modeling, while focused on GHG, is instructive
- 30 MMT case = ~73% renewable in 2030



What Does 100% Look Like?

- If optimizing for least cost GHG reductions, gas stays in the mix

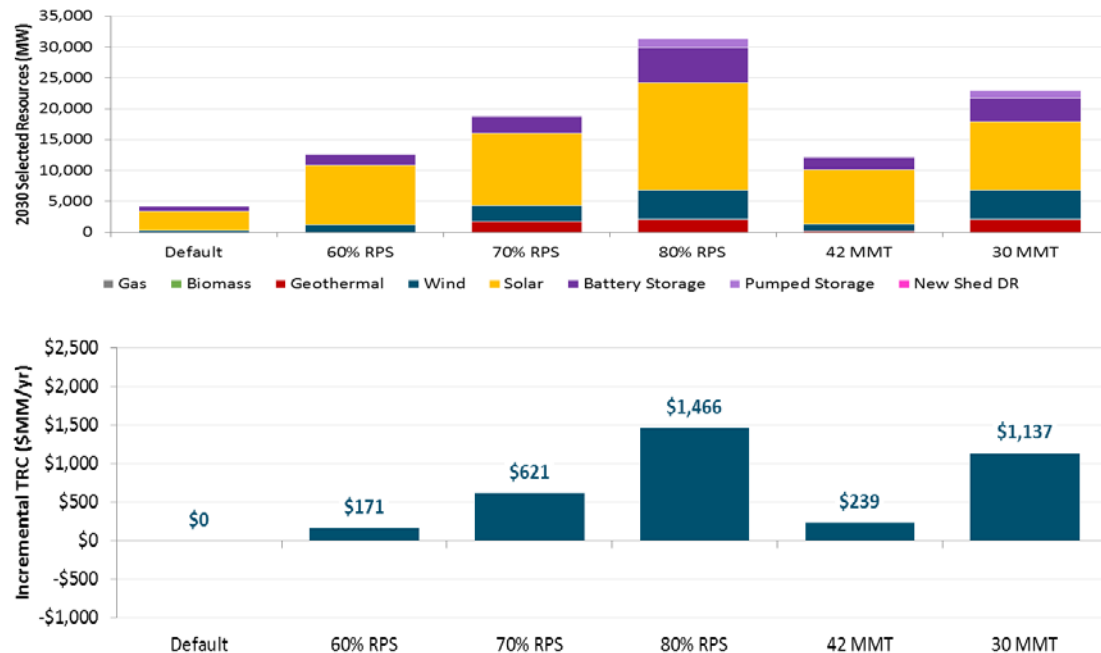


What does 100% RPS Look Like?

Metric	IRP 2030 30 MMT Case (~73% RPS)
Marginal resource additions (relative to 50% RPS base case)	<ul style="list-style-type: none">• 11,000 MW solar PV• 4,800 MW wind• 2,000 MW geothermal• 3,800 MW battery storage• 1,200 MW pumped storage
Levelized Total Resource Cost	\$40.9 billion per year
Incremental TRC (Relative to default case)	+ \$1.1 billion/year <i>(compare with \$239 MM/year increase to go from Default 51 MMT to 42 MMT)</i>
Change in Rev. Req.	+ \$6.4 billion/year (relative to 2018) + \$2 billion/year (relative to Default 2030)
Impact on Average Retail Rate	+ 4.1 c/kwh (relative to 2018 rates)
Marginal GHG Abatement Cost	\$283/metric ton



What does 100% RPS Look Like?



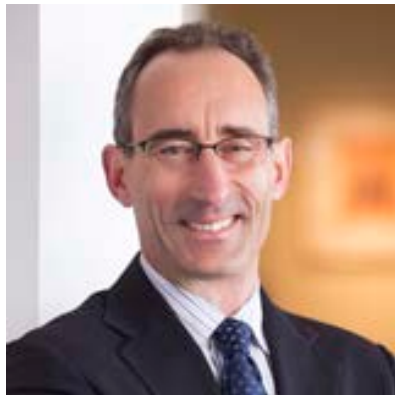
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QUESTIONS?

Biography



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Since 2003, William (Bill) D. Kissinger has focused his practice on energy matters in California and nationally along with related environmental issues. He developed this practice after spending two years working as senior deputy legal affairs secretary to Gov. Gray Davis and serving as the primary legal contact for the Office of the Governor with Cal EPA, Cal Health and Human Services Agency, and the Resources Agency. Bill previously spent four years in Washington, DC working in senior positions at the White House and the US State Department.

Biography



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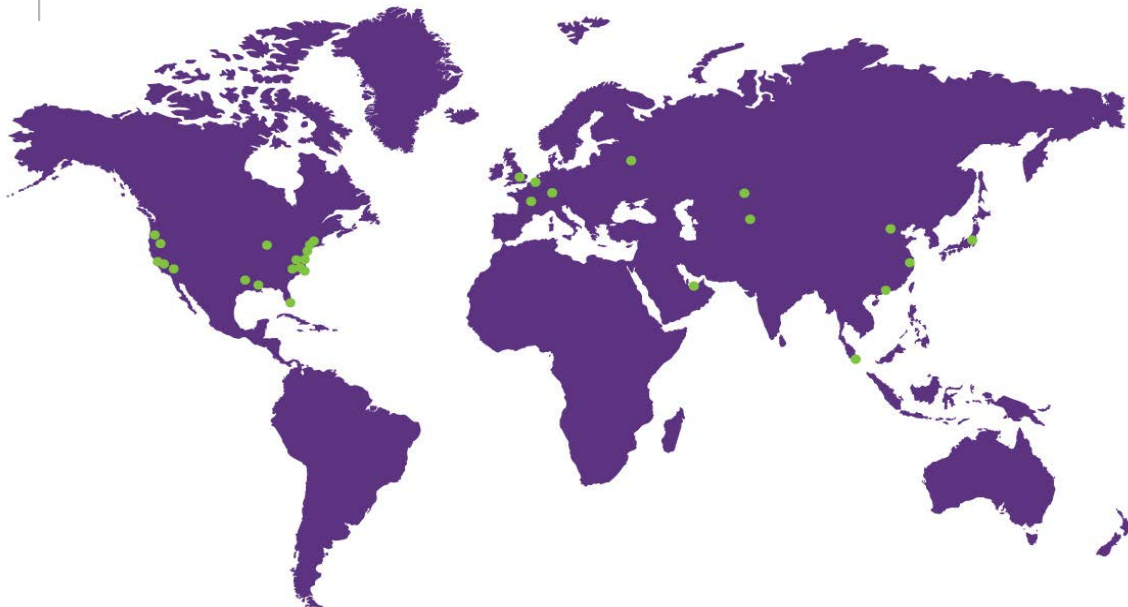
Camarin E.B. Madigan focuses her practice on real estate, energy, land use, natural resources, and environmental law. She advises developers, landowners, lenders, and public agencies regarding energy, land use entitlements, acquisitions/dispositions, and leasing for complex development projects and commercial properties. She also advises clients on matters related to the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), the Warren-Alquist Act, and the Subdivision Map Act.

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