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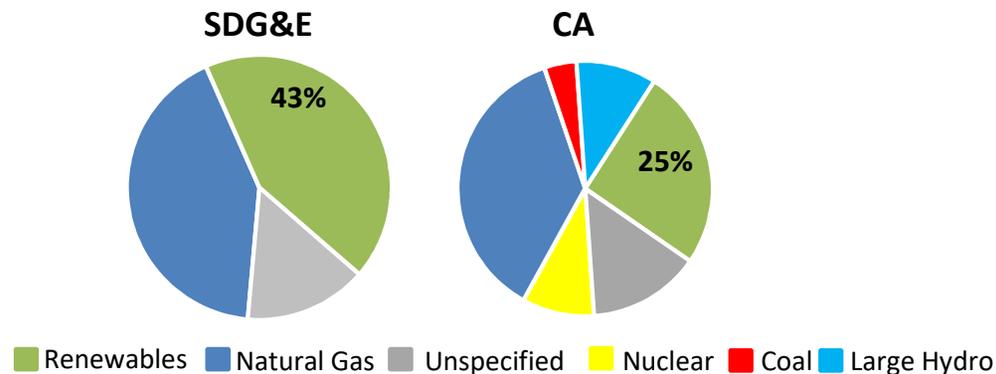
Procurement Programs in California



Presentation to Sustainable Energy Advisory Board
February 8, 2018

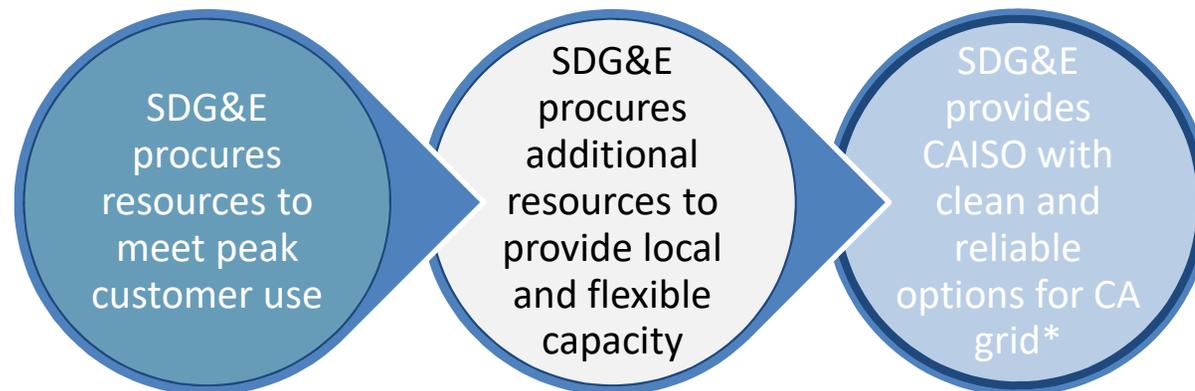
- All Load Serving Entities (LSEs), including Investor Owned Utilities (IOUs), Publicly Owned Utilities (POUs), Direct Access (DA) and Community Choice Aggregation (CCA),* procure energy (generation) for their customers' use
- All energy to meet use is procured from the California Independent Service Operator (CAISO) in the day-ahead and real-time markets
- Energy resources can come from conventional or renewable sources
- California's Renewable Portfolio Standard (RPS) requires all LSEs to procure 50% renewable power by 2030

2016 SDG&E Energy Mix vs. CA Average



*The definition of LSEs in this presentation refers to all LSEs under the jurisdiction of the California Public Utilities Commission (CPUC).

- To ensure reliability, all LSEs must also procure system-wide capacity in the amount of 115% of monthly peak use for its customers
- Capacity is like a “reservation” for the total amount of energy available to be delivered to meet the greatest customer use, for example, the hottest day in August
- Based on CAISO studies and local area needs, the CPUC’s Resource Adequacy (RA) program requires all LSEs to procure a specified amount of capacity, in certain areas, given conditions on the grid
- Today, LSEs rely more heavily on capacity resources from conventional sources that are available at all times and do not depend on sun or weather*



*Renewable Resources can also provide capacity, however this capacity is provided at a lesser amount due to solar and wind intermittency.



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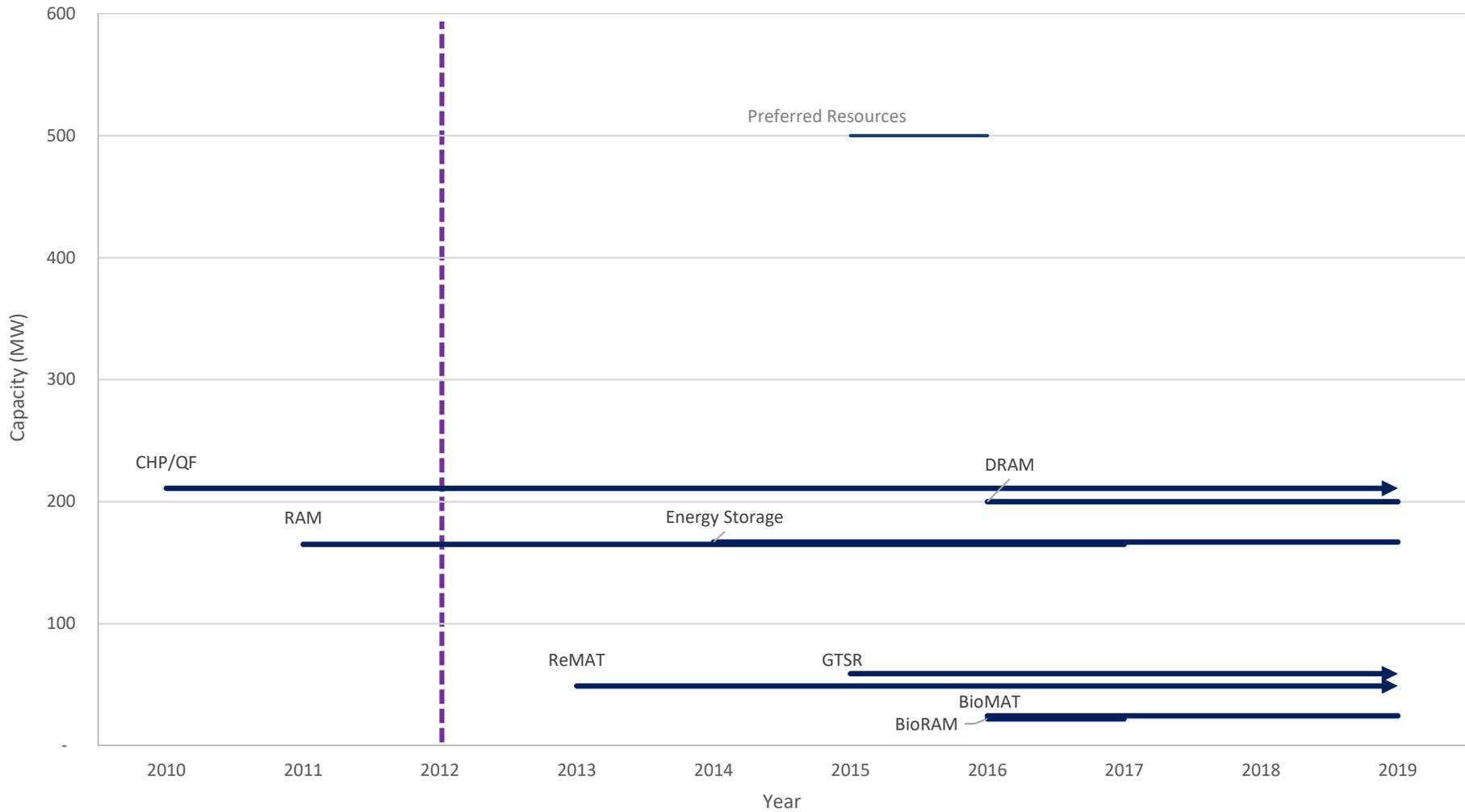
California Mandated Procurement Programs

Program Information							LSE with Obligation*		
Name	Purpose	Size (MW)	Effective Date	Source	RPS Eligible	How Costs are Recovered	IOU	POU	DA/CCA
Bioenergy Market Adjusting Tariff (BioMAT)	Develop bioenergy renewables less than 3 MW	250	2015	SB 1122	Yes	PCIA/ERRA**	X		
Bioenergy Renewable Auction Mechanism (BioRAM)	Created per Governor order, to mitigate wildfire risk	146	2016	SB 859	Yes	Nonbypassable/CAM**	X	X	
Qualifying Facility (QF)/ Combined Heat Power (CHP)	Meet PURPA with must take qualifying renewables smaller than 80 MW and cogeneration facilities	May exceed 3000	2010	PURPA; AB 1613 CPUC D.10-12-035; CPUC D.07-09-040	No	Nonbypassable	X		
Demand Response Mechanism (DRAM)	Enable third-party demand response providers to participate directly in market; for capacity	556	2016	CPUC R.13-09-011	No	Distribution Rates	X		
Energy Storage (ES)	Reliability to meet peak load with energy storage	1,325	2013	AB 2514	No	PCIA/ERRA	X	X	X
Renewable Auction Mechanism (RAM)	Create a market for renewables less than 20 MW	2,100	2011	CPUC D.10-12-048	Yes	PCIA/ERRA	X		
Renewable Market Adjusting Tariff (ReMAT)	Develop qualifying solar, wind, geothermal and hydro renewables less than 3 MW	750	2013	SB 380; SB 32, SBX1-2	Yes	PCIA/ERRA	X	X	
Renewable Portfolio Standard (RPS)	Percent targets of electricity retail sales to be served by renewable sources	No Cap	2003	SB 1078; SBX1-2; SB 350	Yes	PCIA/ERRA	X	X	X
Resource Adequacy (RA)	Annual reliability needs	115% peak	2006	AB 3820	No	PCIA/ERRA and Nonbypassable/CAM	X	X	X
Green Tariff Shared Renewables (GTSR)	Community solar and additional RPS options for bundled customers	600	2016	SB 43	Yes	Participants	X		
SDG&E Other Long Term Obligations (Preferred Resources)	Retirement of San Onofre created SDG&E requirement to replace local capacity (reliability)	500	2015	CPUC D.14-03-004	No	Nonbypassable/CAM	X		

* Reflects which LSE is specified in the mandate. Each LSE determines what procurement to pursue based on its own governance and regulatory structures. ** The Energy Resource Recovery (ERRA) recovers costs associated with SDG&E's energy procurement from bundled customers. PCIA is a departing load fee and CAM recovers reliability-related costs. IOU costs allocated to other LSEs are recovered through CAM and PCIA.



SDG&E Mandated Procurement: Recent Trends



--- Last voluntary RPS contract entered into by SDG&E.

- Per Senate Bill 350, the CPUC’s Integrated Resource Planning (IRP) proceeding has been launched to guide future procurement needed to meet California’s GHG reduction goals
- The Proposed Decision specifies that, among other things: the IRP will consist of a two-year planning cycle; all LSEs must provide plans to the CPUC for approval; and the CPUC is authorized to mandate procurement from any/all LSEs if required
- The first CPUC procurement authorization is anticipated at the end of 2018

Statutory Principles for all LSEs*

Optimal Portfolio

Diverse and balanced

Cost-effective

Zero carbon emitting

Must Ensure

All LSEs participate

Meet GHG reduction targets
40% reduction from 1990
levels

At least 50% RPS by 2030

Must Achieve

Just and reasonable rates

Minimize bill impact

System and local reliability

*These requirements are outlined in Public Utilities Code section 454.5.



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Questions?