Transmission Planning to Support 33% Renewables Portfolio Standard

CEC IEPR Lead Commissioner Workshop

California and Western States Transmission Planning and Permitting Issues

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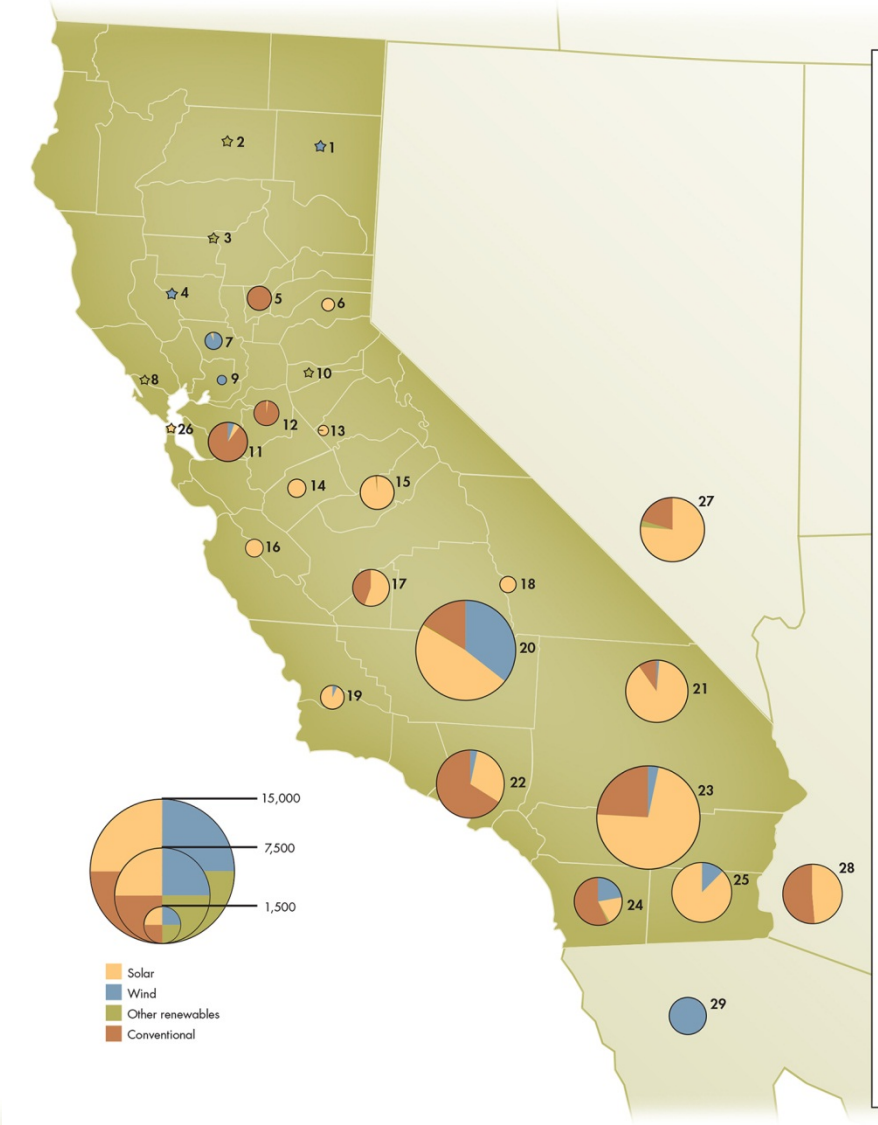
Transmission underway to meet 33% RPS in 2020

	Transmission upgrade	Approval status		Online
		ISO	CPUC	
1	Carrizo-Midway	Pending LGIA	NOC effective	2013
2	Sunrise Powerlink	Approved	Approved	energized
3	Eldorado-Ivanpah	LGIA	Approved	2013
4	Valley-Colorado River	Approved	Approved†	2013
5	West of Devers	LGIA	Not yet filed	2019
6	Tehachapi (segments 1, 2 & 3a of 11 completed)	Approved	Approved	2015
7	Cool Water-Lugo	LGIA	Not yet filed	2018
8	South Contra Costa	LGIA	Not yet filed	2015
9	Borden-Gregg	LGIA	Not yet filed	2015
10	Imperial Valley C Station	Approved	Not yet filed	2013
11	Sycamore-Penasquitos	Pending	Not yet filed	2017
12	Lugo-Eldorado line reroute	Approved	Not yet filed	2020
13	Lugo-Eldorado series cap	Pending	Not needed	2016
14	Warnerville-Bellota recond.	Approved	Not yet filed	2017
15	Wilson-Le Grand recond	Approved	Not yet filed	2020

Based on draft 2012/13 Transmission Plan

ISO Queue Status (up to but not including Cluster 6)

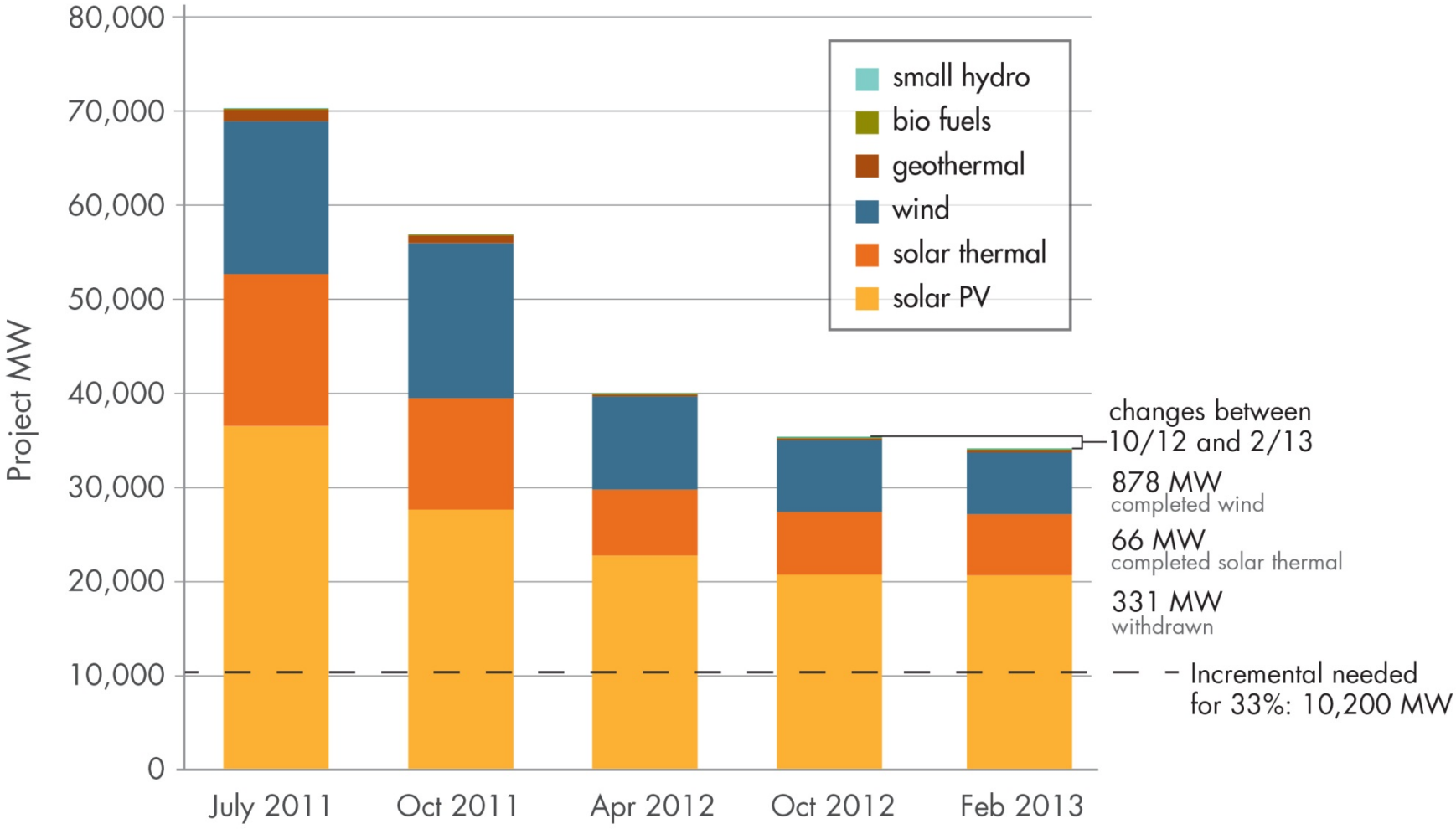


Interconnection queue by county

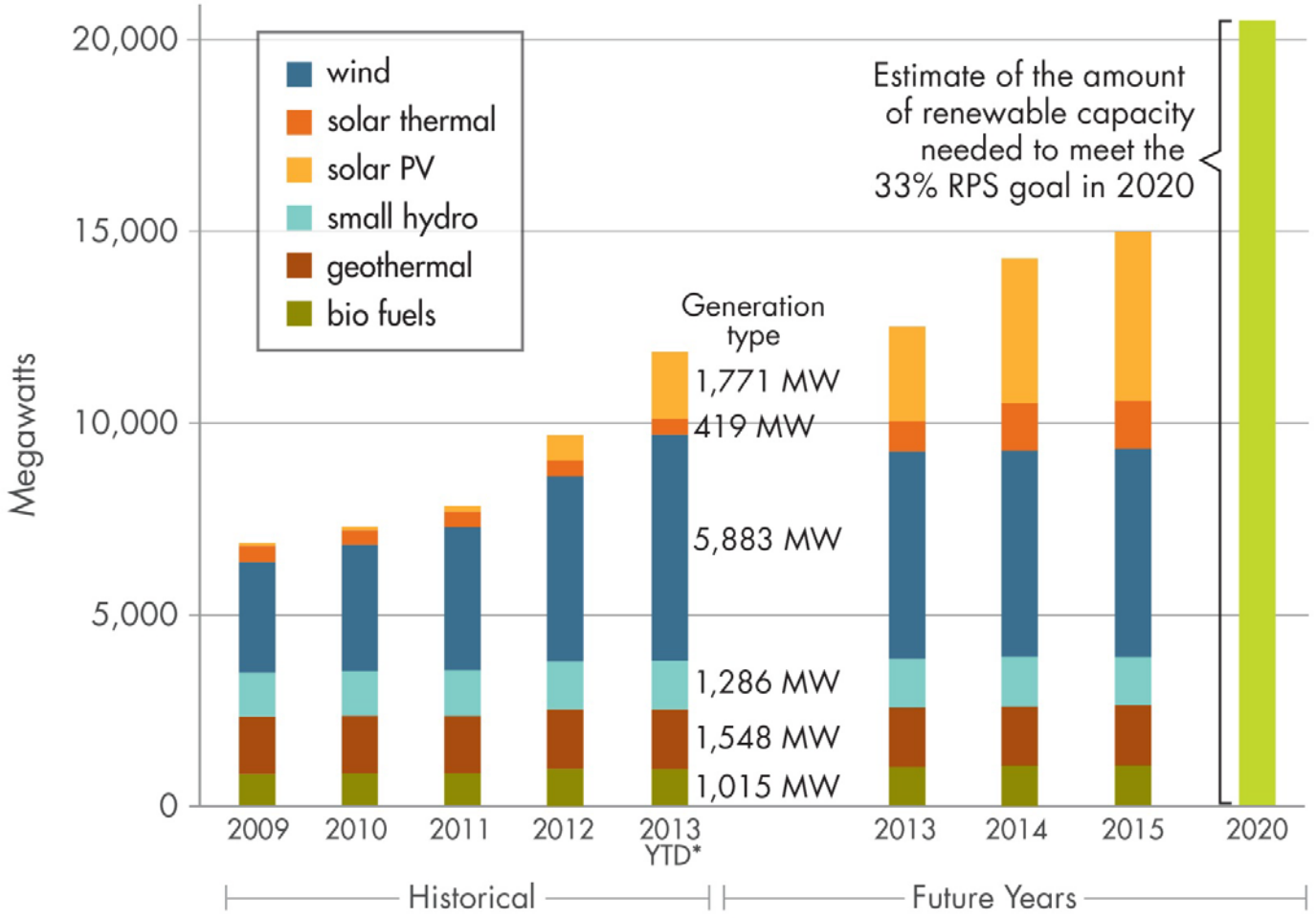
	County	# of Projects	Megawatts Renewables	Megawatts Conventional	Megawatts Total
1	Lassen	2	71		71
2	Shasta	1	27		27
3	Butte, Glenn, Tehama	3	10		10
4	Lake, Colusa	1	66		66
5	Sutter, Yuba	2		910	910
6	Placer	1	220		220
7	Yolo	3	533		533
8	Marin, Sonoma	3	92		92
9	Solano	2	330		330
10	Amador	1	18		18
11	Alameda, Contra Costa, Santa Clara	13	193	1,698	1,891
12	San Joaquin	5	20	875	895
13	Stanislaus, Tuolumne	4	127	0	127
14	Merced	5	462	49	511
15	Fresno, Madera	40	1,538	15	1,553
16	Monterey, San Benito	2	520		520
17	Kings	24	824	649	1,473
18	Tulare, Inyo	7	190		190
19	San Luis Obispo, Santa Barbara	6	896		896
20	Kern	60	7,555	1,447	9,002
21	San Bernardino	18	3,649	402	4,051
22	Los Angeles, Orange	37	1,897	3,576	5,473
23	Riverside	25	6,157	1,920	8,077
24	San Diego	21	812	1,028	1,840
25	Imperial	13	2,314		2,314
26	San Francisco	1	20		20
	In-state Totals	297	28,541	12,569	41,110
27	Nevada	23	3,447	950	4,397
28	Arizona, New Mexico	4	1,190	1,250	2,440
29	Mexico	3	1,120		1,120
	Out-of-state Totals	30	5,757	2,200	7,957
	TOTAL ALL PROJECTS	**327**	**34,298**	**14,769**	**49,067**

as of February 15, 2013

Change in renewable capacity in the ISO queue
(since July 2011 and by technology type)



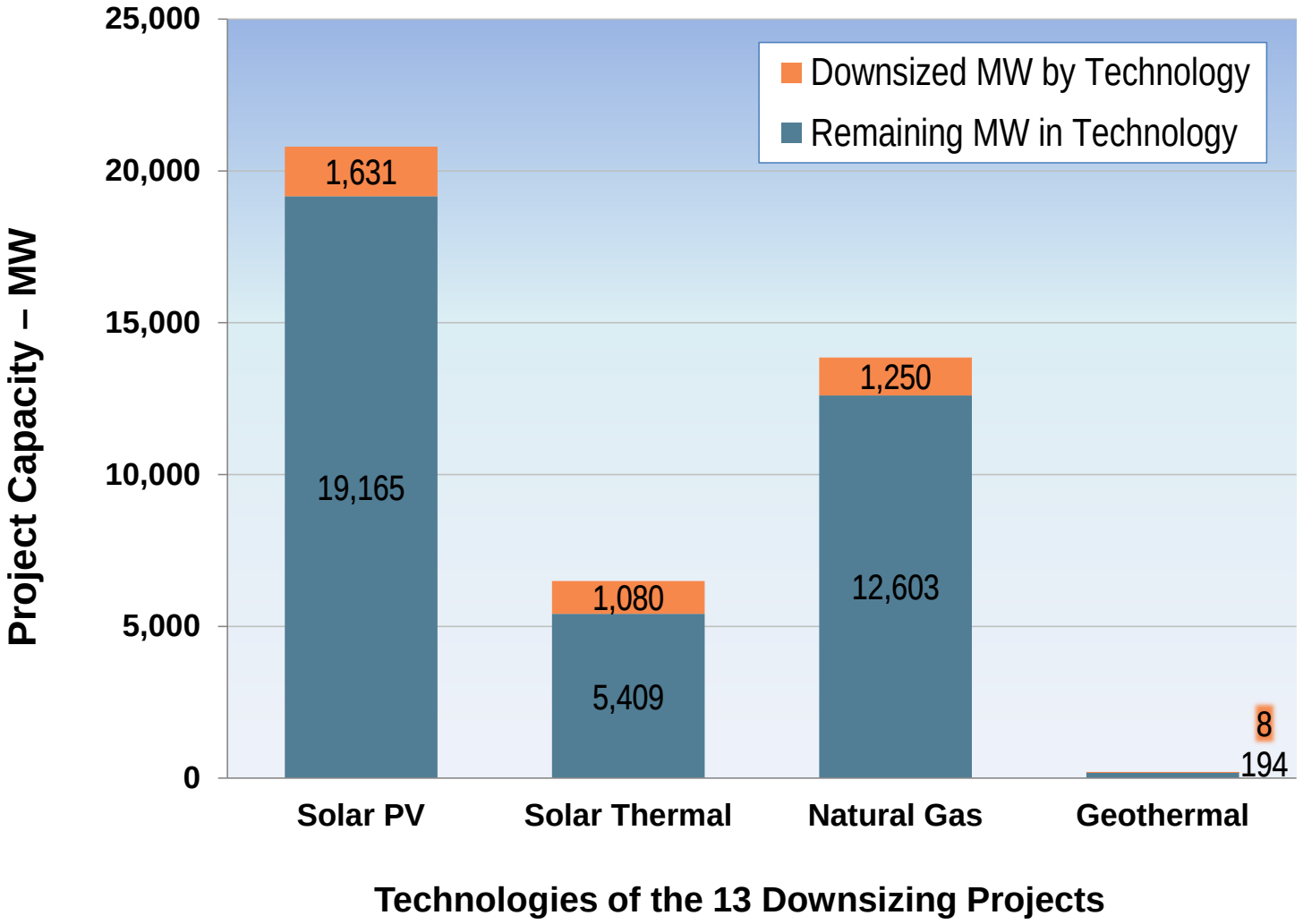
Current and projected renewable generation capacity in operation within the ISO



*All online resources included in the 2013 YTD, including those yet to achieve full commercial operation.

Results of Downsizing Request Window

Technologies and Capacity Reductions of Projects Requesting to Downsize



Status of interconnection studies and Generator Interconnection Agreement (GIA) process

Study process

- All cluster studies completed through Cluster 4 (29,285 MW)
- Cluster 5 studies have completed Phase I (5,013 MW)
- C3/C4 2nd postings and C5 initial postings due in May (14,236 MW)
- Downsizing studies began February 19, 2013

GIA process

- 153 GIAs remaining to begin/complete negotiations (~19,000 MW)

Impacts of adding flexibility through downsizing

- Downsizing GIA revisions will impact negotiation of outstanding GIAs

Generator Interconnection and Deliverability Allocation Procedures (GIDAP) addressed three major deficiencies of prior generator interconnection procedures (GIP).

1. Plan and approve major ratepayer-funded upgrades under a single, holistic transmission planning process

   Minimize role of GIP in driving rate-based upgrades by integrating transmission planning (TPP) with GIP

2. Ratepayers will cover delivery network upgrade costs only for projects aligned with TPP resource portfolios

   Prior GIP required ratepayers to fully reimburse new generation projects for all network upgrade costs

3. Structure of GIDAP study process will produce realistic results even with extreme queue volume

   Huge volume drives unrealistic upgrade requirements

Latter issue (previous slide) was impetus for Cluster 1-4 technical bulletin – addressed on an interim basis.

- A delivery network upgrade originally identified during the GIP Phase II interconnection study process for the current cluster (i.e., clusters 1 and 2) may be removed from the Phase II study results if the upgrade is not needed in the current transmission plan and satisfies at least one of the following criteria:

  a) The network upgrade consists of new transmission lines 200 kV or above, and has capital costs of $100 million or greater; or

  b) The network upgrade has a capital cost of $200 million or more.

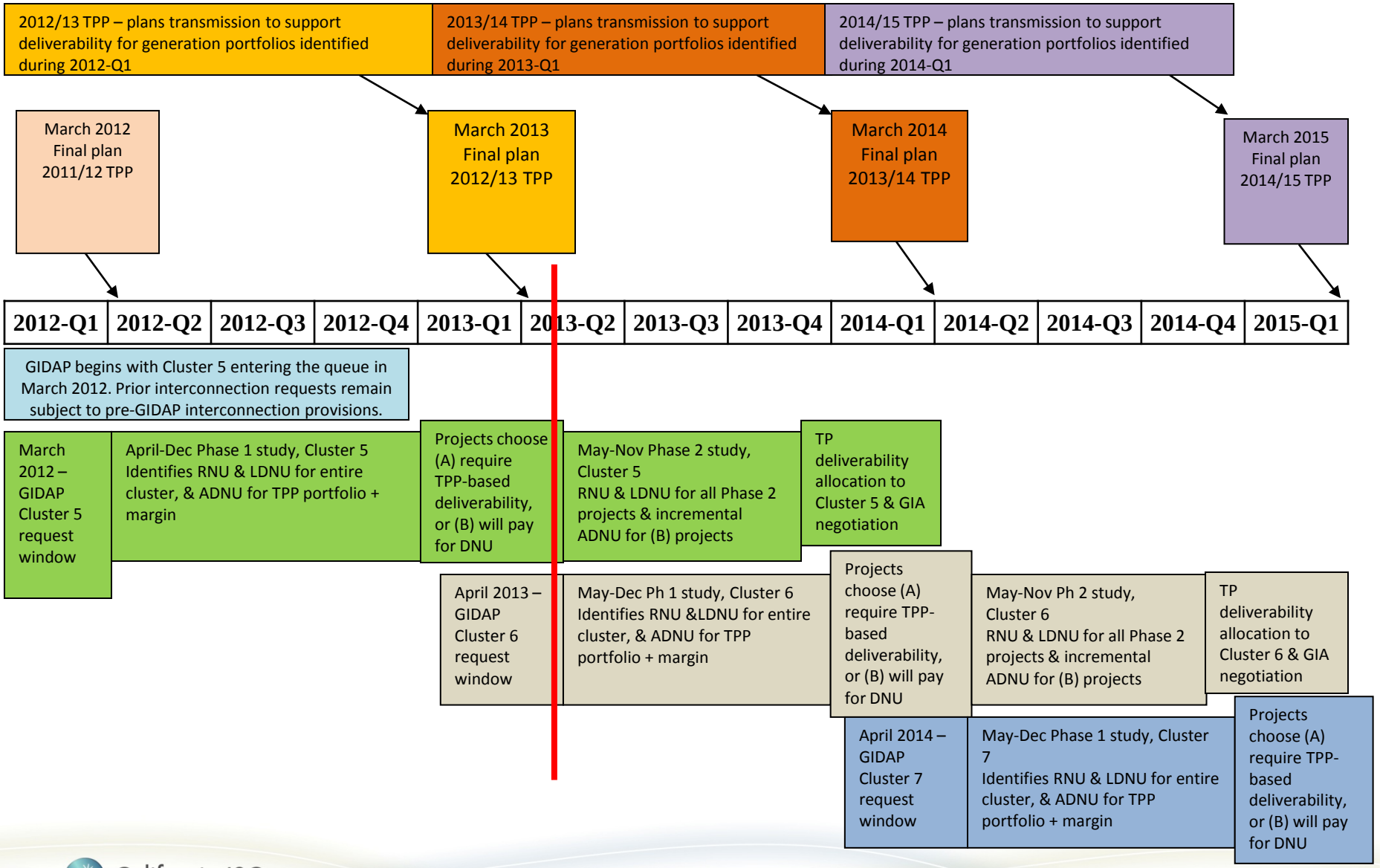
Central design concept builds on the new “public policy-driven” transmission category created in 2010

- Observation: Most significant & costly interconnection upgrades are for resource adequacy deliverability
- Annually develop generation resource portfolios for TPP
  - Identify public policy upgrades needed to provide deliverability
  - Transmission plan provides MW of deliverability in portfolio areas
- Allocate rate-based TP deliverability to projects based on development milestones
  - Projects allocated rate-based TP deliverability either do not pay, or post & are reimbursed for most network upgrades
  - Projects not allocated TP deliverability either convert to “energy only,” or pay for upgrades without reimbursement

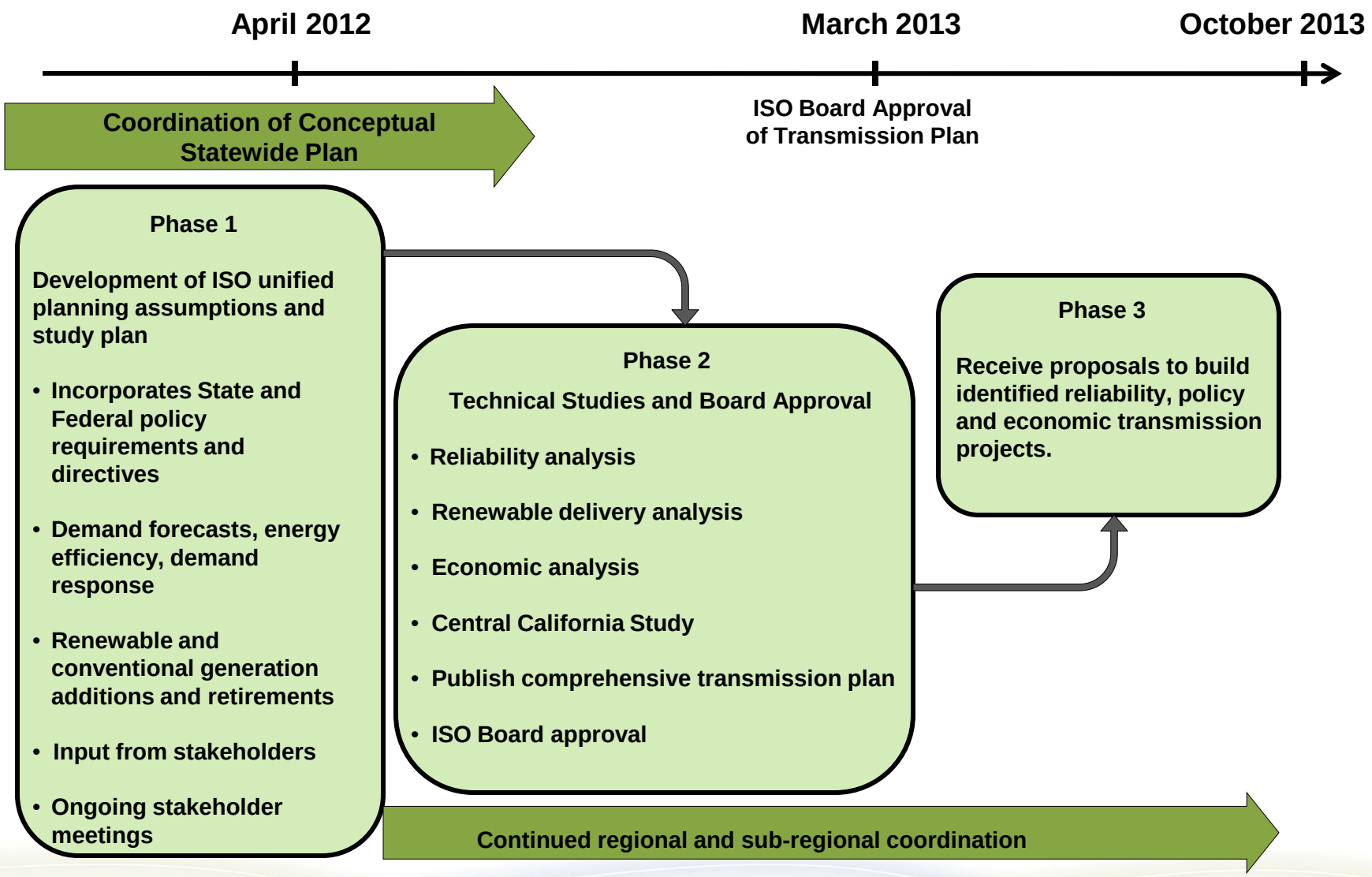
Overview of GIDAP structure (starting with Cluster 5)

- Phase 1 study assesses deliverability for reasonable MW amounts (based on TPP portfolios) when queue is very large
- Each project makes a choice in entering phase 2:
  - Option A: Project requires rate-based TP deliverability
  - Option B: Project is willing & able to pay for delivery upgrades
- Phase 2 study identifies delivery upgrades only for Option B, assuming Option A & prior clusters use TP deliverability
- ISO allocates TP deliverability to the most viable projects
  - Rank projects based on development milestones
  - Both A and B are eligible for allocation
  - Option A not allocated may "park" until next cycle
  - Projects allocated must demonstrate retention milestones

Timeline for GIDAP and TPP



Competitive Solicitation - 2012/2013 Planning Cycle

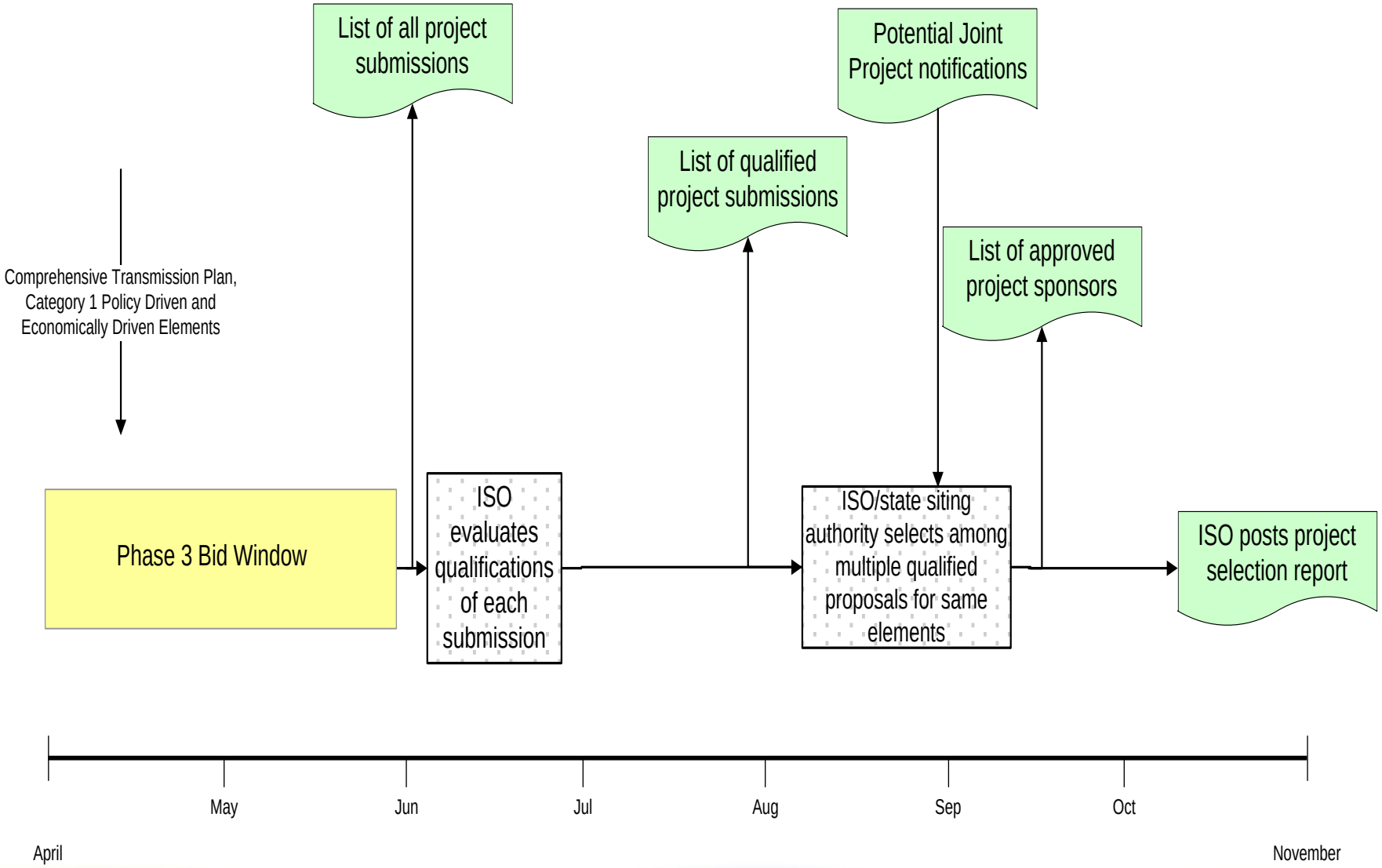


Projects Eligible for Competitive Solicitation (today)

- Eligible policy-driven or economic-driven projects:
  - Sycamore-Penasquitos 230 kV transmission line
  - Imperial Valley Collector substation and line (management-approved project, accelerated process)
- Eligible reliability-driven project elements with additional policy or economic benefits:
  - Gregg-Gates 230 kV transmission line

- Excludes: (1) any elements that are upgrades to or additions on an existing facility (2) construction or ownership of facilities on an existing right-of-way or (3) construction or ownership of facilities within an existing substation.

TPP Phase 3 Schedule



Key Steps in the Solicitation and Selection Process

1. Post functional specifications and solicit bids
2. Conduct informational conference calls
3. Receive Project Sponsor applications
4. Assess whether applicants meet minimum qualifications
5. Post list of qualified Project Sponsors
6. Selection of Approved Project Sponsor
7. Post Approved Project Sponsor / report

Questions?