

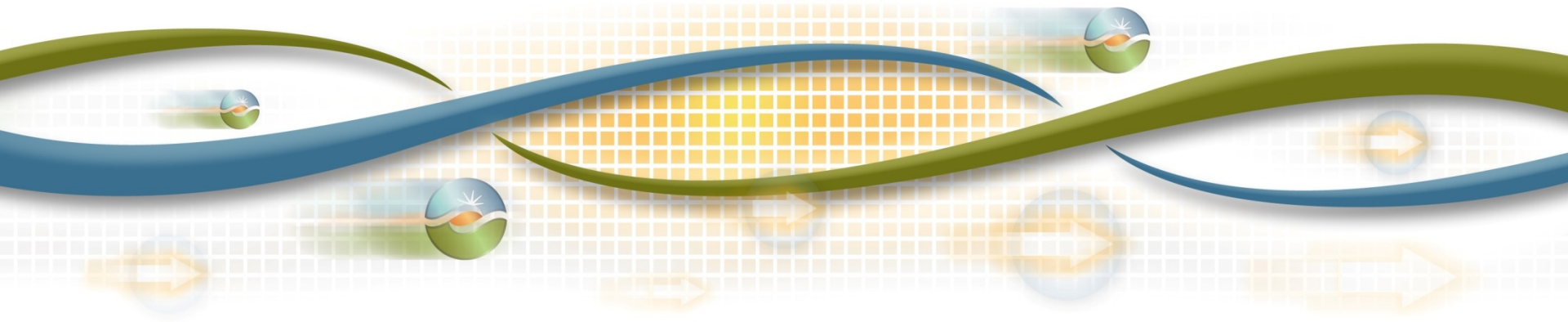
# Transmission Planning to Support 33% Renewables Portfolio Standard

CEC IEPR Lead Commissioner Workshop

California and Western States Transmission Planning and Permitting Issues

Neil Millar, Executive Director, Infrastructure Development

May 7, 2013



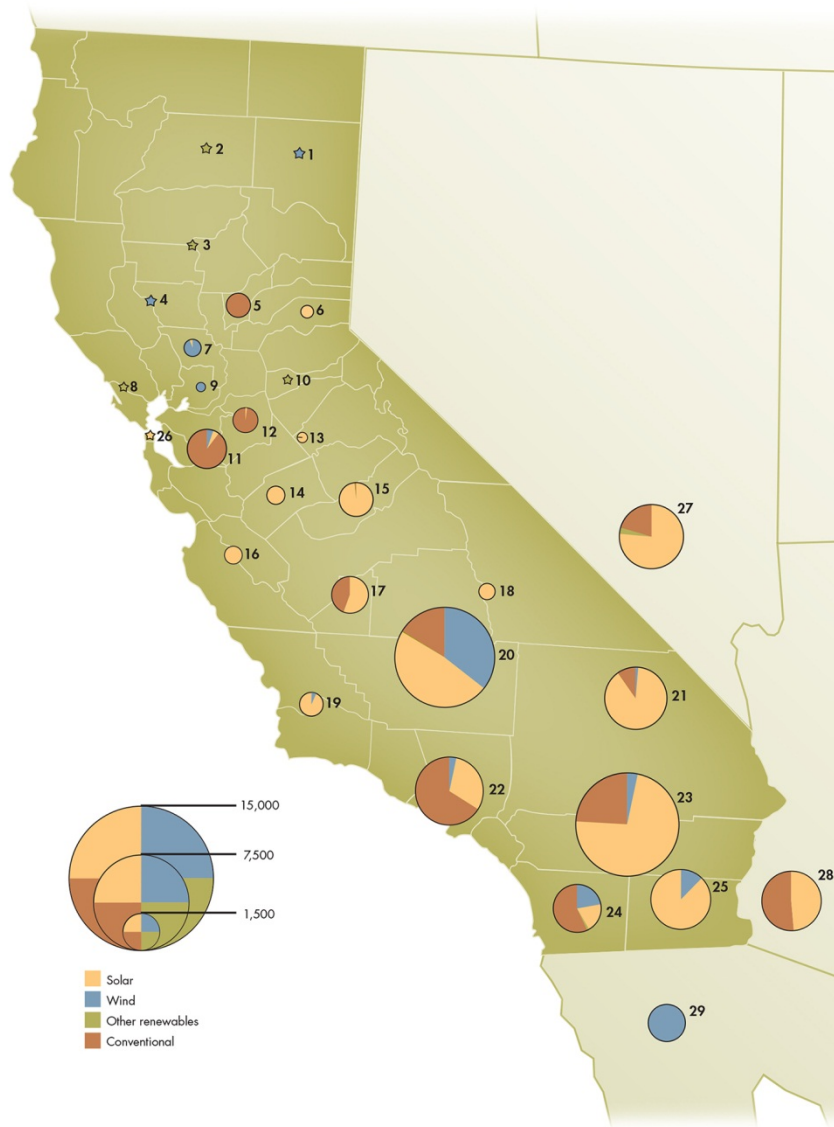
# Transmission underway to meet 33% RPS in 2020



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

Based on draft 2012/13 Transmission Plan

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

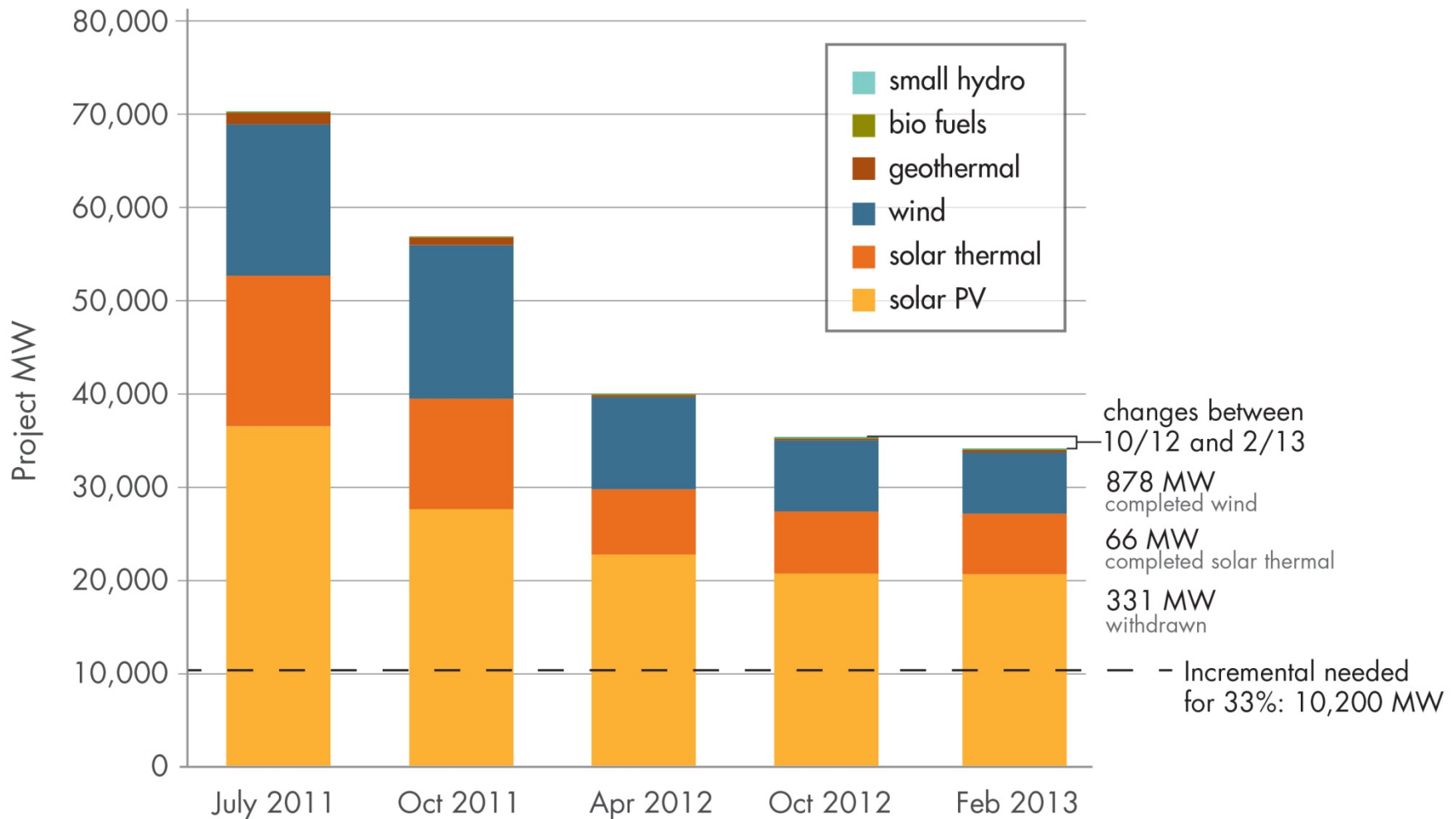


Interconnection queue by county

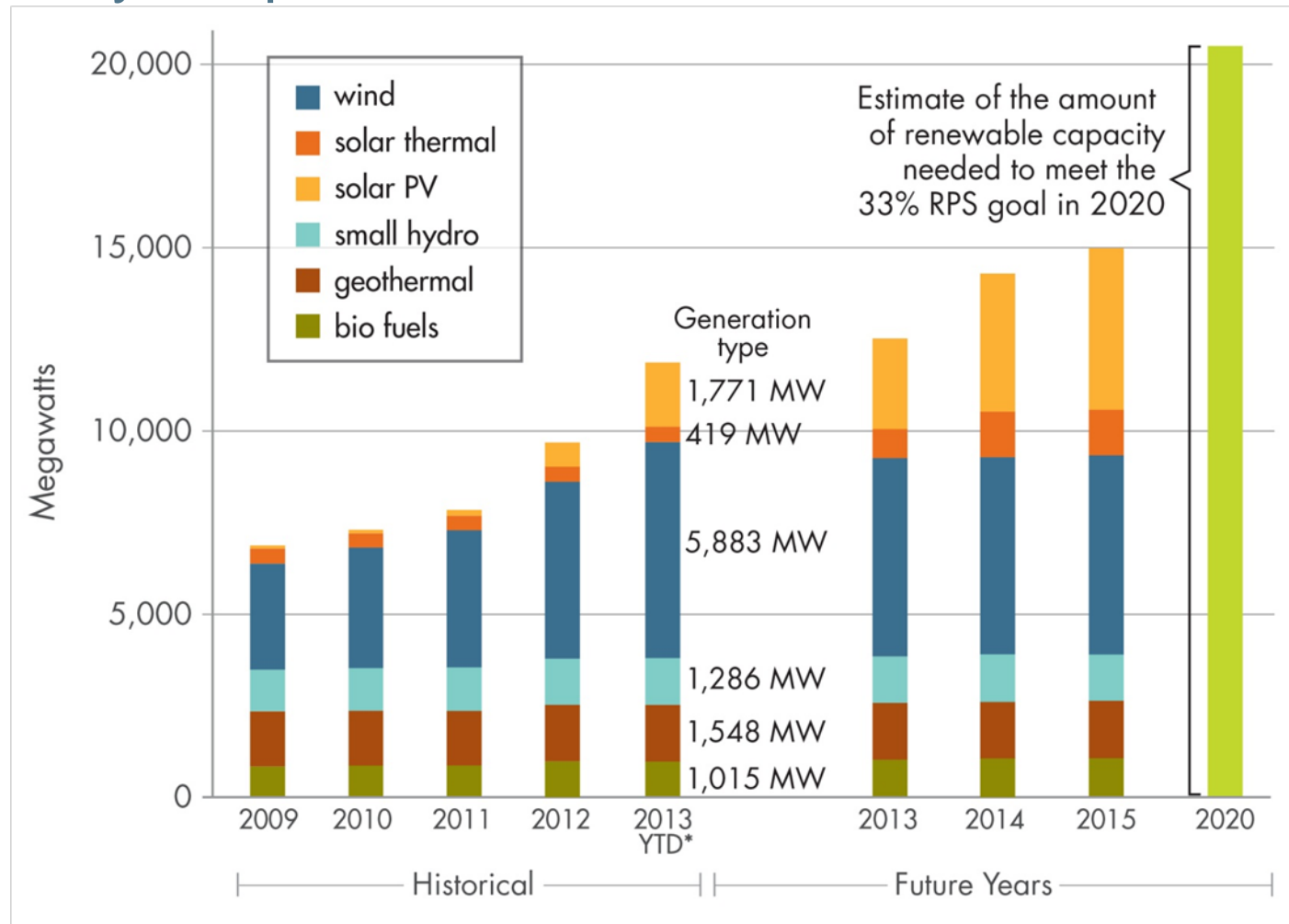
County	# of Projects	Megawatts		
		Renewables	Conventional	Total
1 Lassen	2	71		71
2 Shasta	1	27		27
3 Butte, Glenn, Tehama	3	10		10
4 Lake, Colusa	1	66		66
5 Sutter, Yuba	2		910	910
6 Placer	1	220		220
7 Yolo	3	533		533
8 Marin, Sonoma	3	92		92
9 Solano	2	330		330
10 Amador	1	18		18
11 Alameda, Contra 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
<b>In-state Totals</b>	<b>297</b>	<b>28,541</b>	<b>12,569</b>	<b>41,110</b>
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
<b>Out-of-state Totals</b>	<b>30</b>	<b>5,757</b>	<b>2,200</b>	<b>7,957</b>
<b>TOTAL ALL PROJECTS</b>	<b>327</b>	<b>34,298</b>	<b>14,769</b>	<b>49,067</b>

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

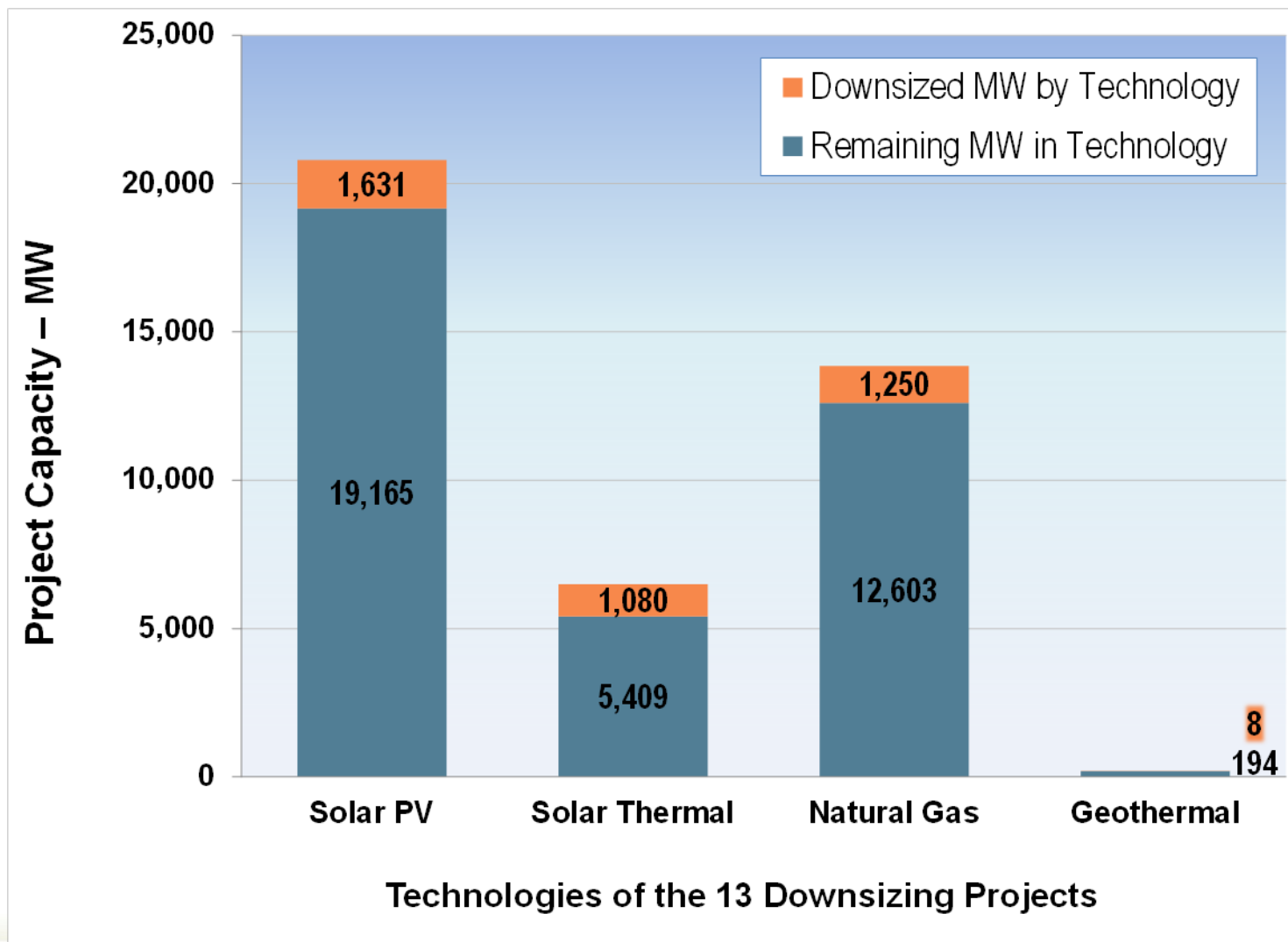


\*All online resources included in the 2013 YTD, including those yet to achieve full commercial operation.



# 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 2<sup>nd</sup> 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.

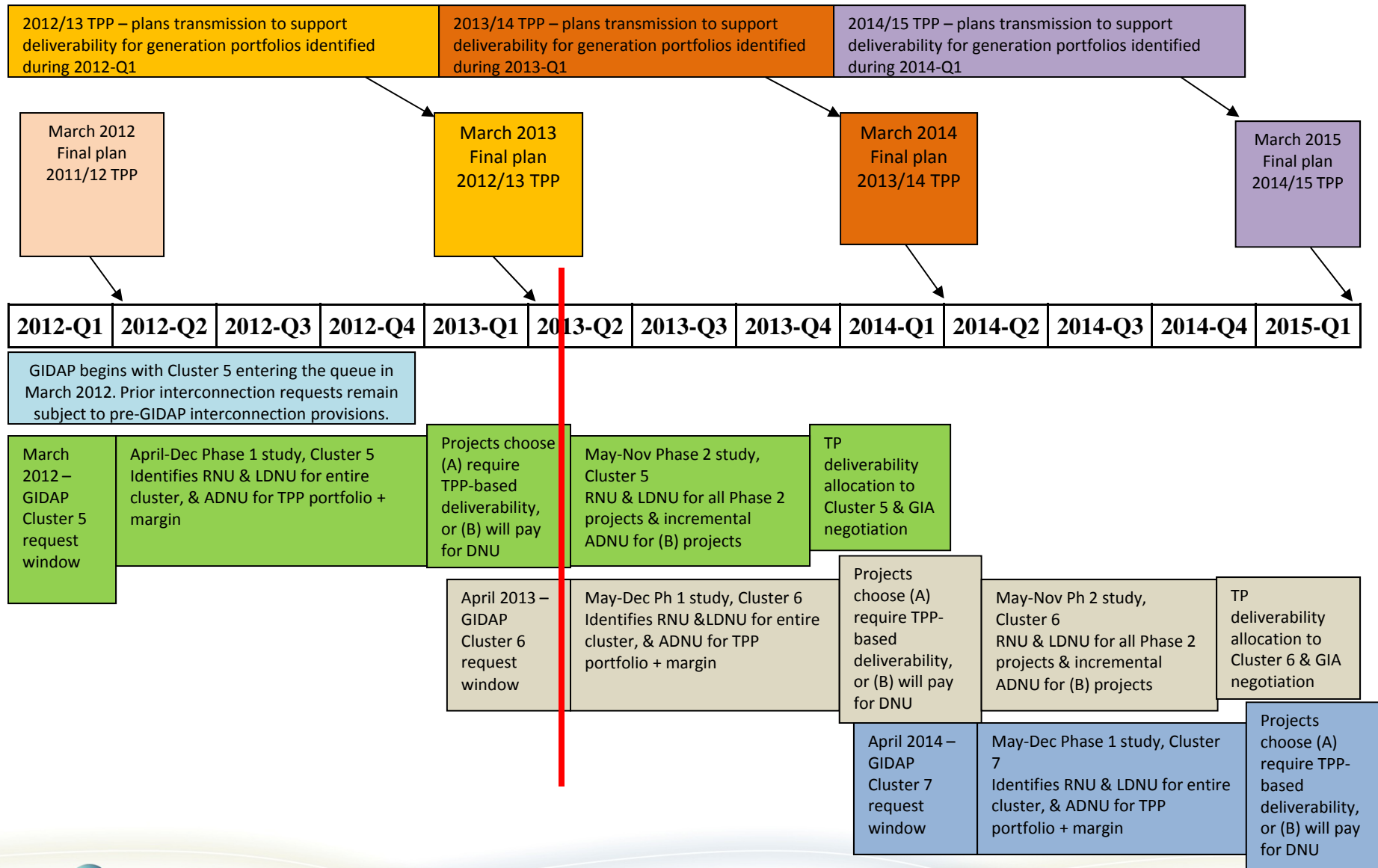
# Central design concept builds on the new “public policy-driven” transmission category created in 2010

- 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

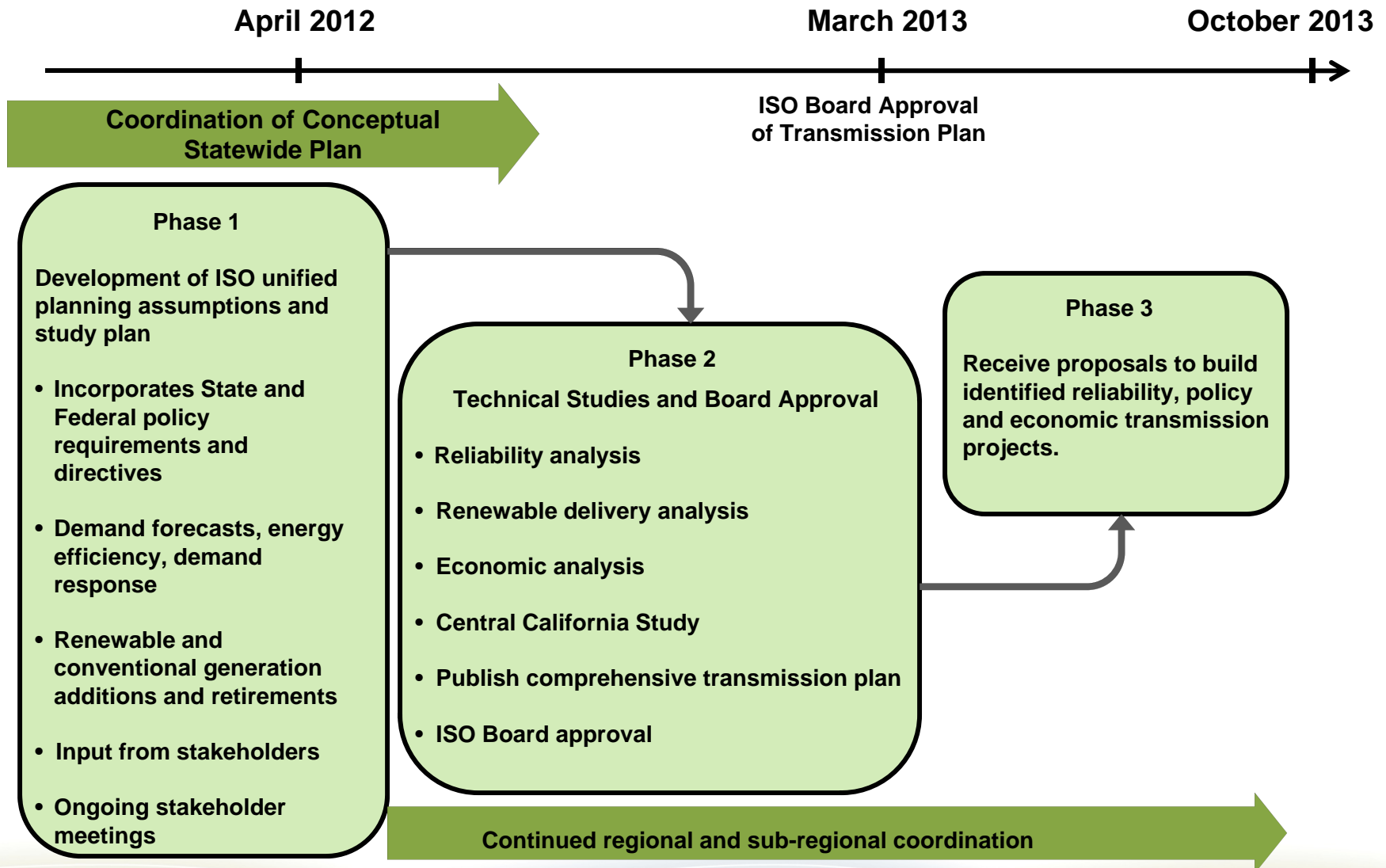
# Overview of GIDAP structure (starting with Cluster 5)

- 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

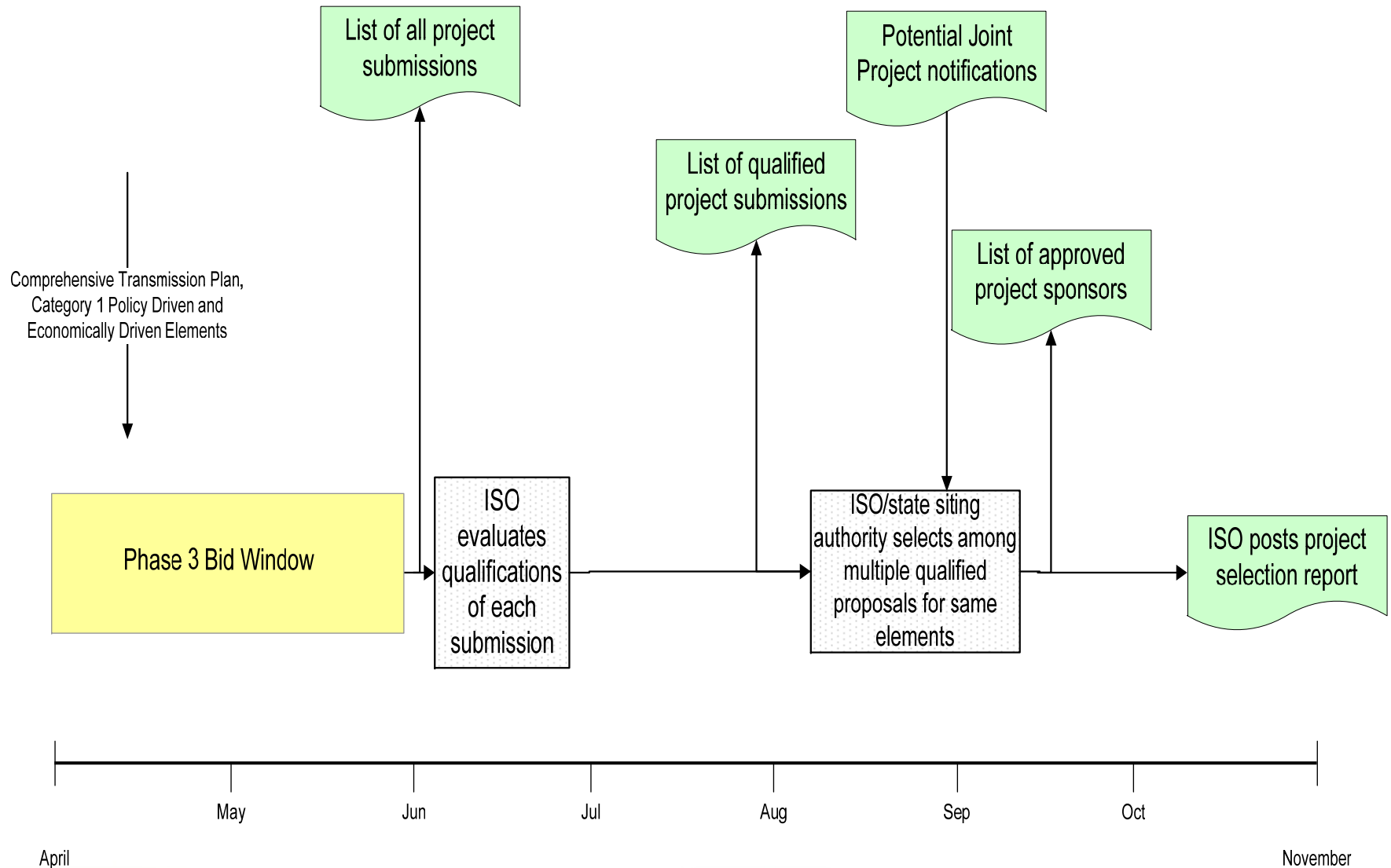




# Projects Eligible for Competitive Solicitation (today)

- 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?