

Memorandum

To: ISO Board of Governors

From: Keith Casey, Vice President, Market & Infrastructure Development

Date: October 20, 2011

Re: Briefing on Renewable Generation in the ISO Generator Interconnection Queue

This memorandum does not require Board action.

EXECUTIVE SUMMARY

The information included in this briefing represents the status of renewable generation in the California Independent System Operator Corporation's generator interconnection queue as of October 4, 2011. Key highlights include:

1. The current ISO queue contains approximately 70,000 MW (57,000 renewable) actively seeking to interconnect to the ISO controlled grid;
2. Since the last generator interconnection queue update approximately 13,000 MW have withdrawn, the majority coming after the Cluster 3 first financial postings were due, and 887 MW moved into the commercial operation category;
3. The ISO queue currently contains over four times the renewable generation capacity needed to reach the California mandated 33% Renewable Portfolio Standard requirement by 2020; and
4. The withdrawal of approximately 63% of the cluster 3 projects after the phase I studies were completed is fairly typical and it is likely that even greater attrition can be expected following completion of the cluster 4 phase I studies.

DISCUSSION

The following graphs illustrate the historical progression of renewables in the ISO, projections for reaching the 33% Renewable Portfolio Standard requirement, and provide insight into the size and type of renewable projects in the ISO queue.

Figure 1 shows the current and projected renewable generation capacity in operation within the ISO footprint by technology type. Currently, the ISO has 7,904 MW of operating renewable generation, most of which has been in operation 10 years or longer. Renewable generation capacity is expected to increase significantly over the next three years with most of the gains coming from solar and wind resources. The projections for 2012 and 2013 are based on expectations of the PTOs for new capacity under contract reaching commercial operation. The amounts shown for 2018, the year it is expected that the 33% mandate will be reached, are based on the resource mix in the trajectory scenario developed by the California Public Utilities Commission.

Figure 1
Current and Projected Renewable Generation Capacity
in Operation within the ISO

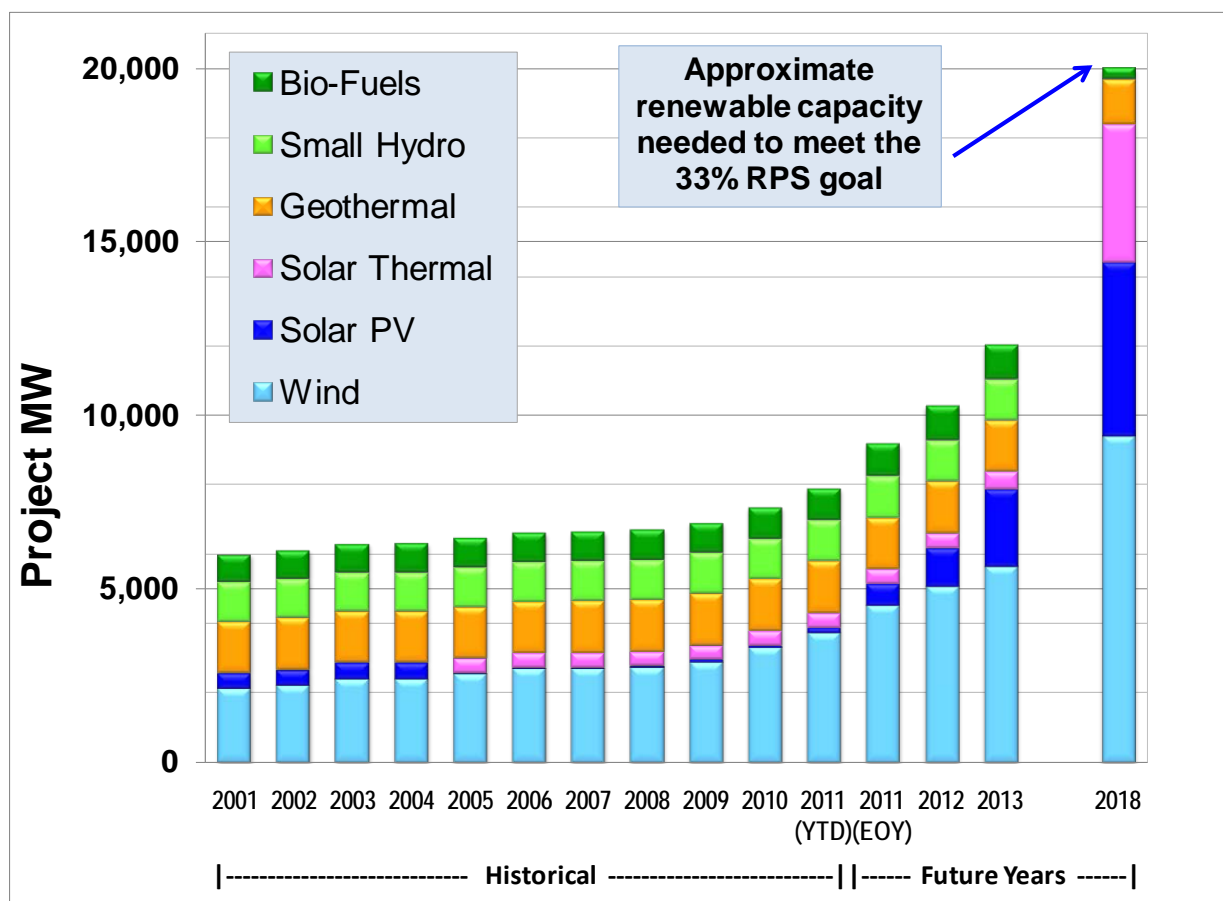


Figure 2 shows the capacity amount and study status of renewable generation projects in the ISO queue. The two-phase cluster study process identifies the transmission network upgrades required to safely and reliably interconnect to the ISO control grid and the upgrades needed to make a project fully deliverable (for those projects opting for full capacity deliverability status). Figure 2 illustrates the amount of renewable capacity that have completed required studies and the amount of those that will by the end of 2012. To date the ISO has completed interconnection studies for approximately two times the amount of renewable generation needed to meet the 33% Renewable Portfolio Standard goal.

Figure 2
Capacity Amount and Status of Renewable Projects
in the ISO Queue

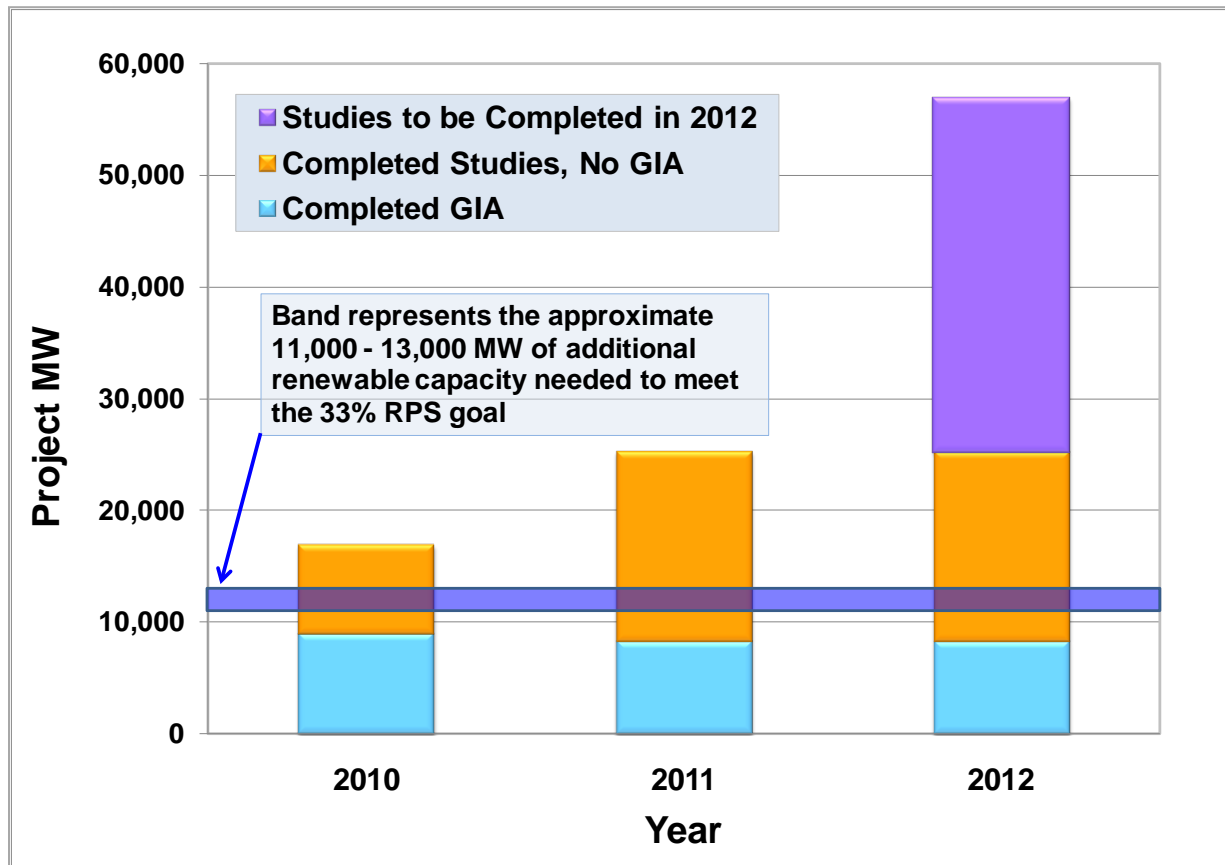
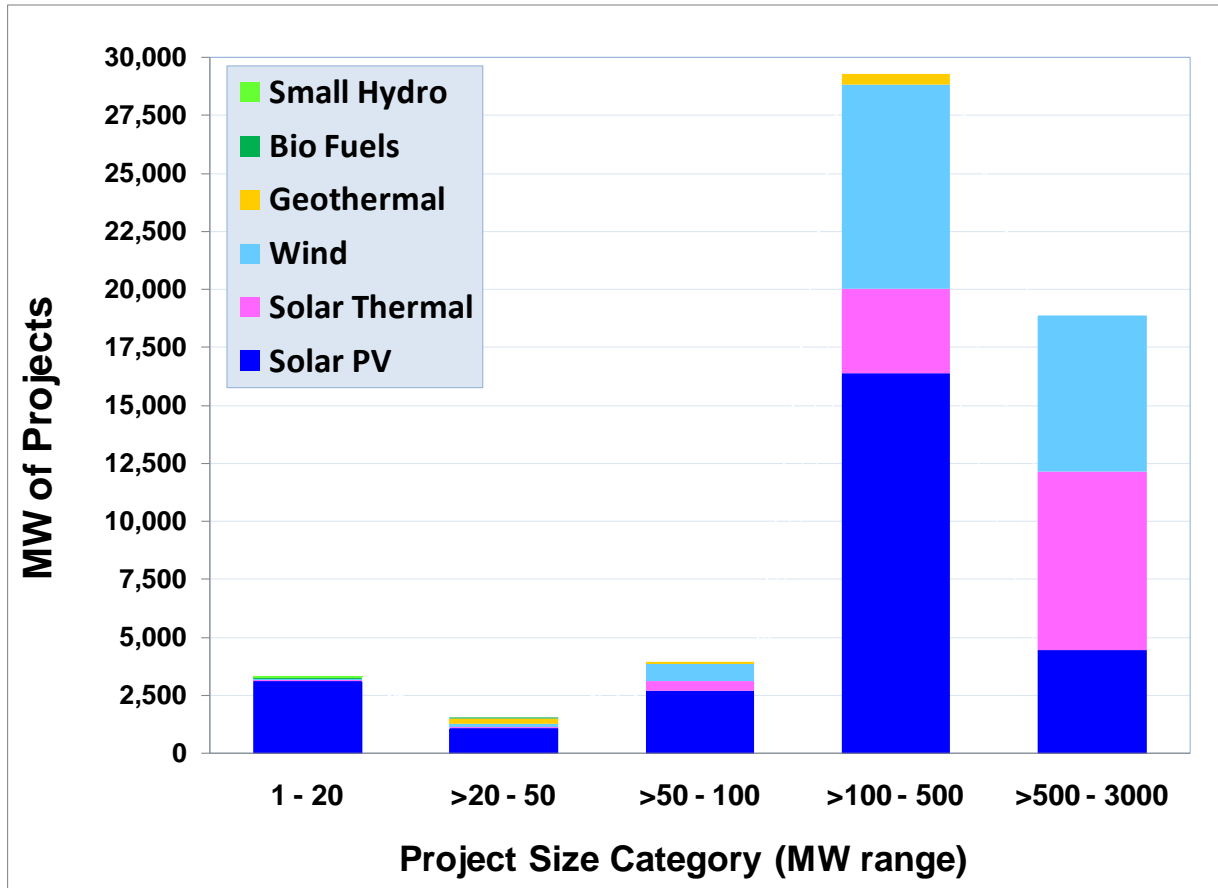


Figure 3 provides insight into the amount of generation capacity in the ISO queue by project size and type. Solar PV is the dominant generating technology for all size ranges except the 500 – 3,000 MW range.

Figure 3
MW of Renewable Projects in ISO Queue
by Size and Type



Similar to Figure 3, Figure 4 provides a breakdown of the projects in the ISO queue by project size and type, but shows the number of projects for each project size category. One observation from these two graphs is that the smaller, but not insignificant, amount of capacity provided by the projects in the 1 – 20 MW range contains 44% of the renewable projects. Of the projects in this range, 77% are 20 MW in size. The inordinate amount of 20 MW sized projects is a result of the 20 MW size limitation on projects that came into the ISO queue using the former small generator interconnection procedures, which had a significantly lower initial deposit requirement. The small generator interconnection procedures process was rolled into the current generator interconnection procedures process in December 2010, which utilizes a graduated deposit structure that encourages developers to size projects based on issues other than deposit fees.

Figure 4
Number of Renewable Projects in ISO Queue
by Size and Type

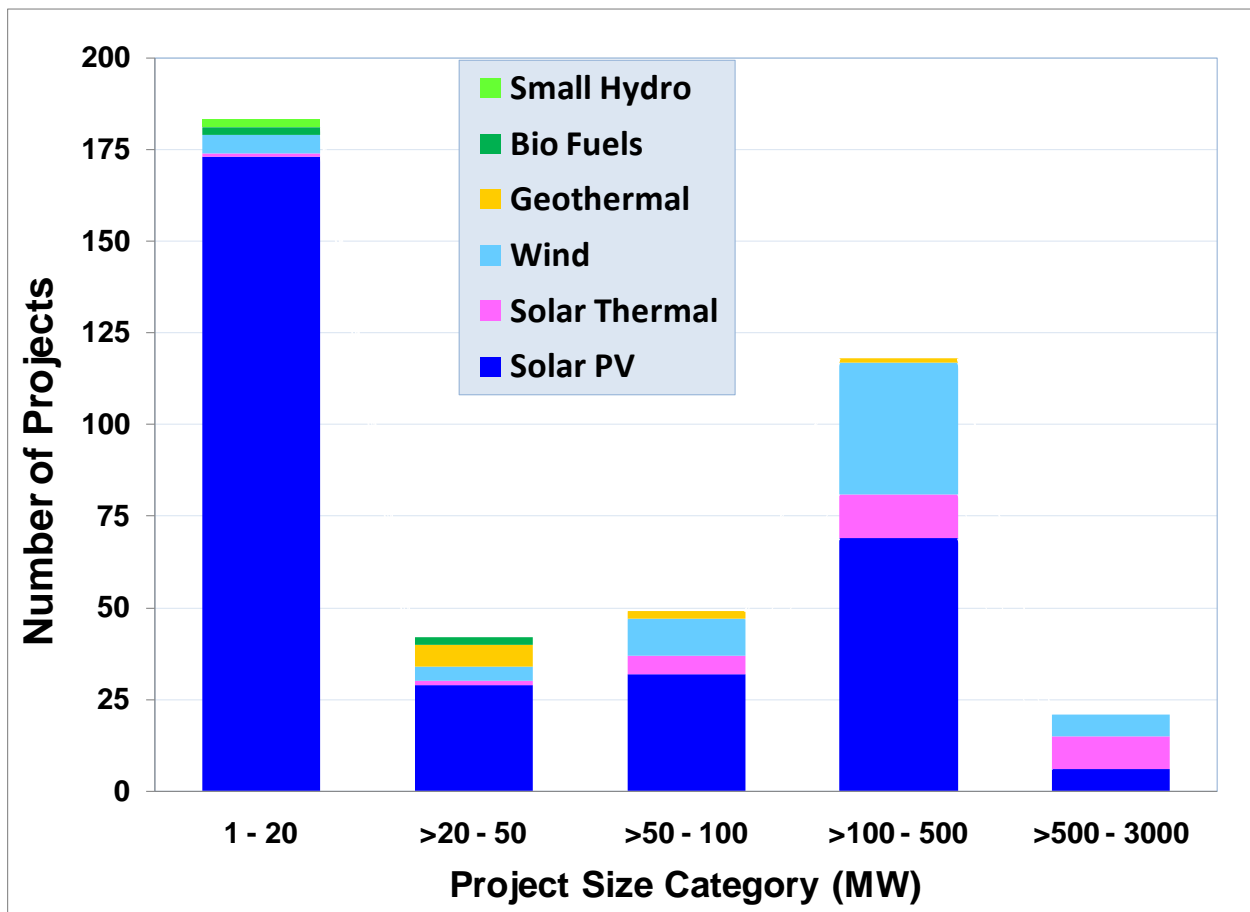


Figure 5 shows the reduction in renewable projects from the interconnection queue since the July, 2011 Board briefing. The 13,391 MW change is the result of 12,733 MW of project capacity that withdrew from the process and three projects, representing 658 MW, that moved into the commercial operation category. Table 1 on the next page provides the breakdown of the queue reductions. Cluster 3 phase 1 reports were issued to the interconnection customers in late May 2011 and approximately 7,400 MW of the Cluster 3 generation queue (63% of the active capacity in the Cluster 3 queue) withdrew from the process rather than post their required financial security, which was due at the end of August and another 400 MW reduction occurred due to some projects choosing to downsize. Additionally, approximately 4,700 MW of Cluster 4 generation withdrew from the queue for various reasons following their scoping meeting.

Figure 5
Change in Renewable Capacity in ISO Queue since July Update

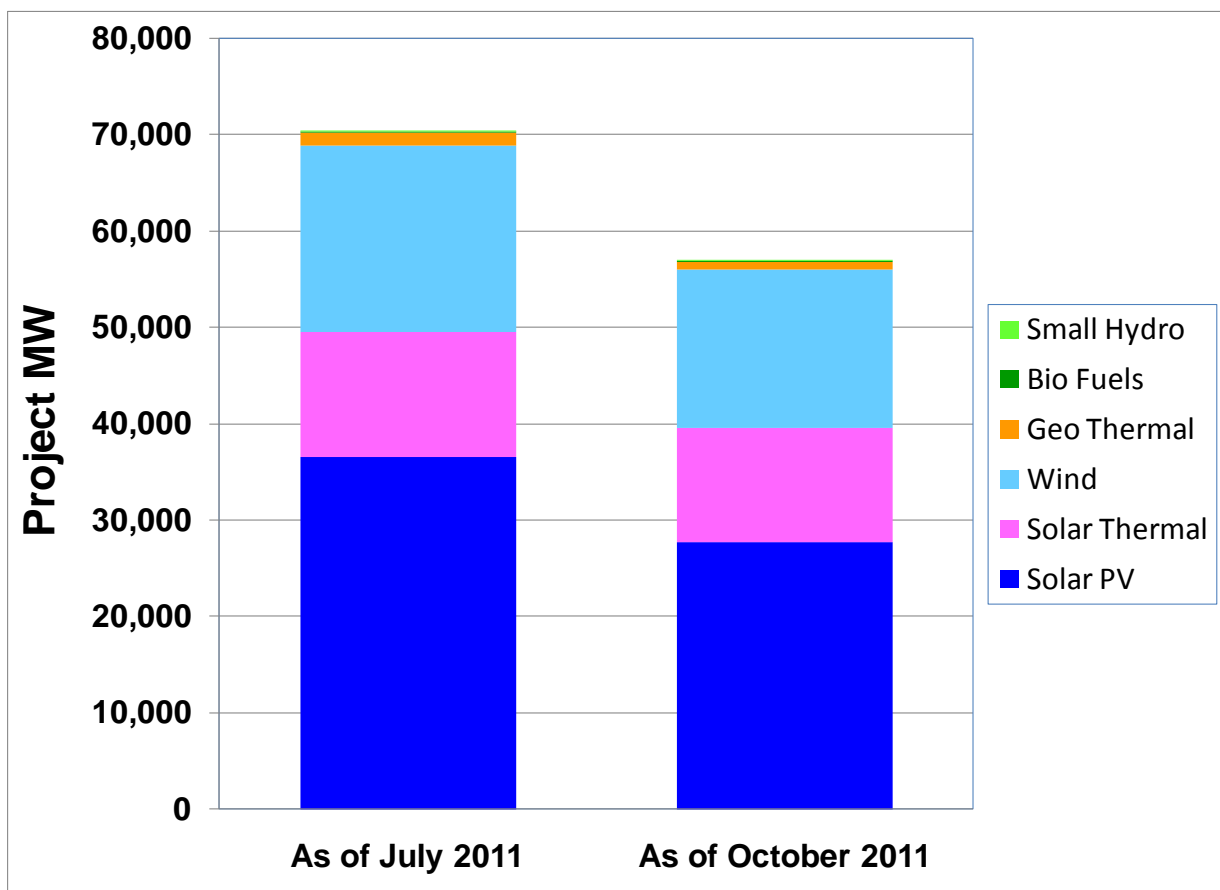


Table 1
Capacity Reduction from the ISO Queue
Since July Update

Study Group	MW Reduction
Pre Cluster	640
Transition Cluster	134
Cluster 3	7,768
Cluster 4	4,720
SGIP	98
SGIP-TC	30
Total	13,391