
From: Steve Taber [taber@princetonenergy.net]
Sent: Wednesday, January 09, 2013 1:43 PM
To: Young, Patrick
Cc: Michael E. Folloni APA; Dr. James A. Walker APA; Dr Kumiko Yoshinari; 'Andrea C Taber'
Subject: Comments on the TPP Renewable Portfolios
Attachments: White Paper re Role of Baja California Renewable Energy in California RPS.pdf

Patrick Young

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Mr Young,

We appreciate the CEC and the CPUC presenting the updated renewables transmission planning work at a seminar in late December. Based on our understanding of the presentation, renewable resources from Baja California do not appear to be factored into the planning process. We believe that this is a very unwise planning decision, one which will penalize California electricity customers with unnecessarily high costs after the expiration of the PTC in 2013.

The Renewable Energy Transmissions Initiative (RETI) conducted by Black and Veatch in 2010, under the direction of CEC, found that Baja California (North) will be one of the least cost areas from which to deliver renewable energy into California RPS market once the PTC expires. The renewable energy resources in Baja California are vast and strongly competitive, able to be delivered to California at prices well below those necessary to support either in-state generation or imports from other western states. In addition, renewable energy projects located in México enjoy tax advantages under Mexican law which are not subject to expiration. These Mexican tax advantages are economically commensurate with the US PTC/ITC. As a result of these cost advantages, renewable projects in Baja California represent an important opportunity for California LSEs to mitigate the rate impacts of RPS compliance, which will become increasingly problematic as the renewable portion of deliveries ramps up to 33%.

It is also important to note that renewable energy projects located in Baja California are able to interconnect directly with the CAISO system, qualifying them as "Bucket 1" (i.e., in-state) resources. Furthermore, for the projects that we are developing in México, there will be significant jobs benefits in California itself from tower and other component manufacture, development work, and transmission construction.

Attached please find a brief white paper on this subject.

Please let us know if there is any information we could provide to facilitate this task. We look forward to staying in touch with CEC/CPUC on their transmission planning work. Thank you for your attention.

Sincerely,

Princeton Energy Group

Steve Taber

Chairman & CEO

Comments on

The Importance to California Ratepayers

of

Renewable Energy Resources
Delivered from Baja California

17 August 2012

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BACKGROUND. Interconnection requests to CAISO, through IR Queue Cluster 5, were governed by the GIP Tariff, and as such were eligible for reimbursement of 100% of the costs of network upgrades after interconnection was achieved. Starting with QC6, IRs will be governed by the new GIDAP Tariff¹, which provides for reimbursement of upgrade costs only for projects which conform to the CAISO transmission plan.

On May 16, 2012, CPUC President Peevey and CEC Chairman Weisenmuller sent a letter to CAISO President Berberich conveying "Revised Base Case and Alternative Scenarios for CAISO 2012-2013 Transmission Planning Process". This letter included a "Transmission Summary" which identified a total of 17,130 MW of renewable energy coming into the CAISO system, broken down by CREZ. The breakdown included only 100 MW coming from Baja California into the California RPS marketplace. We understand that the breakdown of renewable energy resources by CREZ was based primarily on the current pipeline of projects with pending PPAs and IRs.

DISCUSSION. Although much of the 33% RPS is nominally filed with pending PPAs, it is likely that a significant portion of the pending PPAs will fail to be implemented, leaving the LSEs with a significant net short starting around mid-decade. As of that time, Baja California will be easily the most cost-effective source of renewable energy to serve the California RPS. US wind and solar projects are currently subsidized by the federal production and investment tax credits. These credits are scheduled to expire by mid-decade, and the projects for renewal beyond mid-decade are small. At the same time, renewable energy projects located in Baja California enjoy tax advantages under Mexican law which are not subject to expiration. These Mexican tax advantages are economically commensurate with the US PTC/ITC. As a result, these advantages amount to a subsidy to California ratepayers of \$10 to \$15 per MWh after the PTC/ITC is gone. (See Table 1, below.)

As a result of these cost advantages, renewable projects in Baja California represent an important opportunity for California LSEs to mitigate the rate impacts of RPS compliance, which will become increasingly problematic as the renewable portion of deliveries ramps up to 33%.

This cost advantage was quantified by Black & Veatch in their recent report for the Renewable Energy Transmission Initiative², which projected Baja California renewable energy to be extremely competitive after the expiration of the US federal tax credits. (See Figure 1.)

¹ California Independent System Operator, *Tariff Amendment to Integrate Transmission Planning and Generator Interconnection Procedures (TPP-GIP tariff amendment)*, May 25, 2012.

² Black & Veatch, *Renewable Energy Transmission Initiative. Final Report*, May 2010.

TABLE 1
GENERATION COSTS OF RENEWABLE ENERGY PROJECTS
COMPARISON OF US AND MEXICAN TAX INCENTIVES

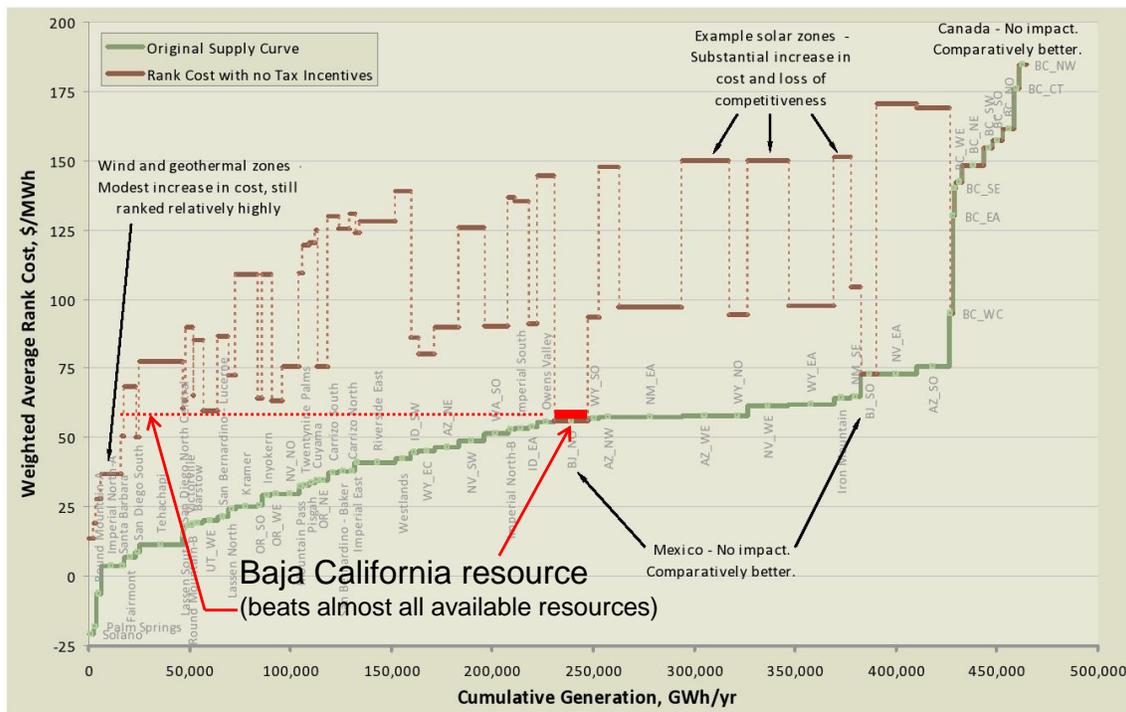
US:

- PTC/ITC \approx 30% CapEx
- MACRS & bonus depreciation
- Expires:
 - Wind: 2012
 - Solar: 2016
- May be extended (unlikely past 2016) or truncated to earlier date

México:

- 95% first year depreciation
- No property tax
- No sales tax
- VAT fully recovered in Year 1
- Provisions are in the Mexican tax code = no expiration date

FIGURE 1
GENERATION COSTS OF RENEWABLE ENERGY
DELIVERED TO CAISO POINT OF INTERCONNECTION ³



³ Black & Veatch, op.cit. Notation on Baja California resource added by Princeton Energy Group.

Baja California renewable resources have additional cost advantages which will inure to the benefit of California ratepayers, including the following:

- The wind resource in Baja California, for projects south of the La Rumorosa region close to the border, is much superior to resources in California, with thousands of MWs at wind speeds up to 9 mps. (See Table 2 and Figure 2, below.)
- The solar resource in Baja California is excellent, with very clear and dry air, many buildable mesa tops at high altitude, and relatively low latitude.
- While RPS-serving projects in México are subject to CEQA, they still enjoy some capital cost advantage over US projects because of more lenient electrical codes, especially governing transmission.
- Costs of transmitting renewable energy into the CAISO system from Baja California are quite low by comparison to other regions in the western US and Canada (See Table 3). Baja California projects can interconnect directly with the CAISO system, placing them essentially inside the southern California load pocket.
- Importantly, Baja California projects can easily achieve a first point of interconnection with the CAISO system, earning "Bucket 1" in-state status.
- Baja California resources can utilize the Sunrise Power Link.

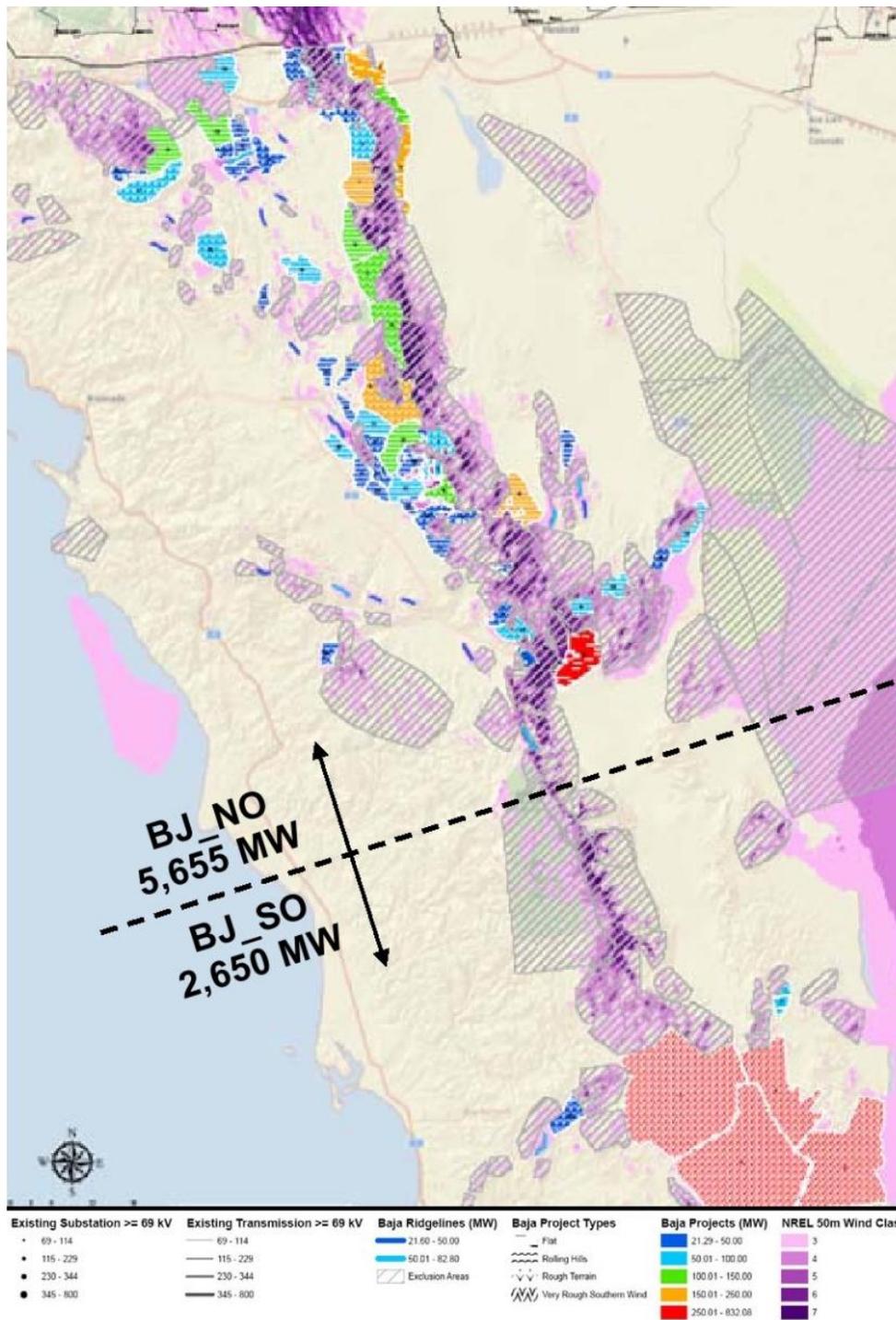
TABLE 2
BAJA CALIFORNIA WIND RESOURCE (MW) ⁴

	RETI estimate
Technical potential in Baja	33,200
Near term developable	8,305
Baja North	5,655
Baja South	2,650

(Estimated based on meso-scale assessments)
(Net of protected and environmentally sensitive areas,
population centers, rugged terrain)

⁴ Black & Veatch, op.cit.

FIGURE 2
BAJA CALIFORNIA WIND RESOURCE ⁵



⁵ Black & Veatch, op.cit.

TABLE 3
OUT-OF-STATE TRANSMISSION COSTS (US\$/MWH) FOR RENEWABLE ENERGY
DELIVERED TO GATEWAY COMPETITIVE RENEWABLE ENERGY ZONE ⁶

Resource area	XM CapEx (US\$m)	CoE adder (US\$/MWh)	
<u>In-state resources</u>			
California	\$0 (Baseline)	\$0 (Baseline)	Limited low-cost resources available
Baja California N	\$226	\$7.07	1 st Pol w/ CAISO defines "in-state"
Nevada Southwest		\$4.01	Limited resource
<u>Out-of-State Resources</u>			
Arizona	\$241 - \$747	\$6.38 - \$19.81	All out-of-state resources, including T-RECs, have limited access to the RPS market under CPUC Dec 11-01-025
Baja California S	\$511	\$16.18	
British Columbia	\$1,699 - \$3,110	\$37.55 - \$68.76	
Idaho	\$1,052 - \$1,440	\$23.25 - \$31.83	
New Mexico	\$1,641 - \$1,956	\$43.54 - \$51.90	
Nevada	\$411 - \$719	\$8.52 - \$19.07	
Oregon	\$236 - \$1,009	\$5.23 - \$22.31	
Utah	\$559	\$14.83	
Washington	\$1065	\$23.55	
Wyoming	\$1,693 - \$2,248	\$44.92 - \$59.63	

Interestingly, developing the Baja California resource has the potential to generate thousands of jobs in the US, including in California itself. US turbine manufacturers are ideally positioned to deliver equipment to Baja California projects, including towers manufactured in California. One proposed 500 MW project (sponsored by the authors of this paper) is projected to create 3,000+ person-years of manufacturing employment in the US alone.

However, in order to deliver the cost benefits of Baja California resources to California ratepayers, the CAISO planning process needs to accommodate interconnection of these resources. If the CAISO plan accommodates only 100 MW of Baja California resources, then the great majority of them will be disadvantaged with respect to US-based resources by the ineligibility for reimbursement of interconnection costs. In effect, a presumption that Baja California resources are limited to 100 MW amounts to a subsidy to US-based projects from California ratepayers. With rate impacts rising as a result of RPS compliance, and with significant subsidies to California ratepayers available south of the border, this seems very unwise.

⁶ Data from Black & Veatch, op.cit.

RECOMMENDATION. The authors recommend that the CAISO planning process increase the expected deliveries of renewable energy resources from Baja California during the second half of this decade to 5,655 MW, the net amount of competitive wind resources found to be available from northern Baja California by the Black & Veatch RETI study. Projects submitting IRs in QC6 are likely to be coming on line around mid-decade or later. Ratepayers in California deserve the benefit of the most cost-effective resources available, without distortion resulting from uneven treatment of network upgrade costs.