

Black & Veatch view of renewables that are likely to be built outside of California and the basis for those views.

The Black & Veatch view, as expressed in our WECC Energy Market Perspective 25-year forecast of power markets in the Western Interconnect, reflects our analysis that **out of state renewables will be challenged to compete to serve California RPS targets.**

The reasons are:

- 1) Out of state renewables may be somewhat less expensive than California resources (\$70-100/MWh) at the busbar; however, they are not dramatically so, and transmission costs would then need to be added.
- 2) The out of state wind renewables generate more at night than during the day.
- 3) The cost of transmission (and associated losses) needed to move the renewables to California is considerable.
- 4) Maybe more importantly, the ability to permit the needed transmission across several states, is problematic and will likely lead to delayed or denied permits.
- 5) Utility resource planners in California utilities are aware of these matters and have signed some PPAs for out of state renewables (OR and WA wind, for example), but most PPAs are for in-state resources
- 6) California has significant solar resources. While the busbar costs of solar is higher than wind (e.g. \$140/MWh for solar), those renewables provide power during the day when it is needed and do not need large expensive cross country transmission. The recent declines in solar costs have made it more difficult for OOS resources to compete.
- 7) BC based renewables do not get tax credits if sold to the US, therefore it is particularly hard for them to compete.
- 8) California legislation has greatly restricted the use of Renewable Energy Credits (RECs) in meeting California RPS. So out of state renewables will need to have firm transmission to California and be dynamically transferred to be useable to meet California RPS.
- 9) CA utilities may look at OOS resources as existing transmission lines become available from retiring existing resources and available interstate capacity (i.e. LADWP increased capacity on IPP-DC and using this to transmit UT wind; SCE has interstate capacity available from retired Mohave and retiring Four Corners coal plants.)

Having said the above, there are some very competent folks trying to develop good renewables and associated new transmission outside of California to help California meet its RPS goals. In the event they bring desirable projects, California should be prepared with transmission in California that will be able to accommodate that power. There should be signposts that point to if/when these desirable projects would materialize in time for California to begin to makes its plans for accommodating that power.

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11-IEP-1E	
DOCKET	
11-IEP-1G	
DATE	May 17 2011
RECD.	May 18 2011