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California's Renewable Nuggets

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www.ubs.com/investmentresearch

Jim von Riesemann
Analyst
jim.vonriesemann@ubs.com
+1-212-713-4260

Julien Dumoulin-Smith
Analyst
julien.dumoulin-smith@ubs.com
+1 212 -713 9848

Stephen Chin
Analyst
stephen.chin@ubs.com
+1-212-713 4111

David Eads
Associate Analyst
david.eads@ubs.com
+1 212 713 3630

Mahavir Sanghavi
Associate Analyst
mahavir.sanghavi@ubs.com
+1 212 713 4086

■ **Another push for 33% renewable portfolio standard (RPS)**

Based upon our conversations with key CA political leaders, the long sought-after 33% RPS goal appears likely to be enacted into law in March; importantly, Governor Brown supports it. Previous attempts to pass such legislation had been held up by potential violations of the Interstate Commerce clause; those issues appear to have been resolved. Of note, the bill specifically states the end goal is to displace fossil fuel consumption in the state. Near-term investment implications favor the renewable energy suppliers and not the state's investor owned utilities.

■ **SB 2x is broad-based and the goal is far reaching . . .**

SB 2x, among other things, calls for graduated RPS compliance deadlines (albeit strictly monitored and enforced); provides a self-build option for the IOUs for up to 8.25% of retail sales; and, provides additional state subsidization monies through nonbypassable charges for solar thermal, distributed generation, and certain fuel cell technologies. There is also a companion transmission bill designed to help with siting and jurisdiction that is currently serving as a placeholder.

■ **. . . but the companies are already a long way towards meeting the goals**

According to the policy makers we have spoken with, the IOUs have already signed contracts sufficient to meet the 33% threshold; however, the state believes there will only be a 70% completion rate on these previously signed contracts.

■ **"Go, no go" appears to be right around the corner**

By California statute, the legislature must pass SB 2x within 45 *calendar* days of the original filing date, or by March 6, 2011 (original filing was January 20, 2011).

Background

SB 2x was introduced by Senators Simitian, Kehoe and Steinberg in the California Legislature – 2011-12 First Extraordinary Session, and updated on February 1. An identical companion bill, SB 23, was introduced in the regular session. The difference between the two is that bills introduced in the special session have accelerated timetables.

SB 2x is meant to formally enact a 33% RPS standard. There has been a checkered past with attempts to enact this standard in California. The original attempt in 2009 was vetoed by then-Governor Schwarzenegger because the union leaders and the legislature couldn't agree on in-state versus out-of-state renewables sourcing language and the implication regarding potential violations of the Interstate Commerce clause. Governor Schwarzenegger then signed an executive order implementing the 33% RPS standard. In 2010, the legislation nearly passed just as the legislative session ended; time simply expired.

What is California's End Game?

The bill clearly states the goal for California is:

- "to have a fully competitive and self-sustaining supply of electricity generated from renewable resources;
- that the state and its commission shall optimize public investment to ensure the vigorous pursuit of the most cost-effective and efficient investments in renewable energy;
- to displace fossil fuel consumption within the state;
- to promote stable retail rates for electric service;
- to meet the state's need for a diversified and balanced energy generation portfolio; and,
- to do so with a *de minimis* impact on cost structure and rates."

Next Steps

SB 2x still needs to go through two Senate committees before proceeding to the Senate floor, and once passed by the Senate, it moves to the Assembly. If there are any amendments in the Assembly, the Senate will need to reconsider. By California statute, the bill must be completed within 45 *calendar* days of its original filing date, suggesting a March 6, 2011 deadline.

- **Next Two Weeks**: the Senate Energy, Utilities, and Communications Committee (EUC) is likely to take up SB 2x within the next two weeks. The EUC meets every first and third Tuesday beginning at 9:30 am. Senator Simitian is a member of the EUC.
- **Within Three Weeks**: The Senate Appropriations Committee (AC) will then perform a fiscal analysis once it clears the EUC. The AC is chaired by SB 2x co-sponsor Senator Kehoe. The third co-sponsor, Senator Steinberg, is also a member of the AC.
- **Three to Four Weeks**: Senate begins deliberations.

- **Four to Five Weeks**: Provided the Senate passes the bill, the same process then begins in the Assembly.

<u>Our understanding is that if SB 2x fails to meet its 45 calendar day statutory deadline, then the companion bill SB 23 replaces SB 2x.</u>

Summary Takeaways from Current Draft of SB 2x

In the bullets below, we provide our summary takeaways from the current SB 2x draft. Given the legislative process, we recognize many of these items could be subject to material change or elimination in a final bill.

- **Definitions**: A renewable is a facility that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renwable fuels, small hydroelectric of less than or equal to 30MW; digester gas; solid municipal waste conversion; landfill gas; ocean wave; ocean thermal; or tidal current. This has been consistent California policy. The bill contains language directing a study to determine whether run-of-river hydro resources (British Columbia) count as renewables which is meant to partially address out-of-state resource and renewable energy credit discussions. The bill is silent on nuclear power.

- **Administration**: SB 2x continues the existing regulatory framework in California whereby the California Public Utilities Commission retains all of its authority over the day-to-day oversight with respect to regulatory recovery through rates, contract approvals, and RPS compliance oversight while the California Energy Commission retains its siting authority, among other things.

- **Support for Emerging Technologies**: SB 2x provides additional state subsidization monies for solar thermal, distributed generation, and certain fuel cell technologies in particular that have the greatest near-term commercial promise and therefore merit targeted assistance. A significant portion of this subsidization funding will be through a nonbypassable charge to provide for renewable energy R&D, job training, rebates and buydowns or equivalent incentives, and any other items deemed necessary to promote green energy in the state.

- **Phase-in Goals:** A graduated phase-in approach is being applied where eligible renewable energy resources must average a minimum percentage of retail sales during each of the various compliance periods. The bill also states that a balanced portfolio of renewable energy sources be procured. The phase-in goals are as follows:

  (a) **20%:** January 1, 2011 to December 31, 2013, inclusive

  (b) **25%:** January 1, 2014 to December 31, 2016, inclusive

  (c) **33%:** January 1, 2017 by December 31, 2020, inclusive

  (d) **Minimum 33%** threshold for all subsequent years

- **Rate base options**: Allows the state's three IOUs (Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric) the self-build (rate base) option of up to 8.25% of anticipated retail sales by December 31, 2020, and thereafter, provided that the IOU has demonstrated the self-build option is the lowest cost alternative and that it uses a viable renewable technology at a reasonable cost. All self-build options will be subject to traditional cost-of-service ratemaking and be subject to a pre-determined maximum cost recovery threshold.

- **Contracts with out-of-state renewable providers:** Any previously executed contract that a California IOU has entered into and the commission has approved with eligible renewable resources located outside of California and that supplies electricity to California end-use customers are grandfathered in with full credit. Any of the 7 GW of additional proposed capacity outside of California that is awaiting interconnection approval from the ISO will be considered eligible.

- **New contracts**. SB 2x is designed to ensure that only long-dated contracts of no less than 10 years are executed. A balance of long- and short-term contracts can be entered into with an eligible renewable energy resource if the commission has established, for each retail seller, minimum quantities of eligible energy resources that must be procured through contracts of at least 10 years in duration. More importantly, the contract tariff is subject to review by the CPUC. The CPUC can then apply its view (methodology to be determined) of what an equivalent market price would be over the life of that given contract.

- **Renewable Energy Credits (RECs)**. Calls for all revenues received by an electrical corporation for the sale of a renewable energy credit to be credited to the benefit of ratepayers. <u>Prohibits the creation of RECs for electricity generated pursuant to any electricity purchase contract with a retail seller executed before January 1, 2005 unless the contract contains explicit terms detailing the ownership or disposition of those credits</u>. No RECs will created through contracts executed after January 1, 2005 that are written under the auspices of PURPA. Allows IOUs recovery of reasonable costs of purchasing, selling, and administering RECs in rates.

- **Wind**: SB 2x supports existing wind generation if its a cost-effective source of reliable energy, the environmental benefits compare favourably with other renewable electrical generation facilities located in California, and the existing wind generating resources require financial assistance to remain economically viable. We believe this is lukewarm support for additional wind build, but stronger support for repowering existing wind sites, especially as many of these facilities' contracts begin rolling off. SB 2x also directs the commission to determine the load carrying capacity of wind and solar on the electrical grid and orders the PUC to establish the contributions of those values toward meeting specified resource adequacy requirements.

- **Transmission.** SB 2x appears to have four key provisions with respect to transmission.

  (a) SB 2x would require the ISO and other California balancing authorities to work cooperatively to integrate and interconnect eligible renewables into the grid by the most efficient means possible. The goal is to minimize the impact and cost of new transmission facilities needed to meet both reliability and RPS procurement requirements;

(b) allows the facility to qualify as an eligible renewable resource provided that it is located in the state or near the border of the state where the first point of connection to the transmission network is a balancing authority primarily within the state;

(c) alternatively, the facility qualifies as a renewable resource if it has its first point of interconnection to the transmission network outside the state within the Western Electricity Coordinating Council (WECC) so long as it began commercial operation after January 1, 2005 and the electricity generated by the facility was procured by a retail seller or local publicly-owned electric utility as of January 1, 2010; and,

(d) a companion Transmission-specific bill (SB 16, sponsored by Sen. Michael Rubio) currently serves as a placeholder to be integrated with a completed SB 2x. SB 16 is earlier in the process and is expected to fill-in the details left out of SB 2x. SB 16 is also expected to address a number of issues raised by transmission that crosses Federal and state lands within California.

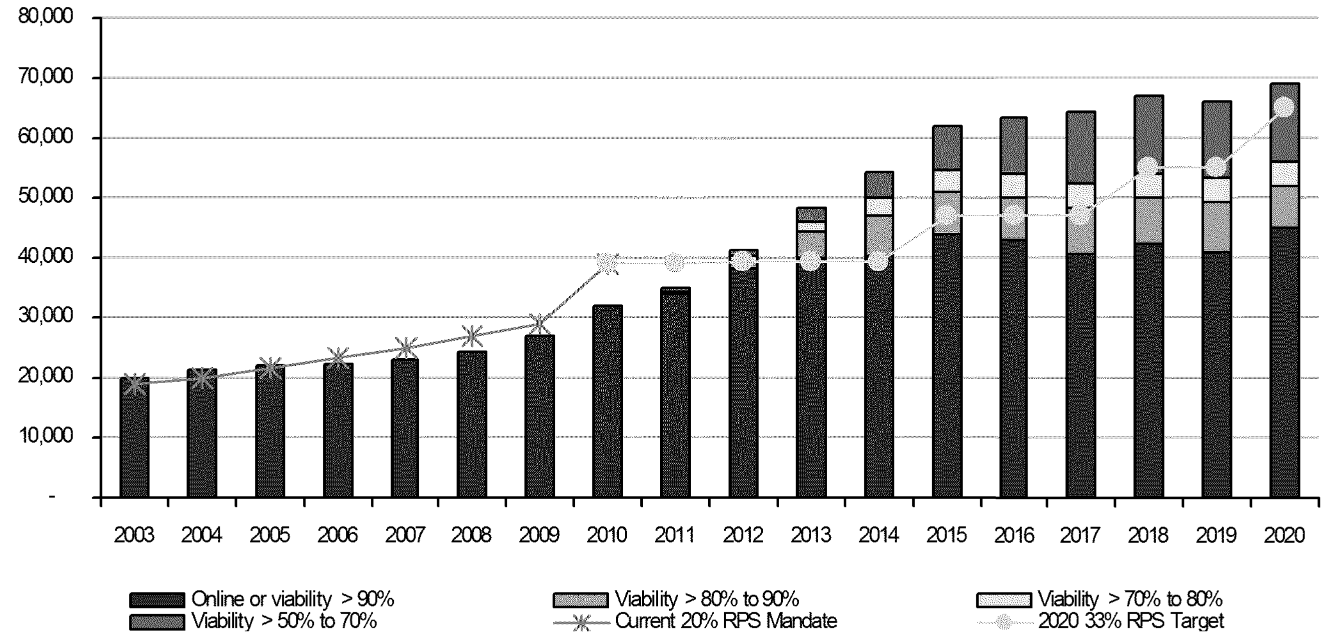
- **Grid integration.** By July 1, 2011, the CPUC is to determine the effective load carrying capacity of wind and solar energy resources on the electrical grid and use those values in establishing the contribution of those resources toward meeting specified resource adequacy requirements.

- **Opt out provisions.** An IOU is authorized to refrain from entering into new contracts or constructing facilities beyond the quantity that can be procured within the limitations, unless eligible renewable energy resources can be procured without exceeding a *de minimis* increase in rates.

How do the IOUs currently fare?

According to the California Public Utilities Commission Renewables Portfolio Standard Quarterly Report (4th Quarter 2010), "collectively the IOUs have more renewable electricity under contract than needed to meet a 33% RPS target in 2020. However, not all of this electricity is anticipated due to contract failure." Based on our conversations with the California policy makers, the working assumption is that 30-33% of the contracts will fail. In Figure 1 shown below, we replicate the risk profile of the executed RPS contracts. The viability of those contracts as shown in the figure below are sourced from the CPUC. Final 2010 figures are due on March 1.

Figure 1: Risk Profile of Executed RPS Contracts (Generation in mWhs)

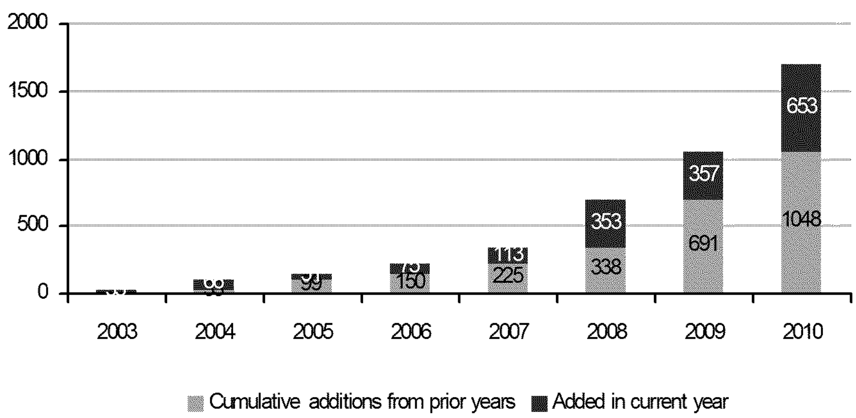


Source: California Public Utilities Commission, 4th Quarter 2010

How Much RPS Capacity is in Place Currently?

Through 2010, approximately 1.7GW of renewable capacity has been installed and is commercially operating. According to the CPUC, seventy percent of the new projects that were placed into service are located in California. This equates to 435MW. New capacity added consisted of a mix of solar PV, wind, hydro, biogas, and biomass.

Figure 2: RPS Capacity Installed Since 2003, by Year (in MW)



Source: California Public Utilities Commission, 4th Quarter 2010

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Key questions remain unanswered

- Has the Legislature contemplated the debt equivalency issues that the IOUs will be subjected to in order to comply with the RPS standard? Would this fall under the purview of the cost of capital proceedings?;
- A more precise definition of "retail sales," namely how is the denominator calculated;
- Is the self-build option a realistic one;
- Is the goal to reasonably reduce or is it to eliminate *all* fossil generation;
- Where does nuclear fit into all of this, especially when the license period for San Onofre and Diablo Canyon expire;
- What are the rules around transmission interconnection, especially the out-of-state suppliers;
- How is a renewable energy credit market created and defined, as well as monitored;
- What qualifies / doesn't qualify as a renewable energy resource, what exactly is an energy credit, and if one has equipment placed into service or executed contracts prior to 2005, are these qualifying "properties" and/or "projects"?
- Who really has oversight of compliance;
- What is “Plan B” in the event the cost structure for renewables does not improve and / or load growth does not materialize; and,
- What are the next steps, key timelines, etc., by the CPUC or others.

Read Throughs

Electrics

In our view, the near-term investment implications favor the renewable energy suppliers and not the state’s investor owned utilities. As of this time, PG&E Corp’s (PCG) strategy is build some rate base, Edison International (EIX) is pursuing a transmission strategy and Sempra Energy (SRE) has created a separate subsidiary outside the utility for renewables investing. NextEra Energy (NEE) has a significant solar and wind presence in California.

Solar PV Manufacturers

We believe the 33% RPS is a positive for Solar PV manufacturers. Solar PV manufacturers are on track to lower their manufacturing cost by about 10% year over year and at that cost reduction rate, we expect the levelized cost of electricity from solar panels will be at peak rate grid-parity in California by the 2013-14 timeframe. We view a 33% RPS significantly positive for the leading solar module manufacturers, who have already been a significant participant of the prior 20% RPS program.

First Solar, largest thin film solar module manufacturer, has signed a total of 2.17GW of PPAs with California IOUs to date. 1.92 GW out of the total 2.17GW has been approved by CPUC. According to First Solar, these PPA’s are between 14-16¢/kWh after tax. First Solar recently sold a 290MW project out of this pipeline to NRG and NRG received a Department of Energy loan guarantee

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for project financing. We believe the passage of 33% RPS will be positive for First Solar and believe thin film solar PV is a highly competitive technology as demonstrated by the signing of a 250MW PPA with SCE earlier this week. First Solar expects its solar systems to be at grid parity in California (<8¢/kWhp) by 2014.

Table 1: First Solar's pipeline of PPAs with California IOUs

Commission Approval Date	Project	IOU	MW	Contract Term (years)	Location	Online Date/Contracted Delivery Date
Jan-09	First Solar Desert Topaz	PG&E	550	20	San Luis Obispo County, CA	6/30/2014 (phase-in starting 12/31/2012)
Mar-10	First Solar Antelope Valley	PG&E	230	25	Lancaster, CA	12/31/2013
Jun-10	First Solar Agua Caliente/ Sold to NRG	PG&E	290	25	Yuma, AZ	12/1/2014
Sep-10	First Solar Desert Sunlight	SCE	250	20	Desert Center, CA	4/30/2015
Sep-10	First Solar Desert Sunlight	PG&E	300	25	Desert Center, CA	7/1/2015
Sep-10	First Solar Desert Stateline	SCE	300	20	San Bernardino County, CA	12/31/2015
		Total	**1920**			

Press Release Date	Project	IOU	MW	Contract Term (years)	Location	Online Date/Contracted Delivery Date
February 9, 2011	First Solar Silver State South	SCE	250	20	Clark County, NV	12/31/2014

Source: CPUC, Company reports

SunPower, largest US based crystalline silicon module manufacturer, has signed a total of 961MW of PPAs with California IOUs to date. 250MW out of the total 961MW has been approved by CPUC. SunPower recently sold their 250MW High Plains ranch project to NRG and the project has a pending loan guarantee application with Department of Energy. We believe the passage of 33% RPS will be positive for SunPower and SunPower's recent 711MW PPA signed with SCE is indicative of the competitive pricing solar PV technology can offer.

Table 2: Sunpower's pipeline of PPAs with California IOUs

Commission Approval Date	Project	IOU	MW	Contract Term (years)	Location	Online Date/Contracted Delivery Date
Feb-09	SunPower High Plains II	PG&E	210	20	San Luis Obispo County, CA	12/26/2011
Nov-10	SunPower High Plains Ranch III	PG&E	40	25	San Luis Obispo County, CA	12/31/2012

Projects waiting CPUC approval

Press Release Date	Project	IOU	MW	Contract Term (years)	Location	Online Date/Contracted Delivery Date
January 10, 2011	SunPower Rosamond	SCE	601	20	Kern County, CA	10/30/2016
January 10, 2011	SunPower Los Banos	SCE	110	20	Merced County, CA	12/31/2014

Source: CPUC, Company reports

Suntech, largest Chinese crystalline silicon solar module manufacturers, was recently selected by Sempra to supply 150MW of solar modules for the Sempra SGS-1 project in Arizona. The project has 20 year PPA signed with PG&E and the project PPA will be up for CPUC approval later this year. We believe 33% RPS law a positive for large scale solar manufacturers that we expect would be able to offer pricing at grid-parity by 2013-14.

Table 3: Suntech's recent win at Sempra

Submission Date	Project	IOU	MW	Contract Term (years)	Location	Online Date/Contracted Delivery Date
Oct-10	Sempra SGS-1	PG&E	150	20	Maricopa County, AZ	36 Months After Contract effective date

Source: CPUC, Company reports

■ Statement of Risk

Risks for the electric utility sector include: fair and reasonable regulatory treatment with respect to capital spending recovery; fuel and purchased power procurement; operating the generation, distribution, and transmission facilities safely and reliably, especially the nuclear facilities. Public policy mandates such as environmental spend could affect the timing and regulatory recovery. The companies require access to the capital markets and changes in the regulatory compact, or other issues, could impact the ability to raise capital at fair rates. Credit rating agency actions can also affect electric utilities. State regulatory commissions are not bound by prior commission decisions and can alter existing regulatory agreements provided there is a reasonable basis for doing so. Some state commissions are elected, adding another element of risk. Weather, customer growth, and mix also play a key in determining the earnings and cash flow of an electric utility

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Neutral	**Hold/Neutral**	42%	35%
Sell	**Sell**	8%	21%
UBS Short-Term Rating	**Rating Category**	**Coverage[3]**	**IB Services[4]**
Buy	**Buy**	less than 1%	14%
Sell	**Sell**	less than 1%	0%

1:Percentage of companies under coverage globally within the 12-month rating category.
2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.
3:Percentage of companies under coverage globally within the Short-Term rating category.
4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

Source: UBS. Rating allocations are as of 31 December 2010.

UBS Investment Research: Global Equity Rating Definitions

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Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report.

Additional Prices: Edison International, US$37.08 (09 Feb 2011); First Solar Inc, US$155.28 (09 Feb 2011); NextEra Energy Inc, US$55.24 (09 Feb 2011); NRG Energy Inc., US$20.68 (09 Feb 2011); PG&E Corporation, US$46.72 (09 Feb 2011); Sempra Energy, US$53.40 (09 Feb 2011); SunPower Corp, US$15.45 (09 Feb 2011); Suntech Power Holdings, US$8.72 (10 Feb 2011); Yingli Green Energy Holding Company, US$11.57 (10 Feb 2011); Source: UBS. All prices as of local market close.

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