

November 20, 2009

California Environmental Protection Agency  
Air Resources Board

Re: California Renewable Electricity Standard

Dear CARB Staff:

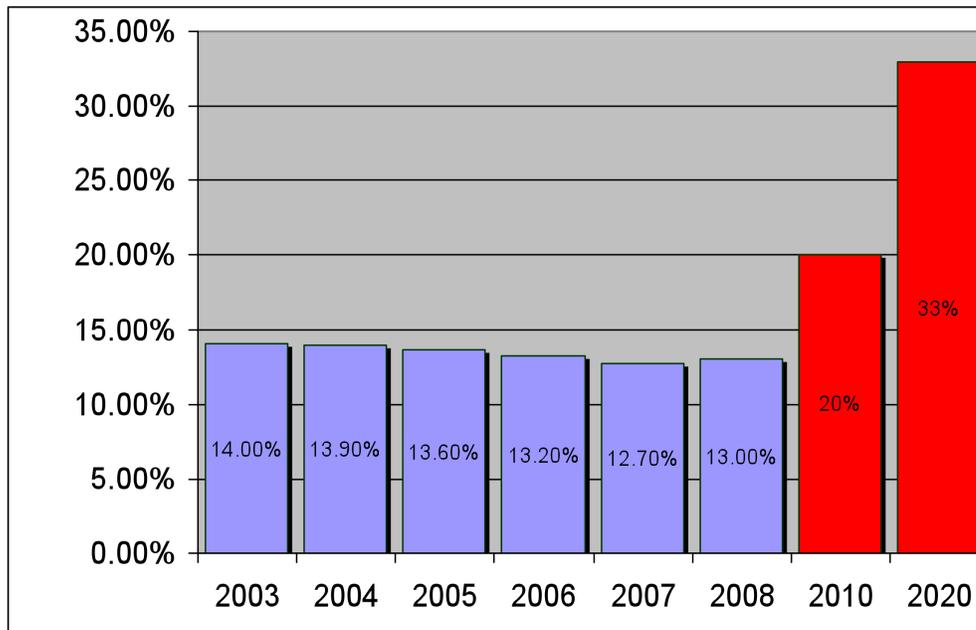
The FIT Coalition is a policy-driven organization whose members are passionate about renewable energy and its critical role in California's low-carbon future. The organization seeks out the best public policy mechanisms in the world for scaling renewable energy in terms of real, timely deployments rather than paper contracts that often do not result in actual energy production. Our extensive policy experience, ongoing research, and active policy participation allow the FIT Coalition to offer policy designs that will allow the State of California to achieve its renewable energy mandates via a predictable, low-risk, and cost-effective pathway.

With Executive Order S-21-09, Governor Schwarzenegger has empowered the California Air Resources Board (CARB) to mandate the best policy designs for achieving 33% of California's delivered energy coming from eligible renewable sources by 2020. By default, this means that CARB will be focused on avoiding the fate of the currently failing 20%-by-2010 RPS program.

After significant research, the FIT Coalition is confident that a successful 33%-by-2020 program must focus on the market segment with the most potential to scale renewable energy generation in a timely fashion: the Wholesale Distributed Generation (WDG) market segment. In addition, the FIT Coalition is confident that the CARB RES should follow the formal recommendation of the California Energy Commission (CEC) and mandate the most successful policy mechanism in the world for stimulating the WDG market: a comprehensive, 20MW-and-under, cost-based, standard must-take Feed-In-Tariff (FIT).

### Design Principles

The following chart clearly conveys the failure of California's 20%-by-2010 RPS. Amazingly, the percentage of California's delivered electricity coming from renewable sources has DECREASED during the seven years since this RPS program was instituted.



Without detailing the various design flaws in the current RPS program, it is clear that the implementation has failed to drive actual deployments of renewable energy at a pace that is remotely sufficient to achieve the mandate. Instead, the program has resulted in the major utilities, and the CPUC, placing highly risky bets on large-scale, central station facilities that are dependent on extremely expensive, uncertain, and decades-long transmission build-outs.

In effect, the regulations have allowed the gambling of California ratepayers' money in one of the most risky manners possible.

The FIT Coalition encourages CARB to adopt low-risk principles in the design of the RES regulations. We are confident that the RES can incorporate proven ideas to improve the overall confidence in our renewable energy targets while adhering to the key priorities set for CARB in AB32.

The FIT Coalition recommends the following as key guiding design principles that also meet AB32 priorities:

- ***Prioritize the development of low-risk projects.*** By minimizing the risk of individual project failure, total **risk-adjusted** cost to ratepayers is minimized.
- ***Encourage broad participation from a diverse range of smaller scale power plants.*** Diversifying risk over a large number of investments is a fundamental financial concept. In addition, it helps level the playing field to

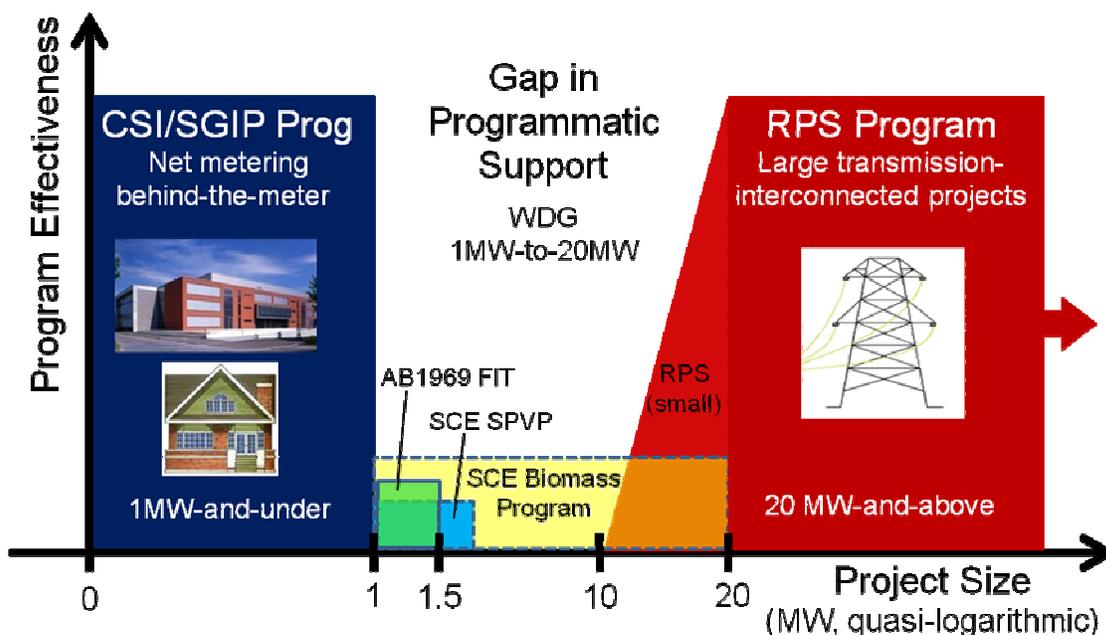
- allow developers of all sizes to participate, which also satisfies the AB32 requirement that the regulations be “equitable”.
- ***Focus on speed of deployment.*** If the regulation prioritizes renewable sources that can come online quickly, it helps drive “early action to reduce GHG emissions”. A corollary to this is to disallow “earmarking” of signed contracts for compliance. Since such contracts frequently do not represent realistic projects, counting them for compliance significantly increases the risk to the program.
  - ***Emphasize criteria for minimal environmental impact.*** Lower impact projects are at less risk for project delays and citizen opposition and help maximize societal benefits as stated in AB32.
  - ***Maximize in-state economic activity.*** Such regulations and projects reduce risk by attracting more local support and providing more visibility and control over project development. Of course, this also assures that economic benefits accrue to California instead of ceding those benefits to other states. Again, this supports the AB32 mandate to maximize economic benefits to California.

### Ideal Market Segment

Across the energy industry, the market segment that holds the best potential for achieving our renewable energy goals and excels in all of the key, low-risk design principles is the Wholesale Distributed Generation (WDG) market. Specifically, the segment is defined as renewable energy facilities under 20MW capacity interconnected to the distribution grid and selling energy to a utility (i.e., wholesale instead of behind-the-meter retail).

While Retail Distributed Generation (RDG, aka net metering) does not drive RPS satisfaction because the Renewable Energy Credits (RECs) are not owned by the utility, WDG has been shown to have enough potential in California to more than satisfy the 33% RPS target in a timely and cost-effective manner; and without significant grid upgrades. In fact, per the Federal Energy Regulatory Commission (FERC) Small Generator Interconnect Procedure (SGIP), all the grid upgrades associated with WDG are the responsibility of project developers; and hence the ratepayers are protected from any hidden costs associated with grid upgrades.

Multiple CEC studies have validated the vast potential of WDG. Unfortunately, entrenched players in the electricity market see WDG as a threat to their ability to build-out transmission infrastructure, and as a consequence, there is a critical gap in California’s renewable energy programs such that WDG has not been encouraged. This chart clearly shows the gap for 20MW-and-under WDG:



A focus on WDG projects in the RES program would strongly support the low-risk principles outlined above:

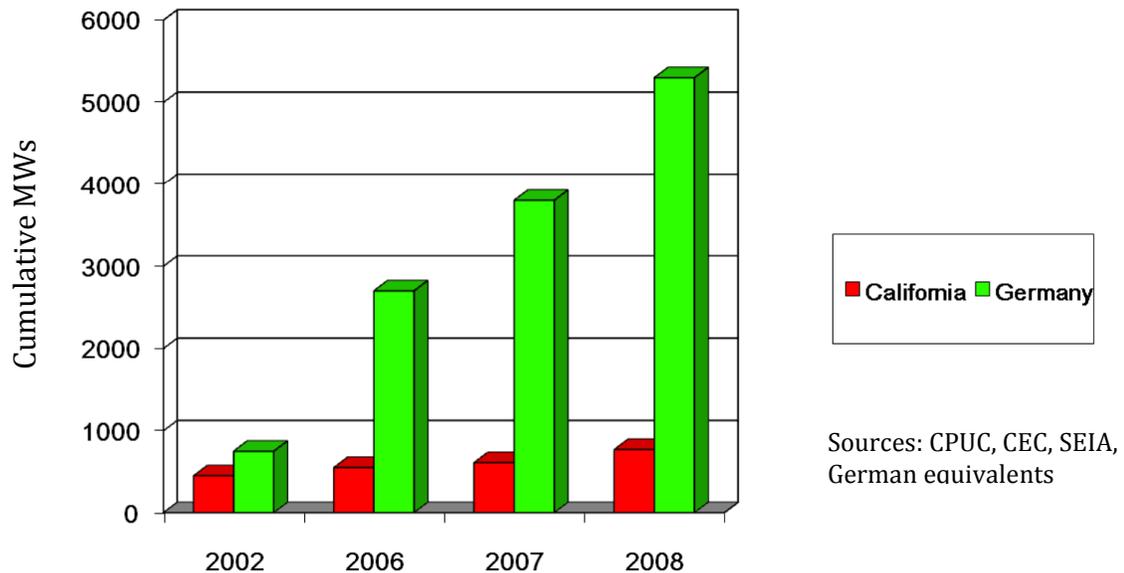
- WDG projects are inherently lower risk than large central station projects for multiple reasons, including the fact that smaller projects incur less risk of individual project failure.
- WDG projects do not depend on high-risk, and decades-long, transmission projects.
- The smaller scale of WDG projects encourages broad, diverse participation as compared to the limited pool of developers who can build large central station facilities.
- WDG projects can come online in a matter of months rather than the 5-20 years required by large projects and new transmission lines. Hence, WDG projects provide clear and timely visibility into the progress of the RES at all times.
- WDG projects can be sited on lands with fewer environmental risks and concerns. Smaller scale, distributed projects can be sited on disturbed lands that are close to load centers, including many “brownfield-to-greenfield” opportunities such as capped landfills. For central station projects, the Sunrise power link experience is just one of many examples that show the environmental, community opposition, and litigation risks associated with central station solutions and the transmission build-outs on which they depend.

## Ideal Policy Mechanism

The most successful policy mechanism in the world to stimulate the WDG market is a comprehensive, cost-based, standard must-take Feed-In-Tariff (FIT). The clearest evidence of the effectiveness of FIT programs comes from the German experience, where 10-15 times more solar energy is deployed there every year than in California, despite that fact that California has a solar resource intensity that is roughly 70% better than Germany's.

This graphic shows that Germany has found a pathway that serves as a clear example for California to actually achieve its RPS and RES mandates (it is important to note that despite misunderstandings to the contrary, the rates paid for PV in Germany are equivalent to approximately 15 cents/kWh in California due to differentials in tax benefits and solar resource intensity):

## Solar Markets: Germany vs California (RPS + CSI + other)



In California, legislative mandates and "FIT-like" PUC implementations to date have clearly failed to stimulate this solar market. While California often appears to be making worthy strides in renewables, that perception only arises in comparison to other states that are achieving almost nothing. When compared to the countries leading the way on renewables, California appears to be at a virtual standstill.

In December 2008 and again in the latest Integrated Energy Policy Report (IEPR), the California Energy Commission definitively stated that California should immediately adopt a comprehensive FIT for the under 20MW market based on the German model. Unfortunately, the CPUC has chosen to largely ignore the CEC's recommendation and instead has proposed unproven mechanisms that are fraught with inequity and are sized at insufficient scale. The CPUC proposals have a high risk of failure to stimulate timely deployment, and are not sized to make a significant progress on the RPS/RES mandates.

With respect to cost-effectiveness, FIT Coalition analyses have shown that a well-designed FIT program, as recommended by the CEC, could satisfy the 33%-by-2020 mandate with minimal additional cost to California ratepayers. In fact, when all factors are considered, ratepayers can save money as compared to business-as-usual energy price forecasts. This table shows the base case scenario for a comprehensive FIT sized to satisfy 2% of the RPS each year from 2010 to 2020:

*Table 1: Baseline Scenario with 5% annual FIT Rate depression and 2.5% annual avoided cost escalation*

|      | Total CA Energy | FIT Rate | FIT RPS   | FIT Quantity | Avoided Cost | Net Cost | Rates   | Rates  | Rate Impact |
|------|-----------------|----------|-----------|--------------|--------------|----------|---------|--------|-------------|
| Year | (GWh)           | (\$/kWh) | (% total) | (GWh)        | (\$/kWh)     | (\$mil)  | w/o FIT | w/ FIT | w/ FIT      |
| 2010 | 272,357         | 0.22     | 1%        | 2,724        | 0.15         | 191      | 0.137   | 0.138  | 0.51%       |
| 2011 | 275,944         | 0.21     | 3%        | 8,278        | 0.15         | 487      | 0.138   | 0.140  | 1.28%       |
| 2012 | 279,530         | 0.20     | 5%        | 13,977       | 0.16         | 689      | 0.139   | 0.142  | 1.77%       |
| 2013 | 283,116         | 0.19     | 7%        | 19,818       | 0.16         | 792      | 0.141   | 0.143  | 1.99%       |
| 2014 | 286,703         | 0.18     | 9%        | 25,803       | 0.17         | 794      | 0.142   | 0.145  | 1.95%       |
| 2015 | 290,289         | 0.17     | 11%       | 31,932       | 0.17         | 690      | 0.143   | 0.145  | 1.66%       |
| 2016 | 293,875         | 0.16     | 13%       | 38,204       | 0.17         | 478      | 0.144   | 0.146  | 1.13%       |
| 2017 | 297,461         | 0.15     | 15%       | 44,619       | 0.18         | 153      | 0.145   | 0.146  | 0.35%       |
| 2018 | 301,048         | 0.15     | 17%       | 51,178       | 0.18         | (287)    | 0.147   | 0.146  | -0.65%      |
| 2019 | 304,634         | 0.14     | 19%       | 57,880       | 0.19         | (847)    | 0.148   | 0.145  | -1.88%      |
| 2020 | 308,220         | 0.13     | 21%       | 64,726       | 0.19         | (1,531)  | 0.149   | 0.144  | -3.33%      |

Data source: CPUC E3 GHG Calculator, [http://www.ethree.com/CPUC\\_GHG\\_Model.html](http://www.ethree.com/CPUC_GHG_Model.html)

This base case analysis uses conservative assumptions for the FIT rate as well as the rise in fossil fuel energy prices and only considers the comparison of FIT rate costs to avoided costs.

The German experience has shown that additional factors, such as the merit-order effect and substitution effect, result in even greater savings to the ratepayers. In fact, the German government estimates that their FIT program is already saving ratepayers over 10 billion Euros per year. Details are available at the FIT Coalition website: [www.fitcoalition.com](http://www.fitcoalition.com)

Based on proven models and the imperative to massively accelerate the deployment of renewable energy to meet the 33% goal, the FIT Coalition strongly recommends that CARB incorporate the CEC-recommended FIT in the RES regulations. The FIT Coalition stands ready to aid in the design of such a mandate.

## **CES Concept Outline Feedback**

The following are the FIT Coalition responses to specific elements of the CES Concept Outline.

### *1.a Regulated Parties*

Ideally, the RES should apply to all load serving entities, regardless of size, so that the regulation is truly equitable and potential energy producers can take advantage of all opportunities regardless of location. The FIT Coalition contends that the regulations can be designed to minimize the administrative burden. For example, while the California Solar Initiative requires an application over 140 pages long, a German FIT application requires only 4 pages.

### *2.a. Eligible Resources*

While all RPS-eligible technologies should always be eligible under the RES, the RES should not limit eligibility to only the technologies that are RPS-eligible. The RES should work with the CEC to develop independent criteria for eligibility and a regular process for including new technologies that is distinct from the RPS.

### *2.c. Geographic Eligibility*

The RES should impose extremely tight restrictions on out-of-state resources. The WDG market in California has the potential to satisfy all of the RES goals, and a successful focus on in-state WDG will obviate the need to procure out-of-state energy. Furthermore out-of-state resource contravene the top priority design principles:

- These resources are inherently more risky due to the regulatory agencies' reduced ability to evaluate and monitor the projects.
- There is a direct conflict with the priority to maximize economic benefits in California.
- These resources conflict with the efficiency objective due to the extra cost, energy loss, and risk associated with transmission in to the state.

### *2.d. Renewable Energy Credits*

The RES should continue the current RPS policy to disallow REC-only transactions. A significant portion of the REC-value is lost in parasitic administrative costs associated with REC trading and monitoring. Also, REC-trading will encourage more out-of-state sourcing, incurring the risks and problems mentioned above.

### *3. RES Compliance*

A key weakness in the RPS is the concept of flexible compliance. Currently, utilities are allowed meet the requirements with signed contracts for energy delivery instead of actual production. The RES should disallow this flexibility and require that all compliance be based on actual renewable energy production.

### *4 & 5. Compliance and Agency Roles*

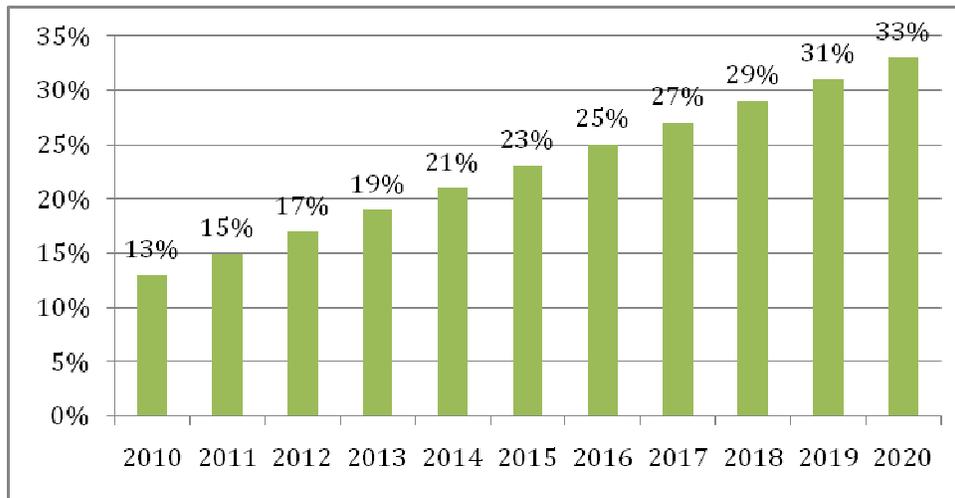
The FIT Coalition recommends that the scope of the RES be expanded to mandate specific policy mechanisms to be implemented by the CPUC. To date, legislative mandates, general targets and guidelines given to the CPUC have not resulted in successful programs to meet the RPS goals. If the RES follows previous patterns, the expectation is that the forces brought to bear on the CPUC will again prevent the implementation of truly effective policies.

CARB has the authority to achieve substantive progress by not only setting targets and penalties, but by requiring the CPUC and the POU's to implement the specific programs that will allow and incent all of the utilities to comply with the targets.

## **Conclusion**

With the RES, CARB has an unprecedented opportunity to quickly and boldly move California forward on its AB32 and RPS goals. The design of the RES and the programs it mandates for the CPUC and the utilities will determine how California progresses. It will also determine the risks that ratepayers and citizens are taking on.

Based on its extensive research and expertise, the FIT Coalition supports a strategy that achieves low-risk, cost-effective, steady annual results by unleashing the Wholesale Distributed Generation market segment via the CEC-recommended FIT. This market can smoothly provide California an annual increase of 2% to its percentage of energy from renewable sources and thus achieve the 33% RES target on schedule by 2020, as shown in the following chart:



Focusing on WDG will allow CARB to monitor steady, real progress and avoid the high-risk, unrealistic “hockey-stick” approach that a large, central station strategy represents.

To pursue a successful WDG strategy, the most cost-effective, proven policy mechanism is the comprehensive, cost-based, standard must-take Feed-In Tariff. Thus, the clear conclusion is that the RES should incorporate such a FIT within the regulations and mandate the best FIT designs for every regulated entity.

The FIT Coalition welcomes any questions regarding WDG and FIT policies and looks forward to working with CARB further on this critically important regulation.

Best Regards,

/s/ TED KO

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