

January 26, 2010

California Environmental Protection Agency  
Air Resources Board

Comments on the Second Public Workshop for the Renewable Electricity Standard

RE: Economic Analysis

Dear ARB 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. Our extensive experience, ongoing research, and active policy participation enable 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.

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: Wholesale Distributed Generation (WDG). In addition, the FIT Coalition supports the formal recommendation of the California Energy Commission (CEC) to implement 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).

As the ARB staff analyzes the potential economic impacts of a 33% RES, the FIT Coalition suggests that staff consider and analyze WDG as a means to maximize in-state economic activity while keeping electricity rates and customer energy bills in check.

### Cost Effectiveness

Despite the economies of scale enjoyed by large central-station facilities, generating energy that is connected to the distribution grid and sited close to demand is inherently more cost-effective overall. WDG energy does not suffer from the effects of transmission line loss, transmission congestion and grid congestion. Thus, for a given level of demand, less energy must be generated from WDG projects. In fact, a CPUC-commissioned study found that distribution interconnected energy is 35% more valuable than transmission connected energy due to these effects.

Furthermore, as suggested in previous comments submitted by the FIT Coalition, economic modeling of 33% RES solutions should consider the **risk-adjusted** cost effectiveness of each approach. While the cost calculations for energy generated in

remote areas typically includes the nominal cost of necessary transmission lines, the models should also include adjustments for the significant risks and long timelines of transmission projects. The preliminary Implementation Analysis conducted by the CPUC estimated the necessary transmission costs at \$12B **assuming all projects were successful**. The report then concludes that actual investment in transmission will need to be significantly higher in order to mitigate the risks of project failure.

WDG avoids transmission costs altogether and can in fact be deployed with minimal network upgrade costs. The CEC has estimated that California substations and feeders can accept up to 21,700 MW of solar PV input (as of 2008) with no substantive upgrades. Thus, WDG could potentially satisfy most of the needed renewable energy generation with lower overall risk.

### Economic Impact

The development and rapid growth of the WDG marketplace would have considerable economic advantages over the current RPS central-station approach undertaken by utilities. The most obvious advantage lies in the fact that satisfying the RES with thousands of smaller-scale projects rather than a few dozen very large-scale projects will create more jobs.

By definition, these jobs in WDG projects will be spread across the state, providing an economic boost to a much larger number of communities. Central-station projects are generally sited in sparsely populated areas, where the economic benefits may accrue primarily to the developer. So, the FIT Coalition recommends that the RES Economic Analysis fully consider the distribution of economic benefits as an added factor to the calculation of total benefits.

### Feed-In-Tariff Benefits

A comprehensive, German-style Feed-In-Tariff is the only policy mechanism in the world proven to bring large amounts of renewable energy online quickly and cost-effectively. Although conventional wisdom has said that these policies were expensive for ratepayers, the European experience has in fact shown that a well designed policy ultimately saves ratepayers money while boosting the local economy and creating valuable jobs.

For California, the FIT Coalition has conducted an in-depth analysis of how a state-wide FIT program would impact electricity rates if the program were sized to meet the 33% RES target.

The following chart shows that with reasonable assumptions, rates under a FIT program peak around a 1% premium compared to estimated rates under business-as-usual, and by 2020, ratepayers are saving more than 3% on their rates.

*Table 1: Baseline Scenario with 5% annual FIT Rate depression and 3% 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	with FIT	with FIT
2011	267,665	0.170	2%	5,353	0.125	241	0.138	0.139	0.65%
2012	268,349	0.162	4%	10,734	0.129	397	0.139	0.141	1.06%
2013	268,960	0.153	6%	16,138	0.133	468	0.141	0.142	1.24%
2014	269,500	0.146	8%	21,560	0.137	454	0.142	0.144	1.18%
2015	269,969	0.138	10%	26,997	0.141	353	0.143	0.144	0.92%
2016	270,365	0.132	12%	32,444	0.145	166	0.144	0.145	0.43%
2017	270,690	0.125	14%	37,897	0.149	(107)	0.145	0.145	-0.27%
2018	270,943	0.119	16%	43,351	0.154	(468)	0.147	0.145	-1.18%
2019	271,124	0.113	18%	48,802	0.158	(916)	0.148	0.144	-2.29%
2020	271,234	0.107	20%	54,247	0.163	(1,453)	0.149	0.144	-3.59%

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

Note that over the next decade, ratepayers cumulatively save money compared to business-as-usual. More importantly, with a successful FIT Program the ratepayers save money compared to an RPS program that emphasizes large central station generation.

## Conclusion

The FIT Coalition submits that an economic analysis of the 33% RES goal should consider the strong benefits of a Feed-In-Tariff that unleashes the development of Wholesale Distributed Generation. By including the varied benefits mentioned here, such an analysis will undoubtedly find that the high WDG scenario provides the most desirable overall economic benefits to California. The FIT Coalition welcomes any questions regarding WDG and FIT policies and looks forward to working with ARB further on this critically important regulation.

Best Regards,

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