Bloomenergy™

July 30, 2008

Mary Nichols, Chair
California Air Resources Board
1100 I Street
Sacramento, California 95814

Dear Ms. Nichols,

Bloom Energy would like to applaud the California Air Resources Board on the release of its scoping plan for the implementation of AB32. It is a bold first draft towards implementing a framework for California to establish itself as a global clean energy leader.

In addition to the current recommendations, we propose the following additional items to consider:

1) Promote the use of new ultra-clean distributed generation technologies in addition to the classic Renewable Portfolio Standard (RPS) and Combined Heat and Power (CHP) solutions.

2) Take additional measures to ensure that California captures the economic benefits of its environmental leadership.

Ultra Clean Distributed Generation Needs to Be Part of the State's Carbon Reduction Plans

The AB 32 scoping plan courageously recommends many ambitious clean energy goals, most significantly a 33% RPS, 30,000 GWh of CHP, and a regional cap and trade program. While all of these goals will have a significant positive impact, we believe that they don't recognize the potential for innovative new breakthrough technologies that are being developed in Silicon Valley and throughout the world today. To that end, we implore ARB to include all-electric distributed generation (DG) technologies – not just traditional renewables and CHP - in its carbon reduction goals.

Renewables and CHP do have an important role to play in California's energy future. However, limiting our focus on these technologies fails to recognize the explosion of new innovations in this sector. For example, new breeds of highly efficient fuel cells can convert a wide range of fuels into clean electricity with very little CO_2 emissions and virtually no NOx, SOx, or other harmful particulate emissions – but they do not fit the traditional renewable or CHP definitions, nor are they included in the scoping plan.

While legacy fuel cell technologies are designed to use their waste heat externally to improve their overall efficiencies and economics, the newest fuel cell technologies achieve unprecedented overall electrical efficiencies by using their waste heat *internally* to boost overall efficiency. Further, the most efficient fuel cells used for stationary, baseload, distributed generation replace

the need for additional emissions from combustion-based power plants while simultaneously reducing the burden on the transmission grid. Many argue that increasing the RPS to 33% will be too expensive and too burdensome on California's already strained transmission and distribution infrastructure. Ultra-clean electricity generation at the point of demand does not require any additional infrastructure and allows capacity for more renewables to be brought to the load center via the off loaded capacity.

However, these technologies would not be included in any of the AB32 CO_2 reduction strategies. Recognizing the crucial role that ultra-clean DG solutions can provide both for GHG reductions and for easing the strain on the grid, the AB32 scoping plan should promote the adoption of technology neutral DG, not just legacy renewables and CHP.

In addition to the environmental and logistical benefits that ultra-clean fuel cells used for DG can provide to California as a whole, an increasing number of commercial and industrial companies are electing to install these technologies as a proven, cost-effective clean energy solution. It is important that the ARB recognize the benefits of what some California companies are already doing, and capture and promote their benefits as part of the state's GHG reduction plans

Therefore, in addition to changing the CHP goal to a more comprehensive, technology neutral DG goal, we encourage the ARB to issue carbon reduction credits to customers who install clean energy technologies like fuel cells. These customers can then either retire the credits, or trade the credits and add the value of these credits into their economic analysis of whether or not to purchase these carbon reducing technologies.

Similarly, as new funds are generated from a carbon cap and trade program, we encourage the state to use some of those funds to promote the expanded installations of fuel cells in California. This could take the form of an increase in the state subsidy funding program for DG (The Self Generation Incentive Program administered by the California Public Utilities Commission), the state purchasing and installing high efficiency fuel cells at state buildings, and/or a statewide technology neutral, ultra-clean DG mandate to accompany the RPS.

AB32 Implementation Should Proactively Support the California Economy

The AB 32 scoping document states that the scoping plan is, "Designed to maximize the total benefits that can accompany the transition to a clean energy economy." We applaud the ARB's recognition that "each $100 million in venture capital funding helps create 2,700 jobs, $500 million in annual revenues for two decades and many indirect jobs." While we agree with the plan's claims that, "Programs to reduce greenhouse gases under AB 32 are a prudent investment in the future, addressing future costs and significant environmental risks," California needs to make sure that it does more to capture the economic benefits of its environmental leadership. We need to be sure that the jobs that are created by AB32 are created in California.

California has taken a leadership position on clean energy, setting the bar with some of the most innovative and inspiring legislation and consumer incentive programs in the world. But despite this progressive thinking and these good intentions, California is at risk of missing out on the

economic development and job creation from the very industries our legislation and programs are helping to foster.

While the first wave of cleantech development is happening in California, it is critical that the implementation of AB32 takes a new look at its approach to cleantech. In order to avoid the continued loss of cleantech jobs, and in order to attract new cleantech manufacturing jobs to California, the state should take proactive steps to explicitly promote California cleantech economic development as part of its clean energy strategy.

Many cleantech companies are seeded in California but then abandon our state when they grow beyond the R&D stage. In 2007 alone, Oregon secured three commitments from California solar companies to relocate, creating photovoltaic plants with a collective manufacturing capacity of 648 megawatts by 2009.[1] And the exodus goes beyond the solar industry. Fuel cell company UltraCell left California to move to Ohio, and it took an impassioned effort from the Governor and Treasurer to keep Tesla Motors from moving to New Mexico. The real problem is that cleantech companies are abandoning California while still taking advantage of California subsidies to sell their goods in the state. As a result, California is exporting jobs to other states and these jobs are still being subsidized by California public funds.

California can do more to support "homegrown" technologies. While other states are aggressively taking steps to capture the economic benefits of their clean technology leadership, California is falling behind**.** New York, Ohio, Pennsylvania, Connecticut, Massachusetts, Texas, New Mexico, and others all have better incentives to support their local cleantech companies. These states offer a combination of grants, tax incentives and credits, loans and guarantees, and seed capital to promote local jobs and the adoption of technologies developed and/or manufactured in those states.

California's focus thus far has been almost exclusively on the demand side. The next logical step is to combine the state's environmental and economic development goals. Instead of California following most other states by providing corporate welfare to cleantech companies, California can use its *existing* clean energy programs, and the revenues generated from the cap and trade program, to ensure that California manufactured technologies receive their fare share of these funds.

In addition to promoting the expansion of its clean energy portfolio beyond being exclusively focused on CHP and large-scale renewables, the state should use the money generated from the cap and trade program to:

- Better coordinate its research and funding programs to support its economic development priorities
- Prepare its workforce for the needs of the new green energy economy
- Promote the retrofit and installation of clean energy generation and efficiency technologies at state facilities
- Offer special tax credits for cleantech manufacturing facilities

[1] Sacramento Business Journal, "Oregon competes for California's solar firms," November 2, 2007

- While continuing to promote clean energy generation, conservation and end-user efficiency, the state should simultaneously promote technologies that are developed and manufactured in California

California has a tremendous opportunity to capitalize on the economic development and job creation that can come from its environmental leadership. While it's very important to encourage consumers and utilities to buy clean technologies, that's not enough. We need to create market mechanisms that encourage consumers and utilities to buy California-built clean technologies. In doing so we can help California's environment AND California's economy.

Thank you very much for your leadership,

Josh Richman
Director of Business Development
Bloom Energy Corporation