



California Wind Energy Association

November 1, 2013

Mary D. Nichols, Chairman
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Richard Corey, Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Via CARB comments webpage: <http://www.arb.ca.gov/cc/scopingplan/2013comments.htm>

Re: Comments on AB 32 Scoping Plan – First Update, Discussion Draft

Dear Chairman Nichols and Mr. Corey,

The California Wind Energy Association (“CalWEA”) appreciates this opportunity to comment on the October 1, 2013, Discussion Draft for the ARB’s Climate Change Scoping Plan – First Update (“Discussion Draft”). As stated, the update will define ARB’s climate change priorities for the next five years and will lay the groundwork to reach post-2020 goals.

CalWEA supported the Global Warming Solutions Act of 2006 (“AB 32”) and continues to strongly support the California’s leadership in responding to the threat of climate change. CalWEA is proud of the significant contribution that wind energy has made to date toward achievement of AB 32’s 2020 goals: wind energy capacity has more than tripled under the state’s Renewables Portfolio Standard (“RPS”) law, with over 5,500 megawatts (“MW”) installed in California – the second highest installed capacity among all U.S. states.¹ Together with out-of-state wind energy resources also serving California under the RPS, wind energy now provides over six percent of California’s electricity needs. Nationwide, more than 60,000 MW of wind energy are installed and operating. Wind energy was the single largest source of new electric generating capacity in 2012, and was second only to natural gas for several years running before surging ahead last year. Technology advances continue to lower the cost of wind energy, with costs decreasing more than 40% in the last four years.

¹ CalWEA appreciates the very lovely reference to wind energy in the conclusion section of the report. Given the fast-pace of recent wind project development, the reference to “over 4,000 megawatts” of wind is now 1,500 MW too low.

CalWEA strongly supports the Discussion Draft's assertion that a 2030 GHG-reduction target will need to be established to maintain the success and momentum that the ARB and other state agencies have achieved under the initial Scoping Plan to achieve the 2020 goal. However, while CalWEA understands that this report represents a very high-level initial view, we do have some concerns regarding the Discussion Draft and offer some suggestions. Specifically, as explained below, CalWEA believes that the Discussion Draft:

- is lacking in attention to cost issues;
- should call for a comprehensive cost-effectiveness analysis that evaluates the efficiency of the various policies and programs in reducing GHGs before establishing priorities, and should take a regional perspective in that evaluation;
- should call attention to the importance of preserving the state's most valuable renewable resources for potential development in the state-federal Desert Renewable Energy Conservation Plan ("DRECP") to support cost-effective and affordable achievement of post-2020 GHG goals; and,
- particularly if California's in-state resources are largely put off-limits as a result of the DRECP process, should consider ways in which Western renewables can help achieve post-2020 goals cost-effectively and affordably.

I. A 2030 Target Is Needed

CalWEA agrees with the Discussion Draft that establishing a firm emissions target for 2030 across all sectors, consistent with the trajectory shown in Figure 6, will be necessary to maintain progress towards achieving the 2050 goal by guiding policy decisions and providing a clear market signal for continued investment in low-carbon technologies such as wind energy.

II. The Discussion Draft Is Lacking in Attention to Cost Issues

If California's leadership is to attract significant followership, California must show the way towards achieving GHG-reduction goals as efficiently as possible and at a reasonable cost. Likewise, public support for post-2020 reduction goals will not be immune to its costs. Equally important to establishing what should be an ambitious 2030 goal, therefore, will be maintaining stakeholder and public support for the goal which, in turn, will require that the most cost-effective and affordable GHG abatement activities are pursued first. CalWEA finds the Discussion Draft to be lacking in attention to what should be an essential aspect of the plan.

CalWEA notes a passage that is particularly striking in its lack of consideration for potential cost implications. On page 78, the Discussion Draft states:

In the energy sector, the 33 percent Renewables Portfolio Standard is the primary driver for de-carbonizing the electricity supply. However, adding more variable renewable resources such as wind and solar creates challenges for system reliability and prompts the need for cleaner, distributed energy stored throughout the grid. Energy storage technologies provide

valuable added benefits to improve power stability, quality, and reliability and allow development of a more intelligent electricity network (smart grid).

First, the passage suggests that the “challenges” associated with integrating variable wind and solar resources under the 33% RPS are both costly and insurmountable. In fact, though not widely appreciated, studies conducted by the CAISO for the CPUC’s Long Term Planning Process have shown that 33% renewables on the grid, comprised primarily of variable wind and solar resources, can be accommodated without adding any additional resources to the system for this purpose, *even in the face of the planned and unplanned retirements of the once-through-cooling (OTC) plants and nuclear plants (SONGS)*. Thus, the cost of integrating these intermittent renewables will reflect the relatively low cost of paying existing gas facilities to operate more flexibly (but much less often overall). CalWEA has provided estimates to the CPUC showing that these costs will amount to a very small fraction of the total cost of variable wind and solar resources.²

Other relatively simple but powerful practices and reforms to facilitate the integration of variable renewables have barely been tapped. For example, the CAISO this year has launched an Energy Imbalance Market (“EIM”), which will provide real-time visibility of available resources across all participating balancing areas in the West, combining geographically diverse loads and resources, and using the least-cost available generation across the combined EIM area to balance markets in real-time. This new market will facilitate the integration of renewable resources in California and across the West. The CAISO is also in the process of reforming its own market so that variable resources can participate more effectively and efficiently in the market, which will reduce integration resource needs.³

Second, the passage suggests that, because of the integration challenge, there is either a physical need for distributed energy and storage, or at least that these resources would be more cost-effective than renewables deployed more centrally under the RPS along with system-level integration services. CalWEA does not believe this to be the case, nor are we aware of any evidence to support the suggestion, certainly for penetration levels immediately above 33% in California. Moreover, “distributed energy” is likely to be comprised in significant part by the same variable solar resources (and, to a much lesser extent, wind) that have been deployed under the RPS, but on the distribution grid, which raises its own challenges and costs.

While there may well be a significant role for distributed energy and storage to play, keeping the costs of achieving California’s GHG-reduction goals in check will require careful evaluation of the total costs of different approaches to achieving them, from a holistic system perspective, and prioritizing the approaches accordingly.

² See “Comments of the California Wind Energy Association on Second Assigned Commissioner’s Ruling Issuing Procurement Reform Proposals,” November 20, 2012. Available at: http://www.calwea.org/pdfs/publicFilings2012/CalWEA_Comments_on_Second_Assigned_Commissioner_Ruling_11_20_12.pdf.

³ The Discussion Draft later mentions, at p. 85, that a regional imbalance market could help to reduce GHG emissions, but more consideration should be given to the implications of such a market, and other integration options, on the overall cost-effectiveness of various policy and program goals.

III. A Rigorous and Transparent Cost-Effectiveness Analysis Is Needed

While the Discussion Draft briefly references the need for the plan to evaluate and recommend the most appropriate combination of clean energy technologies (p. 84), the draft goes on to recommend certain strategies before the cost-evaluation has been conducted. Before the ARB leaps to conclusions about what energy programs and policies should be pursued, a rigorous and transparent cost-effectiveness analysis of the options, from a long-term holistic perspective, should be conducted both within the electric sector and across sectors.

A proliferation of policies and programs aimed in part at reducing GHG emissions in the electric and residential and commercial building sectors has evolved absent any overarching framework or consistent evaluation tools to ensure that the most cost-effective GHG-reduction and integration options are pursued first. The result is that we now have a panoply of “siloed” programs and policies that may not all be justifiable as the most efficient ways of reducing GHGs

A comprehensive cost-effectiveness analysis should evaluate, with stakeholder engagement, the efficiency of the various policies and programs in reducing GHGs, with separate consideration of non-GHG-related program objectives. Such analysis should precede any decisions on policies and programs to achieve GHG goals, and should be used to evaluate the cost-effectiveness of existing programs and inform prioritized activities to achieve post-2020 goals.

This analysis should guide the actions of entities subject to GHG caps, while providing them with substantial flexibility to optimize among all resources to achieve the 2030 GHG goal and to plan for the 2050 goal in a holistic manner at the least overall cost, while meeting other necessary objectives such as safety and grid reliability.

IV. Regional Perspective

Taking an electric-system-wide perspective on potential GHG reductions will allow greater and more cost-effective emissions reductions which, in turn, will provide more comfort in setting a 2030 target consistent with a steady trajectory toward 2050 goals. A recent report produced by Synapse Energy Economics under a California Energy Commission grant shows, for example, that the addition of new wind facilities (which provide output across peak and off-peak periods) yielded relatively large CO₂ displacement due to the fact that this production reduces the dispatch of coal-fired units outside California.⁴

The Synapse study relied upon extensive production simulation modeling of the entire Western Electricity Coordinating Council (“WECC”) to determine the impact of actions taken in California on electricity production and air emissions (NO_x, SO₂ and CO₂) throughout the WECC. As the report pointed out, the Western grid is highly interconnected, and therefore changes in load, generation, or

⁴ *Emissions Reductions from Renewable Energy and Energy Efficiency in California Air Quality Management Districts*, Public Interest Energy Research Program, Final Project Report, prepared by Synapse Energy Economics for the California Energy Commission (November 2011).

resource availability in California affect generators throughout the entire WECC system. As a result, emissions benefits from clean energy programs implemented in California are highly dispersed.

The Synapse report finds that, although changes in peak and off-peak loads have an impact on emissions within California, there are much greater emissions impacts associated with displaced energy outside of California, within the WECC. Because the displaced energy outside of California has far higher emissions rates (due to higher out-of-state coal-fired generation), measures that led to a reduction in unit dispatch outside the state were shown to have far more significant emissions impacts.

We urge the ARB to heed the report's conclusion that a comprehensive modeling approach is required to estimate the emissions reduction potential of California electric system measures in a highly interconnected region such as WECC

V. The Plan Should Call Attention to the Importance of Renewable Resources in the California Desert in Achieving 2030 Goals Cost-Effectively, and Should Consider Ways in Which Western Renewables Can Help Achieve 2030 Goals Cost-Effectively

The Discussion Draft points to the “highly efficient, low carbon, electrified economy” that will be required to reach 2030 and 2050 goals, which will place a “heavy burden” on the electricity sector. In turn, the efficient electric sector will need to rely extensively on clean, renewable energy sources to provide the energy needed across sectors. California's highest-quality renewable resources are concentrated in the desert region, which is now undergoing a landscape planning effort known as the Desert Renewable Energy Conservation Plan (DRECP). Unfortunately, that effort currently threatens to substantially foreclose upon the ability to draw from California's own renewable resources. The ARB should call attention to the importance of California's desert renewable resources in achieving GHG-reduction goals cost-effectively and with the economic benefits of developing projects within the state.

The original impetus for the DRECP was a good one – namely to find a balance between conserving desert ecosystems and fostering prudent development areas, all within a vast planning area. This concept was an ideal one in that it would provide a framework and guidance for both the conservation and development communities to plan their own efforts for the next four decades. Very unfortunately, as the process has unfolded, the Plan has lost its original intended balance. None of the five Alternatives that have been released to date properly balance the desire for reserve areas with the need to preserve California's potential for renewable energy development to support the state's GHG-reduction goals.⁵ Unless a major course-correction is made, wind energy will be categorically excluded across most federal lands, which host the most valuable undeveloped resources; likewise, solar energy development will also be substantially restricted.

⁵ For more detail, see, e.g., CalWEA's Comments on the DRECP July 2012 Stakeholder Meeting and Materials, available at: http://www.calwea.org/pdfs/publicFilings2012/CalWEA_Comments-DRECP_July_2012_Stakeholders_Meeting_8-16-12_Fnl.pdf, and the Comments of the Center for Energy Efficiency and Renewable Technologies and the Large-scale Solar Association on the December 2012 draft DRECP documents at: http://drecp.org/documents/docs/comments-evals/LSA_CEERT_SEddy_VWhite_comments.pdf.

Particularly if in-state resources are substantially restricted by the DRECP or other state or federal land-use planning efforts, the ARB should explore ways of widening the opportunity for new renewable resources within the WECC region to contribute to post-2020 GHG-reduction goals (with careful attention to potential double-counting and ensuring that already operating resources are not simply counted towards California goals). As noted above, California's electric system is highly interconnected with the Western grid, and the Western states are host to excellent wind and other renewable energy resources. Expanding the pool of available sources for reducing GHGs will necessarily reduce the cost of meeting California's 2030 GHG goals.

CalWEA very much appreciates this opportunity to comment, and we look forward to further engagement in the development of the first update to the Scoping Plan.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Nancy Rader". The signature is fluid and cursive, with the first name "Nancy" being more prominent than the last name "Rader".

Nancy Rader
Executive Director