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TechNet

September 8, 2008

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

RE: Comments of the Technology Network ("TechNet") regarding Climate Change Scoping Plan & Appendices

Dear Chairwoman Nichols:

TechNet is the bipartisan network of chief executive officers and senior executives of the nation's leading technology companies, committed to promoting the growth of technology and the innovation economy. TechNet's members, most headquartered in California, represent more than one million employees in the fields of clean energy technology, software, hardware, biotechnology, e-commerce and finance. We applaud the California Air Resources Board's June 26 Climate Change Draft Scoping Plan for achieving greenhouse gas ("GHG") emissions reductions required under the Global Warming Solutions Act of 2006.

With full recognition of the scope and complexity of the implementation challenge, TechNet appreciates the deliberative, thorough and careful approach undertaken by the Board in crafting the Scoping Plan. We also applaud the Board for recognizing that long-term carbon emission reductions of 80% or more by 2050 will be required to limit the most dangerous effects of climate change and that to achieve such reductions California needs to promote innovation that produces significant improvement in technology and infrastructure.[1] We believe such investments can position the state as a leader in emerging technologies, create high-paying jobs, and reduce energy imports and urban air pollution, while protecting the global environment.

A fundamental principal of our strategy should be to set aggressive targets and requirements in a technology-neutral fashion, while fostering research and providing predictability and stability in its incentive programs. If there is one overriding area of concern we have with the Scoping Plan, it is that more must be done to promote the deployment of technologies that will be needed to realize the necessary carbon reductions in a cost-effective manner. Because a number of barriers stand in the way of commercializing new technologies, as highlighted in the ETAAC report[2], state leadership

[1] California Air Resources Board, *Climate Change Draft Scoping Plan*, June 26, 2008, p. C-58 ("Draft Plan")
[2] Economic and Technology Advancement Advisory Committee, *Technologies and Policies to Consider for Reducing Greenhouse Gas Emissions in California: Recommendations of the Economic and Technology Advancement Advisory Committee Final Report to the Air Resources Board, February 11,* 2008, ("ETAAC Report") pp. 2-9 – 2-14

and resources will continue to be critical for providing an environment in which new technologies can be rapidly tested, proven, scaled up and deployed.

With respect to the Scoping Plan and its Appendices ("Draft Plan"), TechNet offers the following comments.

Strengthen the Renewables Portfolio Standard ("RPS") and Promote Deployment.
TechNet supports increasing the requirements for delivery of renewable power, a policy that will provide a stable, long-term market for clean energy generation technologies, helping to spur investment in developing and improving energy alternatives. Specifically, TechNet supports the Governor's call for a 33% RPS, a step estimated to achieve approximately 12% of the Draft Plan's total GHG reductions. Two publicly-owned utilities, Los Angeles Department of Water and Power and the Imperial Irrigation District, have already established targets of 35 and 30% respectively by 2020.

TechNet believes that significant barriers to achievement of the 33% standard must be addressed, as noted in the Final Report from the Economic and Technology Advancement Advisory Committee, ("ETAAC")[3]. These include the need to address permitting and access to transmission for clean power, transmission cost allocation, and the development of storage technologies and solutions that would facilitate the storage of off-peak power such as solar and wind for delivery during peak periods. As recommended by ETAAC, the Board and other California policy makers should adopt a technology-neutral, standards-based policy approach and conduct analysis of other technologies with significant GHG emissions reduction potential, such as highly efficient fuel cells, that could play a significant role in meeting expanded standards.[4]

A critical impediment to achievement of higher RPS is the lack of transmission access to urban centers, which has limited development of distant renewable resource-rich areas like the Mojave Desert. TechNet strongly supports the designation of competitive renewable energy zones in which permitting and environmental review for siting and transmission would be expedited and coordinated among state, federal and local agencies, as exists with the California Energy Commission's and federal Bureau of Land Management's joint NEPA/CEQA process for concentrating solar power plants.

The Renewable Energy Transmission Initiative ("RETI"), a statewide initiative including the Public Utilities Commission ("PUC"), California Energy Commission ("CEC"), California Independent System Operator ("ISO") and publicly-owned utilities, has a responsibility of paramount importance – identification of the transmission projects needed to achieve renewable energy goals, facilitation and designation of transmission corridors and, ultimately, through its constituent members, adoption of expedited generation siting and permitting activity. Once these steps are taken, financing of new transmission infrastructure must be accomplished in a manner that does not stifle the deployment of these new energy technologies.

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[3] Id., p. 5-7
[4] Id. , p 5-8

Achievement of a higher RPS will also require the state to adopt policies to proactively demonstrate new technologies, allowing them to scale and achieve cost reductions, so that these technologies will be able to contribute to future reductions. As acknowledged in the ETAAC report, disparate and complicated state programs make it difficult for generally small emerging growth companies to identify participation opportunities.[5] There is clear need for California to put forward incentives and support from laboratory research all the way through full commercialization. A particularly vulnerable stage for new technologies is making the leap from a successful demonstration of a technology to a commercial product.

With respect to California's solar programs, for example, there is a programmatic gap in support for mid-sized generators and generation close to demand load. The California Solar Initiative incents generation capacity up to 1MW, the current state RPS incents generation greater than 20MW, and the California Feed-in Tariff ("FiT") established by AB 1969 also incents renewables up to 1.5MW in capacity. Support is needed for generation projects in the mid-range between 1 and 20 MW is needed to help the state meet its RPS goals.

TechNet believes that the generator size cap on the AB1969 FiT should be raised to 20MW and that the FiT should apply more broadly to any qualifying clean distributed energy source. Also, the statewide capacity cap should be increased from 478.5 MW to at least 1,000 MW to stimulate more rapid deployment of mid-sized clean energy systems. Improved performance based incentives for mid-sized, close-to-load generation will give utilities more technology and project options to use for RPS compliance, as well as reduce costs of transmission. Making a strong investment case for renewable generation within the 1-20MW range that is based on performance will encourage additional private investment into renewable generation closer to demand load and remove some of the burden from utilities. In this context, the state should also encourage the development of community-scale systems that can provide additional clean energy options to individual electricity consumers

TechNet also recommends that new technologies created to enhance performance of renewable energy systems, such as solar, be promptly and formally recognized and adopted by the CEC and PUC and embraced into current measurements to accurately reflect the impacts of conditions such as shade, debris, dust and the like. Such technologies will help ensure that consumers, both residential and commercial, are provided with optimally effective generation efficiency and help the state to meet its AB 32 goals.

TechNet also recommends that the Draft Plan do more to recognize and accelerate the emergence of new technologies like all-electric distributed generation ("DG") technologies – not just traditional renewables and combined heat and power systems ("CHP") – to help meet its GHG reduction goals. For example, new breeds of highly efficient fuel cells can convert a wide range of fuels into clean electricity with very few carbon emissions and

[5] Id., p. 2-9

virtually no nitrogen oxide or sulfur dioxide emissions – but they do not fit the traditional renewable or CHP definitions, nor are they included in the Draft 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. However, these technologies would not be included in any of the Draft Plan 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 Draft Plan should promote the adoption of technology neutral DG, not just renewables and CHP.

One other "game-changing" technology must be the development of a smart grid that would allow the two-way flow of energy needed to promote the widespread deployment of distributed energy resources such as solar and fuel cells as well as electric vehicles and plug-in hybrids. As noted in the Draft Plan such a system "would allow distributed generation to become mainstream"[6] and allow consumers to recognize true energy costs and respond to price signals.

Improve Energy Efficiency. According to McKinsey & Co., investments in energy efficiency represent the most cost-effective way to reduce global emissions of GHGs , delivering average returns on investment of 17% and up to half of the abatement of global GHGs required to prevent major environmental damage.[7]

TechNet supports, for example, the Draft Plan's proposal to institute energy efficiency targets of at least 40,000 GWh and 1 billion therms in energy savings relative to business as usual projections for 2020, the most aggressive option contemplated in the Draft Plan.[8] TechNet believes that California, already a leader in energy efficiency, can realize significant additional gains across a number of sectors.

California should recognize that the state's technology industry is an important contributor to the state's efforts to improve energy efficiency. Information technologies can improve efficiency of data center cooling; improve intelligent sensing and control; build innovation around monitoring and measuring consumption and enable smart grids and smart metering. The technology industry is working hard to increase energy efficiency through improvements in its own chip, information technology and networking products. New chips can reduce energy use by up to 40%. And networks, virtualization software and broadband-based communications like Telepresence and Halo are enabling companies to realize substantial savings in areas from data center cooling to business travel. The state must include greening information technology networks in its energy efficiency programs and aggressively implement energy efficiency technologies among its own information technology and networking assets.

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[6] Draft Plan, p. C-57
[7] McKinsey Global Institute, *The Case for Investment in Energy Productivity*, February 2008, p. 8.
[8] Draft Plan, p. C-59

TechNet appreciates the Draft Plan's focus on improving building efficiency, as buildings represent the second largest contributor to GHG emissions. Improving energy efficiency of buildings represents among the most economic and productive strategies for reducing GHG emissions. TechNet therefore generally supports the Governor's recently-announced Green Buildings Initiative and requirements that state buildings achieve nationally-recognize sustainability standards. It is also important to recognize that significant energy savings and GHG emissions reductions can be achieved with additional incentives and policies aimed at retrofitting older buildings, including the use of networking to reduce consumption, starting with the use of energy efficiency audits.

TechNet also appreciates the Board's recognition of the role that new technologies and integrated design can play in delivery energy-efficient, high performance buildings at little or no additional cost.[9] For example, the use of new software tools allow architects, engineers and construction teams to collaborate at the start of the project to analyze building performance and incorporated optimized energy savings during the design phase, delivering unprecedented efficiency gains in both building construction and operation.

As indicated in the Draft Plan, the PUC and the CEC have established targets, including a mix of standards and goals, that all new residential buildings be zero-net energy by 2020 and that all new commercial buildings be zero net energy by 2030.[10] TechNet believes that investments in additional research and deployment will be critical to meeting these goals, and that public-private partnerships offer an especially promising strategy to move us forward. For example, the Siebel Foundation, in coordination with the University of California at Berkeley, Stanford University, and the McKinsey Company, has established the Energy Free Home Challenge, a $20 million competition for an affordable zero-net-energy home to drive building-sector innovation.

TechNet also believes that new financing methods can be instituted to remove the substantial up-front costs of energy efficiency and distributed energy systems, such as the creation of municipal assessment districts, which allow for the use of low-cost municipal financing for home- and business-owner energy efficiency and distributed energy investments, financed by voluntary property tax investments and ultimately, savings achieved through lower energy costs.

Accelerate Deployment of Clean Cars and Low-Carbon Fuels. The transportation sector accounts for approximately 40% of GHG emissions in California, the single largest contributing sector. While a market-based trading system represents an enormous advance in that it attaches a cost to carbon and provides long-term incentives to move to new technologies, TechNet recognizes that emissions reductions from the transportation sector resulting from a the cap-and-trade program alone are likely to be small both in absolute terms and per dollar of allowance value[11]. Therefore TechNet supports

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[9] Id., p. C-65
[10] Id., p. C62
[11] Market Advisory Committee, *Recommendations for Designing a Greenhouse Cap-and-Trade System for California,* June 30, 2007, p. 36

additional measures such as the adoption of the Low Carbon Fuel Standard and the Pavley Clean Car Standards.

TechNet also urges the Board to review potential strengthening of the California's zero-emission vehicle ("ZEV") program, which has played an important role in moving us forward on technologies needed to achieve significant reductions in criteria air pollutants. The growing recognition of the dangers of carbon emissions to the global environment has made the case for ZEVs even more compelling. As indicated by the recent ETAAC calling for "the virtual elimination of all GHG emissions from the state's energy infrastructure,"[12] the need for implementation of a robust ZEV program has increased. The Board should recognize the potential of this program to spur the deployment of new technologies that can contribute significantly to achievement of AB 32 goals and adopt standards that promote the deployment of next generation zero-emission or very-low emission transportation technologies.

TechNet also believes that additional incentives are needed to boost the use of ultra-low carbon biofuels, beyond those that might qualify for the low-carbon fuel standard. Currently the federal government provides a $.51 per gallon subsidy for ethanol. This policy has existed for years and provides a subsidy regardless of whether carbon emissions are significantly reduced. TechNet recommends that the state target incentives for the sale of advanced biofuels (those that reduce GHG emissions per mile by 40%-50% compared to conventional gasoline) providing a per-gallon incentives with a declining subsidy rate as volume increases, potentially funded through a mechanism such as the sale of auctioned allowances under a cap and trade system.

Clean Energy Technology Deployment. The scope of AB 32 represents an unprecedented challenge for the State, and achievement of the Plan's objectives will require aggressive action by both the Board and other California agencies to promote the deployment of clean energy technologies and the use of technologies to reduce consumption and emissions. As the ETAAC noted, however, the "absence of funding for project demonstrations is a significant impediment to the maturation of new technologies.[13]" TechNet believes that the State of California must pursue three strategies to promote the rollout of new technologies and innovative uses of technology in order to contribute significantly to the state's GHG reduction objectives.

First, the State must use its own procurement and investment power to promote the rollout of clean energy technologies and the use of technologies to reduce consumption and emissions. Partnering with private entities, public entities can act as "anchor tenants" for demonstration projects, giving priority to adoption of products having the highest likelihood of making major contributions to climate change mitigation.

Second, TechNet supports increased state and federal support for energy research and deployment. For example, the Governor last year signed AB 118, supported by TechNet,

[12] ETAAC Report, p. 1-1
[13] Id., p. 2-11

to increase certain transportation-related fees to provide funding for clean energy investments. TechNet supports the recommendations of the ETAAC to consider establishing a vehicle or vehicles to support demonstration finance of emerging technologies.[14] TechNet believes it is critical that the state research and development credit should be enhanced or maintained.

Finally, the State should institute support for public and private sector research partnerships, establishing a matching fund program to enable the state's public universities to better compete for federal and private energy research dollars. TechNet observes, for example, that state support enabled the University of California, Berkeley to win as BP's $500 million bio-fuels research investment, a development that will keep the Bay Area at the forefront of renewable energy research.

Reducing Emissions of non-C02 GHG emissions. TechNet echoes the comments submitted by the Semiconductor Industry Association ("SIA") expressing concerns regarding the Board's July 18 "Proposed Performance Standards for Semiconductors and Related Devices", which outlines a preliminary concept for a performance standard covering semiconductor emissions of perfluorinated compounds ("PFC"s). We appreciate the Board's revisions to the original July 18 proposal, which reduce the overall cost of the intended standard. However, the basis for the newest proposal is still unclear and we urge the Board to provide greater transparency to industry concerning the data upon which the proposed standard is based and work with the industry to ensure that the final proposal is cost-effective.

Spurring California Green-Collar Job Creation. Finally, California should take the unprecedented opportunity represented by AB 32, to create new jobs and entire new industries here, and ensure that California realizes the full benefits of its environmental leadership. States like Massachusetts, Washington, Oregon, New Mexico and New York are moving aggressively to promote clean tech manufacturing. If California takes its leadership for granted, we may simply find that our demand for clean technology merely creates job growth elsewhere.

While many states provide incentives to attract clean tech investment, California *reduces* the income tax burden on companies who pursue expansion out of state and *increases* it on those who hire and expand in-state. California's imposition of a sales tax on manufacturing equipment installed for in-state use makes capital-intensive expansion here significantly more expensive than almost any other state.

Further, Massachusetts, Washington, Oregon, New York, Arizona, Pennsylvania, Connecticut, Texas, and others all offer tax and other incentives more favorable to investment to promote local clean technology job growth and the adoption of technologies developed and/or manufactured in those states. California is in danger of being left behind.

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[14] Id.

For example, Oregon, which does not have a state sales tax, recently approved legislation providing a 50% income tax credit up to $20 million, paid at 10% over 5 years, for the construction of facilities to manufacture renewable energy systems and components in state. California provides no comparable investment credit and subjects new manufacturing equipment to a sales tax that generally exceeds eight percent (8%). So a company contemplating a $40 million capital investment faces a final net projected cost for that facility of approximately $20+ million in Oregon compared to $43 million in California.

California must update its fiscal policies to remove the disincentive in the state's current corporation income tax apportionment policy that arises when a company invests in physical plant and job growth in California. California should also exempt manufacturing equipment from the states sales tax, in order to better compete with the more than 40 states that have enacted such an exemption. Finally, California can benefit from a time-limited incentive program that promotes the growth of in-state clean technology manufacturing. The goal of such an incentive should be to get a new market started, rather than to create corporate dependence on an entitlement program.

An example of what California might emulate is the Massachusetts's Technology Collaborative, which offers Renewable Initiative Rebates similar to California's Self Generation Incentive Program. The difference is that Massachusetts offers an additional incentive (an extra $0.25/Wwatt for solar and an extra $2.00/watt for fuel cells) if Massachusetts-manufactured components are used. Similarly, Washington enacted Senate Bill 5101 in May 2005, establishing production incentives for individuals, businesses, or local governments that generate electricity from solar power, wind power or anaerobic digesters. The incentives range from $0.12/kWh - $0.54/kWh, depending on technology type and where equipment was manufactured.

TechNet appreciates the opportunity to comment. If you have questions or we can provide further information that would benefit the Board, please do not hesitate to contact me.

Best regards,

Jim Hawley
Senior Vice President & General Counsel