SolarCity

July 8, 2016

Chairman Mary Nichols
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: 2030 Target Scoping Plan Update Concept Paper

Dear Chairman Nichols,

SolarCity respectfully submits the following comments on the 2030 target scoping plan update concept paper.

Background

SolarCity is California's leading full service solar power provider for homeowners and businesses, a single source for engineering, design, financing, installation, monitoring and support. The company has more than 5,000 California employees based at more than 40 facilities around the state and had installed solar energy systems for more than 260,000 customers nationwide as of March 31, 2016.

In addition to rooftop solar, SolarCity develops and deploys other non-solar distributed energy resources (DER) for both residential and commercial applications. Specifically, SolarCity offers smart thermostats and battery energy storage systems to help customers manage their energy use. Accordingly, SolarCity has a strong interest in deploying technologies that help reduce the state's greenhouse gas (GHG) emissions and meet its climate and clean energy goals.

Overall Comments

SolarCity commends the leadership of the California Air Resources Board (ARB) and staff in developing the 2030 target scoping plan update concept paper in a timely and efficient manner. The concept paper is a critical first step in moving California toward refining and developing the suite of policies needed to achieve the greenhouse gas emission (GHG) reduction target of 40% below 1990 levels by 2030. As the concept paper points out, California's strategic vision for achieving the 2030 target is based on the principle that economic prosperity and environmental sustainability can be achieved together.[1]

We generally support the high-level strategy outlined in the concept paper and agree that any scoping plan that is put in place to guide the state's policy direction over the next 15 years needs to be focused on an integrated system, flexibility, and promoting economic growth, among other items. At this point, SolarCity does not have a position on the four high-level concepts for achieving GHG reductions outlined in the paper, but we agree that climate change mitigation policies must be considered in the context of the sector's contribution to the state's total GHGs.[2]

While we recognize that the final 2030 target scoping plan update will likely address individual sector policies more in depth (as was done in the previous scoping plan update), there are several additional policy items that should be taken into consideration when outlining the high level concepts for achieving GHG reductions.

[1] 2030 Target Scoping Plan Update Concept Paper, p.8.
[2] *Id.* p.19.

SolarCity

These include:

1. 2019 and beyond title 24 building standards updates
2. Integrated Resource Planning (IRP) process
3. Regional grid impact
4. Distributed energy resources (DER) deployment

1. 2019 and Beyond - Title 24 Buildings Standards

The October 2015 workshop presentation on the scoping plan update indicated that the potential for electrification of building end uses, such as water heating, and the move toward Zero Net Energy (ZNE) for residential and nonresidential construction will be key components for the short, medium, and long term vision for meeting GHG targets.[3] In the concept paper within each of the four scenarios, however, there is limited reference to building standards in the context of ZNE. While reducing GHG emissions from existing buildings utilizing energy efficiency is important, it is equally important to recognize the need for on-site generation to achieve ZNE goals and the opportunity for bringing buildings up to code as building standards incorporate new renewables requirements.

In order to meet ZNE targets for buildings, there are also some inherent challenges the final scoping plan update should acknowledge and address. To achieve true ZNE status, many homes will need to utilize very large solar PV arrays. Doing so will result in significant energy being exported back onto the distribution grid for nearly every ZNE home or community. Although the grid can accommodate significantly more PV than what exists today, PV systems with large amounts of energy export will limit the PV capacity able to interconnect in the future.

As California moves toward high adoption of renewables and ZNE homes, the electric grid and energy use will need to adapt to accommodate intermittent renewable generation. This is done most efficiently and with least environmental impact if the PV systems and ZNE homes themselves are incentivized to adopt energy storage or load control technologies, including controllable electric water heaters that can act as energy storage devices.[4]

Ignoring the renewable integration challenges inherent in moving to ZNE homes and communities today would create a scenario where future installations are required to adopt these technologies in order to interconnect onto the transmission and distribution (T&D) system. Incentivizing this technology now anticipates future needs and will enable higher penetrations of distributed generation in the coming years. Properly valuing PV with energy storage and load control in the California Energy Commission's (CEC) Title 24 building code aligns with broader California energy policy goals and puts the state in a better position to reach ZNE and renewable portfolio standard (RPS) targets, and helps meet the challenges of high penetration of renewable energy on the T&D system. Therefore, the 2019 and beyond building standards updates provide a critical junction for California to be on track to meet its goals and targets.

---

[3] October 2015 ARB Presentation, Slide 26 and 32 available at http://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf

[4] "The Hidden Battery: Opportunities in Electric Water Heating," prepared for NRECA, NRDC and PLMA by The Brattle Group. January 2016. http://www.nreca.coop/wp-content/uploads/2016/02/The-Hidden-Battery-01-25-2016.pdf

SolarCity

2. Integrated Resource Planning (IRP) Process

The four concept scenarios each reference SB 350 as a critical component to meeting the 2030 target, specifically citing the RPS target and the doubling of energy efficiency goals. The third component of SB 350 that will have a direct impact on the GHG reduction target that should be acknowledged in more detail in the final scoping plan update is the IRP requirement for each load serving entity (LSE).[5] While the California Public Utilities Commission (CPUC) is in the early stages of outlining the IRP framework, it has the potential to move the state towards a cleaner, less expensive and more resilient electric grid that achieves California's ambitious climate goals in a cost-effective manner.

As previously noted by SolarCity, in order for the IRP to achieve its goal to defer or replace fossil generation and traditional grid investments, it should simultaneously evaluate needs of both the generation and distribution system so that ratepayers can achieve cost savings by utilizing distributed resources to provide multiple benefits.[6] This is certain to be complex and analytically challenging, yet the cost savings and efficiency gains from doing so are potentially enormous, and this IRP provides an important opportunity to move resource planning in that direction.

3. Regional Grid

During the October 2015 scoping plan workshop presentation, the electricity section briefly touched on the potential impact of a regional grid. Although the concept paper does not directly address the impact of regional grid through the potential expansion of the California Independent System Operator (ISO), it could have an impact on how the state moves toward the 2030 target and should be addressed in the final scoping plan update.
In particular, SolarCity believes additional GHG emissions could be attained if a regional ISO were to put in place measures necessary to fully implement Federal Energy Regulatory Commission (FERC) Order 1000, which requires consideration of non-transmission alternatives (NTAs) in regional transmission planning. Allowing entities in regional transmission planning to propose and be compensated for NTAs – such as energy efficiency, demand response and distributed generation – as solutions to transmission needs, ISO can achieve cost savings for ratepayers while at the same time promoting carbon-free resources that do not require additional use of wild lands or clearing of forested areas.

4. Deployment of Distributed Energy Resources (DERs)

While not outlined in detail in the concept paper, the speed of deployment of distributed energy resources is an underlying assumption for the four concept scenarios. It will be important for the final scoping plan to reference the numerous proceedings currently in progress at the CPUC that can impact the speed of deployment of DERs. In particular, the Distribution Resource Plans (DRP), the Integrated Distributed Energy Resources (IDER) proceeding looking at utility business model reform as well as the numerous rate design cases will influence future policy mechanisms that drive the adoption of DERs and can have a direct impact on meeting the 2030 GHG target.

Conclusion

In order for California to meet the 2030 GHG reduction target, a strong policy framework will need to be in place that provides flexibility, promotes economic growth, and creates an integrated system. The concept paper has at a high level identified many of the current and potential future policies that can help

[5] The October 2015 workshop presentation on the scoping plan references IRP in relation to SB 350 on slide 55.
[6] Joint Solar Parties' CPUC Comments, IRP Preliminary Scope, Mar. 21, 2016

SolarCity

meet the target. For the final scoping plan, we would also like to see additional reference and details in regards to ZNE and buildings standards, IRPs, the potential impact of a regional grid, and the future deployment of DERs.

SolarCity thanks the Air Resources Board for the opportunity to comment on the 2030 target scoping plan concept paper. We look forward to participating in the scoping plan update process going forward and helping California develop a policy framework that meets the 2030 GHG target.

Respectfully submitted,

Damon Franz
Director, Policy and Electricity Markets
SolarCity