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TNC Comments - August 3 IEPR Workshop

Additional submitted attachment is included below.

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To: California Energy Commission
Dockets Office, MS-4
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Date: August 19, 2015

Subject: Comments of The Nature Conservancy to the Integrated Energy Policy Report Commissioner Workshop on Landscape-Scale Environmental Evaluations for Energy Infrastructure Planning and the Strategic Transmission Investment Plan (August 3, 2015)

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The Nature Conservancy respectfully submits these comments to the California Energy Commission (CEC) in regards to the Integrated Energy Policy Report (IEPR) Commissioner Workshop on Landscape-Scale Environmental Evaluations for Energy Infrastructure Planning and the Strategic Transmission Investment Plan ("August 3 IEPR Workshop").

The Nature Conservancy continues to develop key ecological analyses to support the state of California's efforts to protect natural and working lands while supporting the timely development of renewable energy resources in California. In particular, we strive to provide science that will inform how the state can plan to achieve climate, renewable energy, and land protection commitments. Integrated planning to achieve multiple policy goals, at reasonable costs, is critical for California – our economy, our communities and the environment.

Landscape-scale planning

The August 3 IEPR Workshop posed the following discussion question - "*Various landscape-scale planning efforts are underway throughout California and the West, although sometimes for different purposes. What are the benefits of this kind of planning and how can it be used to help meet State and local renewable energy, greenhouse gas, planning and environmental policy goals?*"

The Nature Conservancy strongly supports landscape-scale planning for renewable energy and conservation. One benefit of landscape-scale planning is that allows for implementation of the mitigation hierarchy, which is the greatest opportunity for avoiding

the adverse impacts of energy. Incorporating the mitigation hierarchy into the energy planning, ensures that: 1) facilities are first sited to *avoid* impacting natural systems; 2) technology choices, facility operating protocols and modifications to project footprint are made to further *minimize* impacts; 3) *restoration* of impacts occurs when technically feasible, and 4) effective off-site conservation measures are undertaken to *mitigate* for (or offset) remaining impacts.

Another benefit of landscape-scale planning is that it can help in meeting State and local renewable energy, greenhouse gas, planning and environmental policy goals. To achieve multiple goals, planning efforts aimed at greenhouse gas emission reduction in the electricity sector must be comprehensive and integrate multiple policies; to be efficient these planning efforts must include the principle of minimizing siting conflicts – generation and transmission. Incorporating landscape-scale planning into energy planning can help focus attention and capacity on the areas that likely to have lower impact to natural resources – essential to efficiently achieving multiple goals.

Landscape-scale planning has the additional benefit of reducing mitigation costs and delays associated with renewable energy development. By siting renewable energy facilities in low-impact and low-conflict areas, these facilities are permitted, built and operational more quickly, facilitating the transition to higher penetrations of renewable energy. Moving to a clean energy future more quickly may significantly reduce the impacts of climate change. Conversely, the cumulative effect of developers proposing to site renewable energy facilities in ecologically sensitive areas may result in increased mitigation costs and significant delays in achieving renewable energy goals and greenhouse gas emission reductions in the electricity sector. Siting well is one of the most effective ways of streamlining development of renewable energy power plants.

Modeling land use and energy scenarios simultaneously

We are pleased to see the State is involved in a number of analytical efforts to guide thinking around how to achieve California's climate commitments. However, there has been a critical gap in these analytical efforts, as none have addressed one of the most important issues in future renewable generation resource development – land use – and specifically how to plan to avoid and minimize siting conflicts to position the state to achieve renewable energy and greenhouse gas emission reduction efforts most efficiently, while protecting wildlife, natural and working lands. What has been missing is an analytical framework that includes both site suitability and optimal project selection that can show how the state can achieve renewable energy and land conservation goals in a cost-effective manner.

To address this critical gap in planning for California's energy future, The Nature Conservancy retained Energy + Environmental Economics (E3) to develop an analytical

approach to analyzing the land, conservation, water, and electricity cost impacts of environmentally constrained generation portfolios to achieve 2030 renewable energy scenarios.

The Optimal Renewable energy Build-out (ORB) model was developed to generate input data for the state's Renewable Portfolio Standard (RPS) Calculator Version 6.0 that reflects the renewable energy potential under various environmental constraints and to examine the land, conservation, water, and electricity cost impacts of the resulting environmentally constrained generation portfolios. We found that incorporating environmental information and imposing environmental exclusions in energy planning achieves lower conservation impacts and results in development of more fragmented land areas. In all but one scenario evaluated, avoiding sensitive environmental areas in the siting of future renewable energy projects increased electricity costs very modestly – 2% or less – over the RPS Calculator Version 6.0 base case.

The full study, *Integrating Land Conservation and Renewable Energy Goals in California: A Study of Costs and Impacts Using the Optimal Renewable Energy Build-Out (ORB) model*, can be downloaded here: http://scienceforconservation.org/downloads/ORB_report

Regional Coordination

We recognize the growing discussion that California's electricity sector operates in a market that extends beyond our borders, including the potential for great regional coordination on transfers between regions and more frequent scheduling. This can present opportunities and challenges.

The ORB model study evaluated several 2030 renewable energy build-out scenarios including 50% in-state and 50% generation from a combination of in-state and out-of-state sources (i.e., Western Electricity Coordinating Council (WECC)-wide). The study found that at very high renewable energy penetration that is limited to in-state development, cost effectiveness decreases substantially under the highest level of environmental constraint due to the over-reliance on solar technologies. This additional cost is removed once the in-state constraint is lifted. The data indicate that minimizing both negative conservation impacts and electricity costs at very high renewable energy penetration will require California to utilize a combination of in-state and out-of-state renewable energy resources, since it is possible to achieve 50% renewable energy generation by 2030 in the WECC-wide scenario under the most stringent set of in-state environmental constraints while incurring only a 2% cost premium.

The state should continue to explore the increased coordination of integrated land use and energy planning between electricity balancing authorities within the WECC to better understand economic, reliability, conservation and land use implications of increased out

of state renewable investments. As the California electricity market increasingly looks beyond our borders, it will be important to ensure that out-of-state generating facilities are sited in ways that foster Californian's multiple values. California does not want to drive environmental degradation or the decline of species outside our borders.

Policy Recommendation

The Optimal Renewable Energy Build-Out model should be used by the state to understand the implications of various electricity and conservation scenarios on land, conservation, water, and electricity cost impacts. These data are an important compliment to understanding other implications such as grid reliability, economics and electricity balancing authority coordination requirements, especially because not considering this information could lead to additional mitigation or permitting costs and significant delays in achieving renewable energy goals and greenhouse gas emission reductions in the electricity sector. In fact, designing comprehensive electricity and environmental policy will require this kind of detailed examination of each of the costs and benefits, and should be undertaken as soon as possible. A spatially explicit, forward-looking land-energy model such as ORB can anticipate the challenges and opportunities of electricity planning under multiple land-use constraints.

Conclusion

The Nature Conservancy appreciates the opportunity to comment on the August 3 IEPR Workshop. The IEPR proceeding is an important forum for bringing together a diverse set of stakeholders to inform the discussion and analyses. We feel that the *2015 IEPR* is well timed to address these issues, as the California energy agencies explore how to implement the Governor's 2030 climate commitments, including protection of natural and working lands. We look forward to continued participation in the proceeding.

Sincerely,



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