Comments of the Natural Resources Defense Council (NRDC) on the Draft 2014 Integrated Energy Policy Report Update

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Introduction

The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer comments on the Draft 2014 Integrated Energy Policy Report Update (IEPR Update). NRDC is a non-profit membership organization with nearly 80,000 California members who have an interest in receiving affordable energy services while reducing the environmental impact of California's energy consumption. NRDC appreciates the ongoing effort of the California Energy Commission (the Commission) staff to address the numerous energy issues facing California. NRDC generally supports the draft 2014 IEPR Update and recommends that the Commission adopt the report with the following suggestions.

Discussion

CHAPTER 1 and CHAPTER 2

NRDC appreciates the opportunity to comment on the transport-related sections of the Commission's draft 2014 IEPR Update. We recognize the tremendous efforts and hard work of the Energy Commission's staff and management over the past year to tackle critical topics related to meeting the state's climate, air quality and energy goals. Throughout this process, the Commission has correctly identified the key role that transportation plays and the need to transform the sector in order to meet these goals. The IEPR is a critical document in assessing not only the current status, but also providing an assessment of where the state is heading and the critical gaps remaining in terms of reducing our overall transportation energy consumption, mitigating greenhouse gas emissions, meeting our air quality goals, and sufficiently investing in the critical vehicle and fuel technologies that will be needed.

We agree with the Commission's assessment that dramatic changes in the transportation system are necessary to meet the various policy goals. We encourage the Commission, working with the various state agencies, to provide a best assessment of whether California will meet or exceed near-term milestones, such as those in 2020, with enactment of the various policies. Many of these policies – despite some differences in overall objectives – are largely complementary overall. Implementation of greenhouse gas reduction policies (such as measures under AB32, California's Global Warming Solutions Act), are also working in complement with other state goals such as the petroleum reduction goals and help contribute to meeting air quality goals. While state agencies can continue efforts for further alignment of energy policies together with environmental goals, overall the transportation policies and efforts are increasingly complementary and reinforcing. Broadly, we support the Commission's efforts to:

- Support infrastructure development to increase public access and to target areas of greatest needs.
- Investment in a portfolio of strategies, with a caveat that market participants should be increasingly relied upon for near-term technology deployment and that the major focus should be on technologies that help meet mid- and longer term goals.
- Leverage limited funds to maximize effectiveness, such as how the Commission has been demonstrating with the ARFVTP (AB118) funds through federal, local, and private investments.
- Create alternative funding mechanisms that are appropriately tailored to the market and specific barriers. This can and should include pilot programs – including loan loss reserve and innovative financing mechanisms targeted for specific clean fuel and vehicle technologies, such as electric vehicle infrastructure. We recognize that the needs – as demonstrated by ARFVTP and elsewhere – greatly exceed the funding amounts, making it paramount for the Commission to leverage state investments.

CHAPTER 3: Advancing Statewide Plug-In Electric Vehicle Infrastructure

We thank the Commission for their long-standing support of electric vehicle and infrastructure deployment. The Commission's work along these lines has been critical to the state exceeding 100,000 sales for plug-in electric vehicles ("PEVs") – a historic milestone. While sales of PEVs have indeed been rapidly growing, more is needed to expand the market. NRDC

has been working with our partners as part of the Charge Ahead California Campaign to grow the market for electric cars, trucks and buses and expand access to disadvantaged and impacted communities to clean transportation. We support the Commission's efforts to:

- Target infrastructure to residents living in multi-unit dwellings (MUDs) is now a well-known issue. We support the Commission's efforts to help fill this critical gap as part of the next phase of its investments and look forward to working with the agency to effectively deploy and leverage these investments.
- Collect data and conduct market assessments on the needs around PEV infrastructure, working with critical partners where studies are already underway, and identifying gaps in the knowledge base to support further research.
- Continued leadership on the PEV Collaborative. As a critical member of the Collaborative, the Commission has provided critical support and information to bring major stakeholder groups together working on expanding the PEV market and meeting the Governor's 1.5 million electric-drive vehicle goal by 2025.

CHAPTER 8: Integrating Environmental Information in Renewable Energy Planning Processes

NRDC appreciates the opportunity to help realign transmission planning to support California's efforts to meet our AB32 greenhouse gas emission targets as efficiently as possible. We believe meeting these goals will require the state and its agencies to consider a greater variety of goals and objectives than the current portfolio-based approach which artificially delays or even prevents the development of high-value renewable energy resource areas in California, in particular the San Joaquin Valley. The current approach does not best utilize the state's planning capacities to most efficiently meet the state's financial, environmental, and social goals. NRDC believes that bundling together projects into portfolios for transmission planning is inadequate for long term planning needed to meet state goals in the least environmentally harmful ways. Realignment in how California plans and executes generation and transmission planning is needed.

A. NRDC recommends a master planning approach that identifies transmission lines with multiple values.

I. MISO Multi-Value Lines

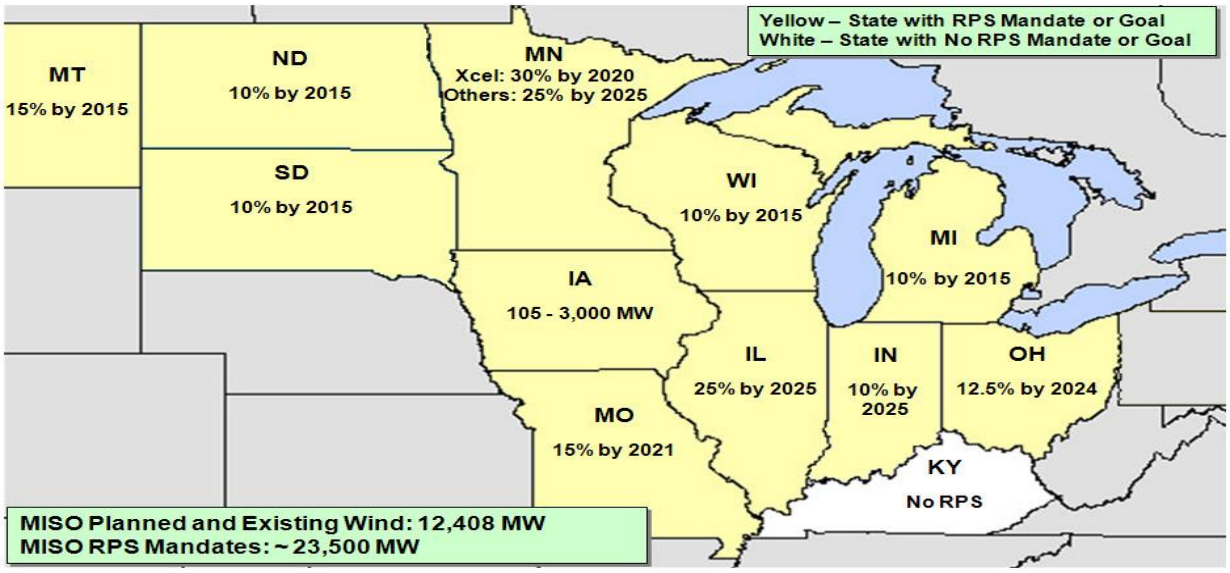
- Meet state and national policy objectives such as reducing greenhouse gas emissions, reducing air pollution, supporting economic development in targeted communities
- Serve present and planned future renewable energy zones
- Can be expanded (adding a circuit, reconductoring or increasing the transfer capacity (ATC) with more efficient conductors, etc.) within existing corridors to facilitate rapid and strategic expansion
- Minimize land use, cultural and wildlife conflicts
- Provide access to constrained grid assets that help optimize grid operations, such as pumped hydroelectricity storage
- Provide access to regional renewable resources with uncorrelated variability to California resources (geographic diversity as an integration strategy)
- Support regional grid coordination and sharing of reserves
- Enhance system reliability
- Improve power flows
- More efficiently utilize the existing transmission system and avoids environmental conflicts.

This approach is modeled after one utilized by the Mid-Continent Independent System Operator to identify and build transmission with multiple values to more easily integrate renewable (mainly wind) energy into their footprint. Our recommendation also builds on the original goals of the Renewable Energy Transmission Initiative (RETI) which sought to "meet California's renewable energy goals most cost effectively, with the least impact to the environment, in a reliable manner."

The rationale for the MISO approach is described as:

Public policy decisions over the last decade have driven changes in how the transmission system is planned. The recent adoption of Renewable Portfolio Standards (RPS) and clean energy goals across the MISO footprint have driven the need for a

more regional and robust transmission system to deliver renewable resources from often remote renewable energy generators to load centers.[1]



MISO states with RPS mandates and goals, Multi Value Project, Portfolio Results and Analyses, MISO, January 10, 2012

The MISO approach identified lines that met financial, policy, and system reliability needs, identified as:

- Provide benefits in excess of its costs under all scenarios studied, with its benefit to cost ratio ranging from 1.8 to 3.0.
- Maintain system reliability by resolving reliability violations on approximately 650 elements for more than 6,700 system conditions and mitigating 31 system instability conditions.
- Enable 41 million MWh of wind energy per year to meet renewable energy mandates and goals.
- Provide an average annual value of $1,279 million over the first 40 years of service, at an average annual revenue requirement of $624 million.
- Support a variety of generation policies by using a set of energy zones which support wind, natural gas and other fuel sources.

Metrics similar to these but based upon California's specific needs could provide a foundation for a multi-value master planned approach in this state.

[1] See: Multi Value Project, Portfolio Results and Analyses, MISO, January 10, 2012 for a full description of the drivers, proposed lines and related analysis.

A master planning approach would consider values beyond the purely electrical system needs traditionally utilized by the CPUC to justify the need for new transmission. These help identify and prioritize present and future competitive renewable energy zones for transmission service and could include such things as:

- Economic development and job creation in financially distressed part of the state
- Facilitating renewable energy development on chemically altered and marginally productive agricultural lands being retired from cropping, such as those in the west side of the Westlands Water District
- Concentrating renewable energy development on the least environmentally sensitive lands
- Reducing water consumption by retiring irrigated, chemically altered, and marginally productive agricultural lands.
- Planning for the long term conservation of other prime farmlands
- Avoiding impacts to and preserving cultural resources

Master planning takes a longer term view than is characteristic for transmission planning, where three to five year looks-forward are more the norm in California. However, California's climate goals (80% reduction in GHG emissions from 1990 levels by 2050), which will require a fundamental restructuring of the electrical sector, require flexible planning for more than 30 years into the future. While it is impossible to predict with certainty what electricity generation and load should look like in 2050, by planning to serve present and future renewable energy zones, new transmission lines or upgrades can be scaled to meet California's zero emission needs under a variety of plausible futures. In so doing we can design a transmission system that is not just least cost, but also *best fit*, in the sense that the developments made could be used to support expansions in renewable power generation *where* we want it (least environmentally sensitive locations), *when* we need it, without having to identify, permit and construct duplicative or unnecessary rights of ways and transmission lines.

II. RETI 2.0

RETI's original concept was to identify development areas called Competitive Renewable Energy Zones (CREZ) that had both excellent resource values and very low environmental impacts to both attract development and to ease and accelerate the permitting for siting and development timelines respectively. Once zones were identified, transmission

upgrades and additions were identified to serve the zones. Many of these improvements are under development or active consideration today, though official plans of service for the CREZ were never produced. This was the first planning initiative to ever place economic and environmental objectives on equivalent planes.

RETI was a thoughtful approach to the orderly development of the generation needed to meet California's Renewable Portfolio Standard goals. The RETI approach remains valid and could be a useful model for a master planning approach for renewable energy and transmission development into the future. The CREZ approach was the model for the establishment of the BLM solar energy zones across six states, the BLM Arizona Restoration Design Energy Project, and the development area identification process in the federal-state Desert Renewable Energy Conservation Plan (DRECP). The Western Governors Association led a renewable energy zoning exercise that identified renewable generation "hubs" for the purpose of evaluating regional transmission needs. WECC uses a similar geospatial analysis to inform transmission planning and routing.[2]

NRDC believes applying this zoning-transmission-planning paradigm to identify future needs would make more efficient, cost effective and environmentally acceptable renewable energy development available in a timely way, to incentivize it in the right places and do so at the lowest cost to California consumers.

III. Master Planning Zones and Transmission

Using geospatial information in a RETI-like analysis to identify additional CREZ, especially in the San Joaquin Valley on retired agricultural land, and then performing CEQA and NEPA analysis and permitting on these lands could greatly enhance the original RETI concept. Areas which have already been subject to environmental review, and for which mitigation burdens were known in advance (if required at all) would be highly desirable for developers. The greater certainty that projects could be quickly brought on line, and that transmission would be made available in a timely way should greatly enhance access to low cost project financing. This in turn enables generators to bid into RFOs at lower costs. By planning transmission such that its

[2] For information on the geospatial land classifications datasets in the EDTF tool go to http://www.wecc.biz/committees/BOD/TEPPC/Pages/EDTF_Datasets.aspx. These resemble RETI mapping results.

transfer capacity can be expanded, these future CREZ can be served at least cost to consumers and reduce power costs for procuring entities.

IV. Master Planning Key Questions

1. Is the proposed CREZ on chemically altered, marginally productive farmland (or other brownfield redevelopable site) scheduled for retirement?
2. Is the proposed CREZ located along a logical transmission corridor or existing ROW?
3. Can the proposed CREZ produce a significant amount of renewable generation?
4. Has the proposed CREZ been identified by the Nature Conservancy's *Western San Joaquin Valley Least Conflict Solar Energy Assessment* as an area of low environmental conflict?[3]
5. Does this location offer the potential for in-state or regional geographic diversity in the generation mix?
6. Will transmission to this CREZ improve power flows on the grid enhancing regional (WECC-wide) coordination opportunities?
7. If new transmission is needed, what voltage rating should be required to meet the expected renewable generation potential for this CREZ?
8. Will development in this CREZ facilitate associated state goals (such as economic development and job creation)?
9. Would transmission for this CREZ provide better utilization of energy storage or other integration resources?
10. Would transmission for this CREZ reduce system congestion and/or provide additional reliability benefits?
11. Could transmission for this CREZ if expanded also serve a future CREZ?

B. NRDC recommends aligning agency planning processes to prioritize transmission to new and existing CREZ/DRECP/BLM solar zones.

NRDC believes that California transmission planning realignment should prioritize the planning and approval for transmission projects that meet multi-value tests and serve identified present and future CREZ, BLM solar zones, and DRECP resource areas. Focusing on transmission that serves broader system benefits and opens new high priority, low-conflict areas and which meet present and expected future greenhouse gas reduction and reliable electricity supply should be the method we use going forward. Aligning how the agencies coordinate to

[3] The Nature Conservancy has done a thorough habitat review of the San Joaquin Valley and this authoritative work can be used to guide suitability analyses for CREZ.

identify these CREZ and their transmission solutions should be a high priority. NRDC would prefer to see a more unified approach rather than the planning hand-offs we currently see in the project portfolio approach we now use. We greatly appreciate the increased level of coordination between the CEC, CPUC, and CAISO we have seen in recent years. We also believe this can be improved upon and simplified by using the master planning, multi-value transmission approval process we have outlined above.

Conclusion

NRDC appreciates the opportunity to comment on the draft 2014 IEPR Update and thanks the Commission for its work on this report. NRDC recommends that the Commission incorporate the aforementioned recommendations into the final 2014 IEPR Update.