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12-IEP-1D

DATE MAY 08 2012

RECD. JUN 01 2012



Comments of NRDC and CEERT

Subject: Central California Study of 2012-2013 Transmission Study Plan

Submitted by	Company	Date Submitted
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NRDC is a national, non-profit organization of scientists, lawyers, and environmental specialists, dedicated to protecting public health and the environment. Founded in 1970, NRDC serves more than one million members, supporters and environmental activists with offices in New York, Washington, Los Angeles, San Francisco, Chicago and Beijing.

NRDC has a long history of advocacy promoting the increased use of energy efficiency and renewable energy sources to meet America's energy needs both at the national level and in various states, including California.

CEERT represents renewable energy developers and major environmental organizations and advocates for effective renewable energy and energy efficiency policies within California, the West and at the national level.

Study Objective

The assessment will monitor the transmission system in the area under a variety of scenarios and the studies will include, but not limited to the following:

- North of Los Banos north-to-south transfer capability
- Path 15 south-to-north transfer capability
- Path 26 transfer capability
- Fresno area import/export capability
- San Joaquin area transmission reinforcement requirements,
- Fresno area local capacity requirements, and
- Economic analysis for congestion relief and renewable integration
- Operational flexibility and potential economic benefit of Helms (pump and generation)

General comment:

We commend the CAISO for moving to address deficiencies in the CPUC portfolio-driven transmission planning effort by conducting a Central Valley Study. We believe the portfolios upon which the entire transmission plan is built underemphasize the true potential of Central Valley renewable generation and inadequately account for system benefits transmission in the Central Valley would provide.

Unfortunately this misperception was carried further in the assumptions presented at the stakeholder meeting on the Central Valley Plan. Conducting this study only using CPUC portfolios will result in underestimating or missing altogether many of the benefits the study is intended to identify and incorporate in planning. These include economic, reliability, operational flexibility, renewable integration, carbon reduction, land use and access to energy storage benefits. Therefore we are recommending the study take a “portfolio plus” approach in which a more reasonable scale of development is assumed, and system benefits realized are proportionate to that level of development are identified.

We believe there are also significant state and federal policy requirements, goals and objectives that could be achieved by expanding transmission capacity in the Central Valley, including: guiding both generation and transmission development to drainage and physically impaired farmland and directing economic development activities to economically stricken parts of the state hard-hit by the current recession. CAISO’s move toward recognizing policy requirements in transmission planning is a welcome improvement. We further recommend accomplishing this by utilizing a multi-value approach such as that employed by the Midwest ISO MISO. MISO describes these multi-value projects (MVPs) as: *“MVPs are one or more network upgrades that, when considered as part of a portfolio which provides widespread regional benefits, respond to documented public policy requirements and/or provide multiple*

benefits such as reliability and economic value.”¹ (See figures 2 and 3, below for more on MISO cost-benefit and tariff language)

Specific criticisms and comments:

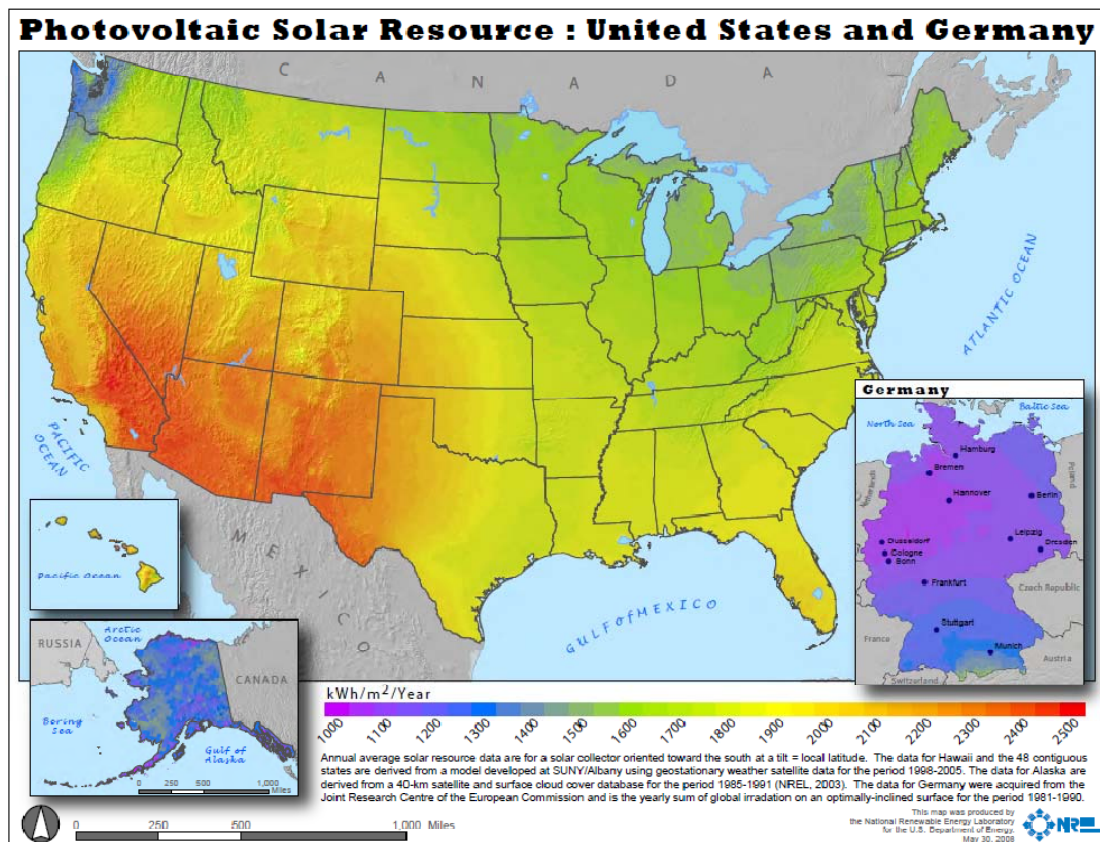
1. Portfolios are flawed – We believe there are fundamental flaws in portfolios assuming that only 70 MW of generation can be expected from the Central Valley (in all four study cases). In the proposed Westlands CREZ alone commercial interest, as evidenced by interconnection requests and offers to utilities was over 1 GW in the 2011 IOU RFO's with a build out capacity on approximately 33,000 acres on drainage impaired farmland scheduled for retirement of an estimated 3-5 GW. The existing portfolios rely on estimates of generation under RPS contract with utilities. But without transmission upgrades, Central Valley generation may never be offered for contract. Thus a “chicken and egg” situation exists that prevents development of one of the most promising RETI zones, and other similarly situated project areas in the Central Valley: no transmission, little generation investment; little generation investment, no transmission.
2. Benefits unrecognized or undervalued:
 - a. One of the system benefits unrecognized by the portfolios is that new transmission in the Valley, properly located in existing corridors, disturbed lands or on retiring agricultural land, provides a well-timed hedge against congestion. There is an estimated 600 – 1000 MW of existing system capacity in the Central Valley. This is likely to be quickly overwhelmed by planned generation of all scales. As the economy recovers there will be a considerable need for new transmission capacity in this part of California. Given the lead time for transmission development, planning for, approving and scaling correctly new upgrades should be a high priority, not just for new renewable capacity, but for reliability and congestion avoidance.
 - b. Another unrecognized benefit of Central Valley transmission expansion is that new transmission would strengthen backbone needed for balancing energy both intrastate and import-export opportunities interstate. The latter consideration is especially relevant in light of FERC Order 1000 compliance which California will be engaged in. Both public and private utilities will be engaging in regional and *inter-regional* planning under Order 1000. This will create opportunities for California to share balancing resources and reserves with neighboring states, as well as to participate more fully in regional market opportunities.
 - c. Opening Central Valley disturbed lands to generation has the further benefit of adding needed geographic diversity to the state's generation mix, aiding grid integration and operation and reducing costs. Improved forecasting techniques combined with a mix of generation technologies spread geographically can provide uncorrelated variability to the system, reducing balancing and reserve needs. Increased diversity is possible and

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M. Rauch, Presentation to MISO, Technical Studies Task Force, February Meeting on 2011 Candidate MVP Portfolio

desirable in California, where much of the renewable fleet is clustered in the East Mojave.

- d. One of the most important benefits of enhanced transmission capacity in the Central Valley is increased potential to utilize the Helms pumped storage facility for regulation and balancing services. We are gratified that this will be a key element of the proposed study, but are concerned that the analysis may be skewed (and benefits under represented) by portfolio assumptions that suggest an unrealistically low amount of energy expected from Central Valley renewable resources.
- e. Non-electric benefits also come into play. Hundreds of thousands of acres of Westlands Water District lands must be retired which have strong solar generation potential. Though solar radiation in the Central Valley is not equivalent to the Direct Normal Insolation (DNI) recorded at desert locations, horizontal radiation in the Central Valley combined with excellent DNI make the Valley one of the finest photovoltaic energy zones in the world. As the map below indicates, Valley photovoltaic radiation far surpasses that of Germany, a world leader in photovoltaic installations. The worst California resource is better than the finest German resource, which is roughly comparable to Alaska's solar resource. Access to this world-class solar resource means that retiring contaminated agricultural lands from production enables California to transition these lands to a better, higher purpose, namely renewable energy production.



- f. As mentioned above an enormous amount of agricultural lands are in the process of being retired from production in the Central Valley. This region has been characterized as the Appalachia of the West in terms of its economic suffering and under-employment. *Unemployment in many Valley counties far exceeds state and national averages. According to the State Employment Development Department, unemployment in Stanislaus (17.4%) and San Joaquin Counties (16.7%) for March 2012 hovered near 17%. As previously famed lands come out of production, unemployment in the Central Valley has hit astronomical levels, creating an economic drain on the entire state. Relieving this distress is a high state priority. Because of the enormous potential for large scale generation to create both construction and O&M jobs, energy development (and enabling transmission) should be prioritized. We realize this type of factor is not usually a part of CAISO or CPUC analyses and we are gratified to see economic considerations added to the list of issues in the proposed Central Valley study. Looking beyond simply avoided congestion costs should be a part of this work.*
 - g. One important additional consideration has to do with leveraging federal resources for transmission investments. The Western Area Power Administration (Western) has considerable ability to fund transmission development under federal law (ARRA). This authority favors renewable energy development and could be utilized to augment other funds to build transmission. Moreover, Western owns transmission infrastructure in the Central Valley that could become part of a more integrated and operationally better coordinated transmission system. Recent direction to the Power Marketing Authorities by Secretary Chu emphasized regional transmission coordination. The best if not only opportunity to avail state consumers of these financial and operational co-benefits with Western exists in the Central Valley. Thus both financial and operational benefits could be realized if Central Valley transmission was prioritized by CAISO.
3. Conclusion: We believe that a “Portfolio Plus” approach is needed to cover reasonably expected futures. By “Portfolio Plus” we mean considering factors – especially other state goals and priorities – beyond those included in the portfolios provided by the CPUC to prioritize transmission development in California. This approach – similar to one used by MISO’s MVP portfolio – has demonstrated that real benefits can be expected for electricity customers system-wide (see figure 2). We are not suggesting CAISO ignore CPUC portfolios and applaud the efforts at enhanced coordination between the two entities. But looking beyond the portfolios provided by the CPUC will provide the best value to California energy consumers and customers. Nothing prevents CAISO from doing this. On the contrary, as evidenced by FERC Order 1000, and MISO’s approach with MVPs, considering policy goals of states is becoming an expectation for both regional and inter-regional transmission planning, cost allocation and development.

NRDC and CEERT thank you for this opportunity to comment on the proposed Central Valley Study.

Figure 2: MISO Portfolio benefits spread

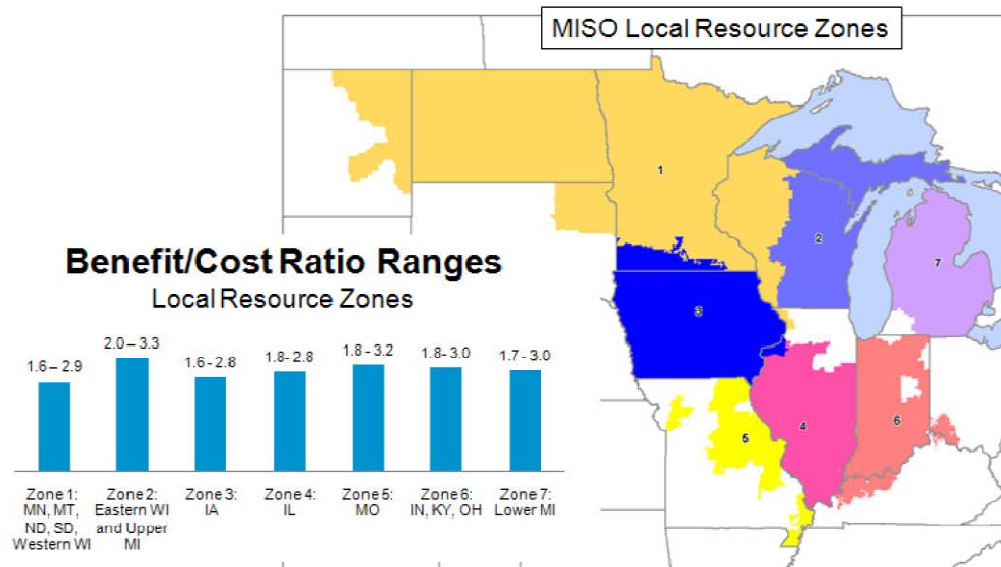


Figure 1.5: Recommended MVP portfolio benefits spread

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Figure 3: MISO MVP Tariff Criteria ³

Criterion 1

A Multi Value Project must be developed through the transmission expansion planning process to enable the transmission system to deliver energy reliably and economically in support of documented energy policy mandates or laws enacted or adopted through state or federal legislation or regulatory requirement. These laws must directly or indirectly govern the minimum or maximum amount of energy that can be generated. The MVP must be shown to enable the transmission system to deliver such energy in a manner that is more reliable and/or more economic than it otherwise would be without the transmission upgrade.

Criterion 2

A Multi Value Project must provide multiple types of economic value across multiple pricing zones with a Total MVP benefit to cost ratio of 1.0 or higher, where the total MVP benefit to cost ratio is described in Section II.C.7 of Attachment FF to the MISO Tariff. The reduction of production costs and the associated reduction of LMPs from a transmission congestion relief project are not additive and are considered a single type of economic value.

Criterion 3

A Multi Value Project must address at least one transmission issue associated with a projected violation of a NERC or Regional Entity standard and at least one economic based transmission issue that provides economic value across multiple pricing zones. The project must generate total financially quantifiable benefits, including quantifiable reliability benefits, in excess of the total project costs based on the definition of financial benefits and Project Costs provided in Section II.C.7 of Attachment FF.

² "Multi-Value Project Portfolio, Results and Analysis," MISO, Multi Value Project Report, January 2012

³ *Ibid.*