

California Public Utilities Commission/California Energy Commission

Transmission Planning Process

Clean Coalition comments on Dec. 19th Joint CPUC/CEC TPP workshop

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I. Introduction

The Clean Coalition is a California-based nonprofit organization whose mission is to accelerate the transition to local energy systems through innovative policies and programs that deliver cost-effective renewable energy, strengthen local economies, foster environmental sustainability, and enhance energy security. To achieve this mission, the Clean Coalition promotes proven best practices, including the vigorous expansion of Wholesale Distributed Generation (WDG) connected to the distribution grid and serving local load. The Clean Coalition drives policy innovation to remove major barriers to the procurement, interconnection, and financing of WDG projects and supports complementary Intelligent Grid (IG) market solutions such as demand response, energy storage, forecasting, and communications. The Clean Coalition is active in numerous proceedings before the California Public Utilities Commission and other state and federal agencies throughout the United States in addition to work in the design and implementation of WDG and IG programs for local utilities and governments.

Per direction by Patrick Young, please note that our comments focus primarily on policy considerations that the CEC/CPUC should be examining in the TPP process and TPP portfolios as well as additional topics to discuss at future workshops.

The Clean Coalition is participating in the TPP primarily to highlight the role that Non-Transmission Alternatives (NTA) can play in reducing the long term cost and ratepayer impact of the State's transmission system, and to ensure that all established State goals, such as the RPS, 12 GW of Distributed Generation (DG) and GHG targets are met.

II. Summary of recommendations and discussion points

- The Clean Coalition supports the joint CEC/CPUC effort toward a coordinated and collaborative TPP process and we urge that this approach be continued in the future;
- The renewable portfolios included in the TPP should reflect the most current information in addition to both market and policy driven trends and projections to address the most pressing issues facing California and the State's transmission system;
- The CPUC/CEC should consider measures to enhance the effectiveness of the CEQA alternatives analysis discussed at the December 19th, 2012 workshop;
- Any/all future evaluations of non-transmission alternatives (NTAs) should not only focus on specific proposals or individual projects, but should consider the impact of aggregated disbursed capacity;
- We strongly recommend that programmatic non-transmission alternatives (NTAs) be evaluated in the TPP process, which includes DG+IG;
- The costs and benefits of localized NTA should be fully valued and their capabilities to address current and projected transmission constraints should be considered against the fully amortized cost of major capital investment in transmission, resulting in projected California ratepayer costs of \$80 Billion over the next 25 years under current practices;
- Inclusion of a High DG portfolio is a positive step in encouraging the use of higher levels of DG, as high penetration of DG (especially wholesale) reduces the need for future transmission investment;
- DG+IG as an NTA option would move California's energy grid infrastructure toward high penetrations of clean local energy consistent with ongoing State goals for increased levels of renewable energy technologies.

III. Discussion

The Clean Coalition strongly supports the movement toward integrated planning and the proactive approach of the TPP, and we commend the joint CEC/CPUC effort to synchronize the TPP process. We believe this provides the more coordinated approach to transmission planning and future resource planning desperately needed at the state level and as recognized in the CEC's Integrated Energy Planning Report (IEPR). This coordinated approach avoids duplicative or conflicting efforts across jurisdictions and enhances the availability of relevant and up-to-date information, which is a crucial aspect of this process. We urge both the CEC and CPUC to continue this joint effort going forward.

The Clean Coalition remains committed to ensuring that the renewable portfolios included in the TPP reflect current information available now, as well as reflect the most pressing issues facing California's transmission system (which includes discussion of transmission access charges (TAC) and avoided costs of transmission. This should reflect procurement plans and trends, noting in particular increasing distributed generation, and include risk adjusted uncommitted resources.

We understand and appreciate the importance of TPP, and especially the fact that TPP is a major factor in awarding PPAs, since projects that do not fit within planned transmission upgrades will have longer waits or not be reimbursed, driving commercial interest. This is in the best interest of the ratepayer and provides critical guidance to generation planning stakeholders and regulatory agencies. In addition we strongly recommend that programmatic non-transmission alternatives (NTAs) be evaluated in this process.

While individual NTA projects submitted to CAISO are considered, there is currently no mechanism for evaluation of programmatic NTAs, such as uncommitted energy efficiency, demand response, or distributed generation development. Not only should risk adjusted projected capacity be included in load scenarios, but serious consideration

and broad evaluation should be given to the relative cost of additional incentives or procurement in targeted locations that would provide a more cost effective alternative to additional transmission investment. To only consider specific NTA proposals submitted to CAISO is simply reactive, where proactive pursuit of cost effective alternatives is called for, especially where this is better aligned with the State's Loading Order. The TPP effectively directs generator development, but fails to similarly direct NTAs that would alleviate the need for as much additional transmission. A coordinated, streamlined and robust evaluation of all options is the direction that the CEC and CPUC should be pursuing in conjunction with the ISO.

CEQA and Nontransmission Alternatives

The CEQA alternatives analysis discussed at the December 19th, 2012 workshop is positive and while it provides good foundation, it should be cautiously noted there are few requirements and little oversight or enforcement of this provision. Even good faith efforts to present alternatives may merely present variations on a theme and fail to consider any fundamentally different approaches, especially NTAs. Disputes over the adequacy of an EIR are the leading cause of delay for many projects, and while the CPUC and CEC have no authority over the CEQA process, establishing stakeholder supported standards and guidelines for the type of alternatives to be considered can effectively reduce a primary cause for dispute.

As previously recommended, the Clean Coalition continues to urge that non-transmission alternatives (NTAs) should be included as standard practice in transmission planning. These NTAs include intelligent grid (IG) technologies such as wholesale DG, energy storage and demand response that can not only address load, provide capacity, and uphold grid reliability and resilience, but also promote cost effectiveness while supporting Loading Order, all of which should be of the utmost priority. The ISO is set to deliver the results of an analysis of its NTA proposal evaluation process that could prove useful in this process to examine the costs and

benefits; one of which could be less of a delay on CEQA challenges.

NTAs

In examining NTAs, the potential for cost effectiveness, and for rapid, targeted, and scalable or phased deployment are particular advantages to consider. In some cases, NTAs may face fewer obstacles than new transmission lines. An NTA may be less expensive than building new transmission and may be especially appealing in areas where transmission construction is more expensive and encounters more obstacles.¹ Any/all future evaluations of NTAs should not only focus on specific proposals or individual projects, but should consider the impact of aggregated disbursed capacity that would be expected to result from current incentives and procurement policies, or from programs targeted to address specific transmission constraints.

As mentioned in recent Clean Coalition TPP comments to the ISO, we reiterate that we have been ... “advocating a “DG + IG” (Distributed Generation and Intelligent Grid) solution for California and other jurisdictions.”² The DG + IG suite of solutions falls firmly within the FERC rubric of non-transmission alternatives. The technical means of achieving a DG + IG future are available now, with advanced inverters, high penetration of DG (both wholesale and retail), energy storage as well as other IG components, to meet all future energy, capacity and voltage and reactive power regulation needs.”

The costs and benefits of localized capabilities to address current and projected transmission constraints should be considered against the fully amortized cost of major capital investment in transmission. Included in such comparison should be the cost of maintaining the reserve capacity to meet reliability requirements related to the total loss

¹ *Updating the Electric Grid: An Introduction to Non-Transmission Alternatives for Policymakers*, US Department of Energy, September 2009, pg. 1

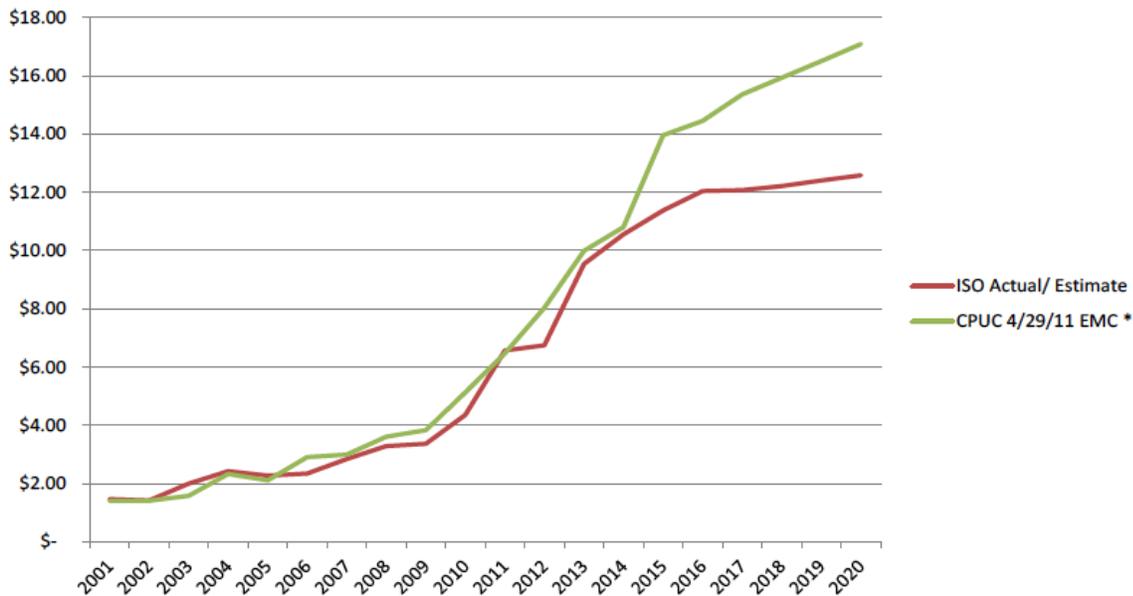
² *Clean Coalition Comments on TPP to the California ISO*, Tam Hunt, Kenneth Sahn White (authors), December 26th, 2012.

of one or more network or large generation facilities – critical infrastructure risks that are avoided with dispersed generation in the vicinity of load centers. NTAs should be considered in the context of long-term as well as short-term transmission planning.

Rising Transmission Costs

As seen in the following two charts, rising costs of transmission facilities are driving ever growing and increasing significant additions to retail electric rates, and these costs are primarily due to additions to the transmission system that only marginally increase its existing capacity. The high voltage transmission system costs are estimated by the CPUC to increase tenfold their 2001 levels by 2020, and the low voltage system represents a comparable additional cost to ratepayers.

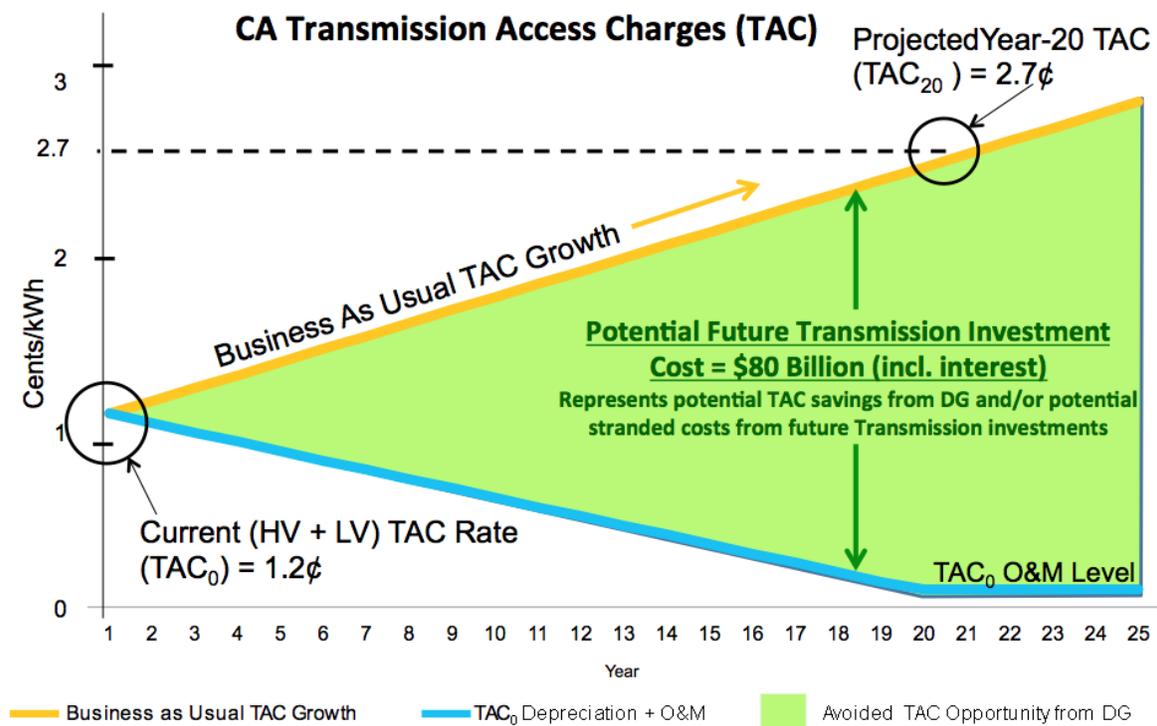
FIG 1: Historical and Projected High Voltage Transmission Access Charges



When current investment trends are projected forward, the full cost, including the authorized 11-12% ROI on slowly depreciating 40 year capital investments, reaches \$80 Billion over the next 25 years. These costs are rarely discussed and much of this

ratepayer impact could be more cost effectively redirected toward Non-Transmission Alternatives.

FIG 2: Potential Transmission Investment Savings



In addition, planned investment in transmission in the state of California will continue to rise in the state, which will cost the ratepayers billions of dollars in the continuing decades if transmission investment continues at status quo.³ This should be a major consideration in determining the future of transmission and in evaluating more cost effective NTAs, especially since the ratepayer is responsible for funding transmission

³ The Clean Coalition estimates that as of Q1 2012, approved transmission investments have already committed ratepayers to nearly \$40 Billion in payments over this period. The balance of future investment remains available for NTAs to reduce total ratepayer costs.

investments. The State's Loading Order and Energy Action Plan are essential factors in the consideration of transmission investment and non-transmission alternatives. Once large capital commitments are sunk into any one option, those existing facilities will influence the relative marginal cost of future alternatives. As the State pursues a long term transition to clean, sustainable, secure energy supplies, the role and value of resilient localized resources must be considered in both generation and intelligent grid capabilities, rather than continuing with increasingly costly conventional generation/transmission approaches.

IV. Specific Portfolio Comments

Commercial Interest

It is important to note that this portfolio is the result of prior procurement policy drivers rather than actual market interest, since projects will only be awarded PPAs based on which PPAs are offered and/or their project selection ranking criteria. The market responds to available opportunities. This point should be further highlighted and discussed in a future workshop or addressed in the portfolio in the near future.

Environmental

The environmental portfolio seems very similar to the High DG portfolio. While the Clean Coalition is strongly supportive of preference given to generation in environmentally preferred locations, the differences between this and the High DG portfolio (other than the inclusion of small PV near load) should also be further highlighted if potentially distinct outcomes are to be derived.

High DG

A major component within the NTA discussion is the consideration of high levels of DG, which the Clean Coalition commends. This inclusion of a High DG portfolio is a positive step in encouraging the use of higher levels of DG, as high penetration of DG (especially wholesale) eliminates the need for future transmission investment. DG has

several important and generally unappreciated benefits that have yet to be fully realized, as we have continuously advocated for in the 2012 LTPP at the CPUC (R. 12-03-014). These benefits can support both LCR concerns as well as NTA consideration. In addition, the evaluation of the locational value of DG should be a topic of exploration, as the potential locational value of DG is still generally unappreciated by regulatory agencies and utilities. The Clean Coalition applauds the announcement of a CPUC workshop later this month addressing locational value and encourages adopting of interim values at the earliest opportunity while parties seek greater refinement.

DG+IG provides a key component of the future energy system. This includes utilization of advanced inverter functionalities, which already exist in most inverters on the market today and is already employed effectively in Europe. These functionalities can transform distributed renewables from simply being seen as reducing load to highly flexible “grid assets”, and facilitating much higher penetrations of distributed generation in utility distribution networks. The specific inverter functions that are most relevant to renewable energy grid integration include reactive power support, voltage support, fault ride-through, and ramp rate control.

Other unappreciated yet significant benefits of DG include:

- Avoided Risk and Enhanced Security – Local DG is, in aggregate, dramatically less susceptible to outages caused by weather, accident or intent as it is widely dispersed and avoids the choke points associated with transmission facilities and fuel distribution networks that supply conventional design. If a failure does occur in local DG, the impact is limited in scale and area, with surrounding facilities able to mitigate.
- Economic Indifference – full recognition of Locational Value of DG has no cost to ratepayers as it is a reflection of avoided costs that would otherwise be incurred

- Societal Benefits – locating renewable generation near load supports widely distributed clean energy investment near all communities throughout the state. DG also puts local labor to work on local installations, producing three times the employment compared to investing in transmission infrastructure and remote generation.

While the benefits listed above are specific to wholesale DG, the Clean Coalition cannot emphasize enough the importance of DG used in conjunction with IG options. Energy storage and demand response can provide many benefits to this process, often without the need to build expensive transmission. A few of these benefits include: improved efficiency and reliability from generation to customer, lowered capital investments requirements, and lowered emissions. ⁴

In addition, DG+IG as an NTA option would move California’s energy grid infrastructure toward high penetrations of clean local energy in preparation for the energy paradigm shift consistent with ongoing State goals for increased levels of renewable energy technologies.

Respectfully submitted,

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⁴ *Updating the Electric Grid: An Introduction to Non-Transmission Alternatives for Policymakers*, US Department of Energy, September 2009, pg. 13