UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Interconnection Queuing Practices	)	Docket Nos. AD08-2-000
	)	
Midwest Independent Transmission System Operator, Inc.	)	ER07-1375-000
	)	
Midwest Independent Transmission System Operator, Inc.	)	ER07-970-000
	)	
Southwest Power Pool	)	ER07-1311-000
	)	
PacifiCorp	)	OA07-54-000
	)	
United States Department of Energy Bonneville Power Administration	)	NJ08-2-000
	)	
PJM Interconnection, L.L.C.	)	ER08-280-000
	)	
California Independent System Operator Corporation	)	ER08-140-000

INTERCONNECTION ISSUES FACING UTILITY-SCALE SOLAR PROJECTS

TECHNICAL CONFERENCE

DECEMBER 11, 2007

PRESENTED BY: JOSHUA BAR-LEV
Vice President, Regulatory Affairs,
Brightsource Energy

INTRODUCTION

- I am representing the views of BrightSource Energy (BSE) as a solar developer, but these views on interconnection queuing issues and the interconnection process also reflect the views of other renewable energy project developers in California who have reviewed my remarks.

- BSE, other solar developers and a number of wind developers, through the California Wind Energy Association (CalWEA), have been working together to develop a common sense, and common, solution to the problems associated with the current LGIP process and, in particular, the current queue in California. We think that we have succeeded. Our solution is summarized in the handout developed by Dariush Shirmohammadi and Hal Romanowitz and, although I will comment on the reform proposal briefly in a few moments, Dariush is here today to answer any specific questions that you may have.

- In addition to discussing our proposed solution for fixing the LGIP process and clearing out the existing queue, I am also going to discuss a critical failure in coordination among the various federal, state and regional entities with jurisdiction over transmission planning, siting and construction, which is hampering the achievement of our collective policy goals. FERC can, and should, play a much more aggressive role in facilitating such coordination.

FIXING THE LGIP AND CLEARING THE QUEUE LOGJAM

- As you have undoubtedly heard already, the LGIP process is not working and the California ISO's interconnection queue is completely jammed. There are roughly 80,000 MW of generation in the queue, of which 40,000 MW is renewable generation. For perspective California's peak demand is in the neighborhood of 60,000 MW. Generators' interconnection requests are being processed at a snail's pace and there is no certainty in the timing and costs associated with their interconnection.

- Here is the root of the problem: the current LGIP study process duplicates system transmission planning, leading it to be very complex and reiterative. This leads to delays and uncertainty, because the timing and cost responsibility for generators in the current LGIP is conditioned upon the behavior of earlier-queued projects.

- It is important to note that, although the LGIP study process is complex and reiterative, it is not producing the transmission facilities needed to interconnect many generators. Inasmuch as the LGIP process does not appear to be producing significant grid facilities, the LGIP process really is serving noone's purposes today; neither CAISO's transmission planning purposes, nor generators' interconnection purposes.

- We believe that the actual transmission upgrades needed to interconnect projects should be planned through a Regional Transmission Planning Process. This would allow the interconnection study process to be significantly streamlined by quickly evaluating generators' approximate transmission cost responsibility to generate the basis for an "earnest money" deposit, rather than an upfront financing obligation for an actual transmission upgrade.

- FERC should grant a one-time waiver of existing queuing rules to allow for retroactive clustering. This will enable CAISO to study expeditiously all generation currently in their queue, in geographically oriented clusters, and, using the streamlined study process referred to above, proceed expeditiously to interconnection agreements.

- Those generators that are willing to sign an interconnection agreement and make an earnest money deposit will receive timely an LGIA. Those that do not will drop out of the queue.

- Obviously there is a lot more to it than what I just described, and we intend to present a much more detailed explanation in our written comments to follow the technical conference.

- The major benefits of this approach – ones that should be inherent in any reform proposal – are:

    - It will clear the queue within six months to a year by developing approximate, but firm, transmission cost responsibility figures that projects must accept to stay in the queue;

    - It allows real projects to commit to an Interconnection Agreement with reasonable cost and timing certainty, as opposed to imposing obligations simply for the purpose of weeding projects out. (A weeding-out approach that does not provide cost and timing certainty would simply favor the most well-financed companies.)

    - It eliminates the need to do restudies when queue changes occur (conducting multiple restudies of a shortened queue does not materially contribute to solving the problem);

    - It integrates transmission planning for interconnecting generators with the regional transmission planning process to produce transmission upgrade plans that meet multiple needs simultaneously; and

    - By devising transmission plans that address multiple system needs, it is more efficient and cost-effective, and it eliminates the need for participant funding.

<u>THE CHALLENGE OF MEETING RENEWABLE ENERGY POLICY GOALS</u>

- The LGIP and queuing solution that I just described involves a problem that is not unique to renewable generators; indeed it affects conventional generators and renewables alike. And our solution is resource-neutral, it would solve the problem for both conventional generators and renewables alike. But I would be remiss if I did not spend some of my time with you today discussing unique issues relating to renewable generation and our common policy objectives with respect thereto.

- There are many public policy and private investment goals that renewable developers like BSE are trying to achieve with our projects. I have tried to display these private and public policy goals in the chart before you. On-time, on-budget delivery of renewable

energy, and 100% performance of contractual obligations is the only way to satisfy investors and lenders, satisfy the states' renewable portfolio standard (RPS) goals, the DOE's renewable energy objectives, the public's desire to address climate change cost-effectively, and also meet the commitments agreed to in power supply contracts. Fulfillment of those goals also helps meet the Energy Policy Act of 2005's goals and the goals of many states to encourage renewable energy.

- FERC has a pivotal role in achieving these goals through its jurisdiction over utilities, regions, rates, RTOs and ISOs, and regional reliability councils. Foremost among these roles is to encourage a modern highway system for electrons, and especially given climate change, renewable electrons.

- FERC's responsibility under the Federal Power Act and the EPAct 2005 and other statutes to provide such adequate transmission infrastructure is critical to achieve our goals. Yet, the Cal ISO pointed out in a recent FERC filing that the existing transmission system is "inadequate" to meet California's RPS goal that 20% of demand be met with renewable energy by 2010, and 33% by 2020. This is true across the country.

- Our situation is this – we and other developers have proven, reliable technology that will get cheaper as markets develop through state RPS programs because economies of scale result in declines in cost. BUT we cannot reach those markets because our electron highways are clogged and, as I already discussed, in some cases the process for expanding them is broken. We have an absurd situation – developers cannot commit to dates in PPAs, or must have broad delivery dates or numerous alternate interconnection points because the highway system has to cross jurisdictional hurdles and navigate a Kafkaesque transmission study and permit process. The first question we ask is, given the low cost of transmission relative to the delivered price of energy, why aren't we starting with the supposition that we should invest in a network that will provide access to renewable resources? We ask – is this how we developed our gas transmission system? Is this how we plan and develop the rest of the system, both distribution and high voltage? Why isn't the cost of transmission upgrades that benefit the entire grid being socialized from day one? If we need to show that we developers are "real," why not some form of "earnest money" rather than developer financing of upgrade costs. Why are we trying so hard to figure out an ever changing cost responsibility, which we'll get back anyway over five years? These are the questions that our LGIP reform proposal squarely addresses.

- Moreover, there is a broad but essential planning challenge for FERC, state agencies and utilities that share jurisdiction and responsibility for the highway. To meet the goal of adequate transmission requires resolution of numerous issues in multiple and often conflicting jurisdictions at the state, federal and regional level, as illustrated in the attached chart. For renewable project developers to meet their goals, the various processes identified in the chart have to be linked. But they are not. Instead, we developers are encountering expensive, time consuming and frustrating hurdles. We ask, why isn't FERC, and the RTO's and transmission providers under its jurisdiction, taking the lead and coordinating with other stakeholders to streamline the build-out of the system? Why is everyone working within silos?

OVERLAPPING JURISDICTIONS (The Silos That Need to be Linked)

- The need for multi-jurisdictional approvals further complicates and delays the transmission siting process for a number of reasons (see chart):
    - ISOs and RTOs: The processes for transmission planning, transmission funding, and coordination with interconnected systems are all subject to various state and federal approvals. This, coupled with an unwieldy interconnection queue and study process, inevitably leads to delays.
    - The approval process is further complicated when it involves the siting of transmission or distribution lines across federal lands. Several federal agencies – principally BLM and DOE, but others are involved as well – play an important role in determining whether needed transmission can be built across federal land to accommodate renewable energy projects. These agencies are obligated, as is FERC, to work together to designate corridors for electric transmission and distribution lines. Indeed, under Section 368 of EPAct 2005, these agencies were required by law to conduct any necessary environmental reviews and designate such corridors in the 11 Western states by August 8, 2007. This process was a critical first step to siting and constructing essential new transmission lines. Further, these agencies are obligated to designate electric transmission corridors on federal lands in the remaining states by August 8, 2009, and the agencies have a continuing obligation to designate additional electric transmission corridors on federal lands in the future. It is absolutely critical that FERC work with the other agencies designated in Section 368 to accomplish these congressionally mandated goals.
        - DOE: It is also essential that FERC work closely with DOE, both to accomplish the mandate in Section 368, and to establish national interest transmission electric corridors on non-federal lands, and ensure that needed transmission is constructed as provided in Section 1221 of EPAct 2005. Section 1221 was enacted because our nation lacks adequate transmission capacity, but also because in many states entities such as independent transmission companies are not authorized to apply for necessary siting permits because they do not directly serve end-use customers in those states. Section 1221 thus complements the federal policy adopted in EPAct Section 368 and actually provides a means to link transmission corridors on federal lands with timely construction of new transmission on non-federal lands to relieve transmission congestion and ensure access to reliable energy service.
        - BLM: Solar power developers need to have access to potential solar power plant sites on federal lands, reasonable rent for the sites and timely access to transmission. This requires the integration of the BLM/DOE Programmatic Environmental Impact Statement (PEIS) process, land use planning under the Federal Land Policy Management Act, and federal and state laws protecting wildlife, cultural resources and water. All of these

activities impact transmission siting and planning and must be coordinated under EPAct Section 368).

- Multiple State Approvals: The states also have a role to play in solving the transmission bottleneck by coordinating and streamlining their own processes. States should not revisit determinations of need made by their ISOs, which easily adds a year to the siting process.

- FERC: As the Commission well-knows, timely market entry and access to adequate generating capacity is crucial to competitive wholesale power markets. FERC's policies must promote market rules that encourage competition as well as competitive entry by allowing generators to earn a fair return on their investments, by vigorously upholding the sanctity of privately negotiated contracts, and by adopting interconnection rules and procedures that accommodate timely interconnection with cost certainty. The Commission now has a golden opportunity, through the Order 890 (Schedule K) compliance process, to ensure that transmission providers adopt tariff changes to ensure that the transmission construction process is timely, efficient and results in new transmission on-time and on-budget. The Commission should use its jurisdiction over transmission rates to reward transmission owners for timely, on-budget construction of new transmission through rate incentives, such basis-point adders to returns on equity. By the same token, the Commission should impose disincentives on transmission owners for late and over-budget projects. Finally, consistent with its obligation to coordinate with other agencies to promote timely transmission construction, the Commission must show that it is willing to use its backstop siting authority under Section 1221 of EPAct to ensure that transmission will get built in national interest electric transmission corridors to promote reliability or relieve congestion if states drag their feet.

- Utilities: Much of what I have said about FERC's authority applies directly to utilities that are directly subject to FERC regulation. These utilities must embrace their obligations to accommodate timely interconnection of new generation projects, must be accountable for transmission that is built on time and on budget, facing appropriate rate disincentives or even contractual penalties when they fail.

- Bottom Line: Today there is no meaningful coordination between transmission planners, builders operators and other federal and state agencies to meet developer needs to bring projects on-line by a predictable date-certain. FERC, however, is a pivotal player in the process for all of the reasons that I have given, and must show leadership if we are to break the logjam in the interconnection process and, more importantly, ensure that appropriately-sized, cost-effective transmission is available when it is needed to permit new generation projects to serve the needs of consumers.

FERC TOOLS TO SPEED THE PROCESS

- FERC can play a pivotal role through its jurisdiction over transmission to bring harmony to these various processes in three important ways:
    - Through the Order 890/Schedule K filing and review process, FERC can require transmission planning to take into account processes at DOE, BLM and the states that affect the timing and siting of transmission.
    - FERC can also use its jurisdiction over transmission rates to reward on-time, on-budget transmission projects, and to impose financial consequences for delayed and over-budget projects. FERC can encourage utilities and independent transmission companies to coordinate and subcontract the work of building the highway.
    - Finally, where clogged interconnection queues are preventing renewable energy projects from moving forward, FERC can require ISOs and transmission providers to change the way they study, plan and approve projects in the queues to speed the process and increase in-service date certainty, as our proposed reform would accomplish.

FOCUS ON TRANSMISSION PLANNING

- Timely interconnection of new renewable generation is critical to competitive wholesale power markets, meeting resource adequacy requirements and achieving clean energy targets.
- To achieve greater timing certainty, FERC needs to impose firm, binding timelines for interconnection studies and transmission owner construction of interconnection facilities and associated grid upgrades backed by meaningful enforceable penalties for non-performance by transmission operators or transmission owners. We all need to see, transparently, a transmission "dashboard" that tells us which projects are on schedule and behind and why.
- Transmission planners/operators must also coordinate regional transmission planning and implementation with agencies responsible for state and federal energy and land use to meet:
    - renewable energy and resource adequacy requirements;
    - State planning for renewable energy zones;
    - DOE/BLM land use and energy park/transmission corridors;
    - investor requirements;
    - PPA requirements;

- as well as a number of other objectives as outlined in the attached chart.

- Transmission Provider Schedule K filings in December 2007 should be scrutinized for regional planning and coordination with DOE, BLM and state agencies to designate energy right-of-way corridors on federal lands in the West (EPAct § 368) as well as RETI and CREZ type processes to the extent that these affect transmission planning.

- Order No. 890/Schedule K filings must explicitly account for growing solar and wind resources and the need for interconnection of generation resources in the transmission planning process.

- FERC needs to use backstop siting authority (EPAct §§ 1221 and 1222) when states fail to act expeditiously to process transmission siting requests.

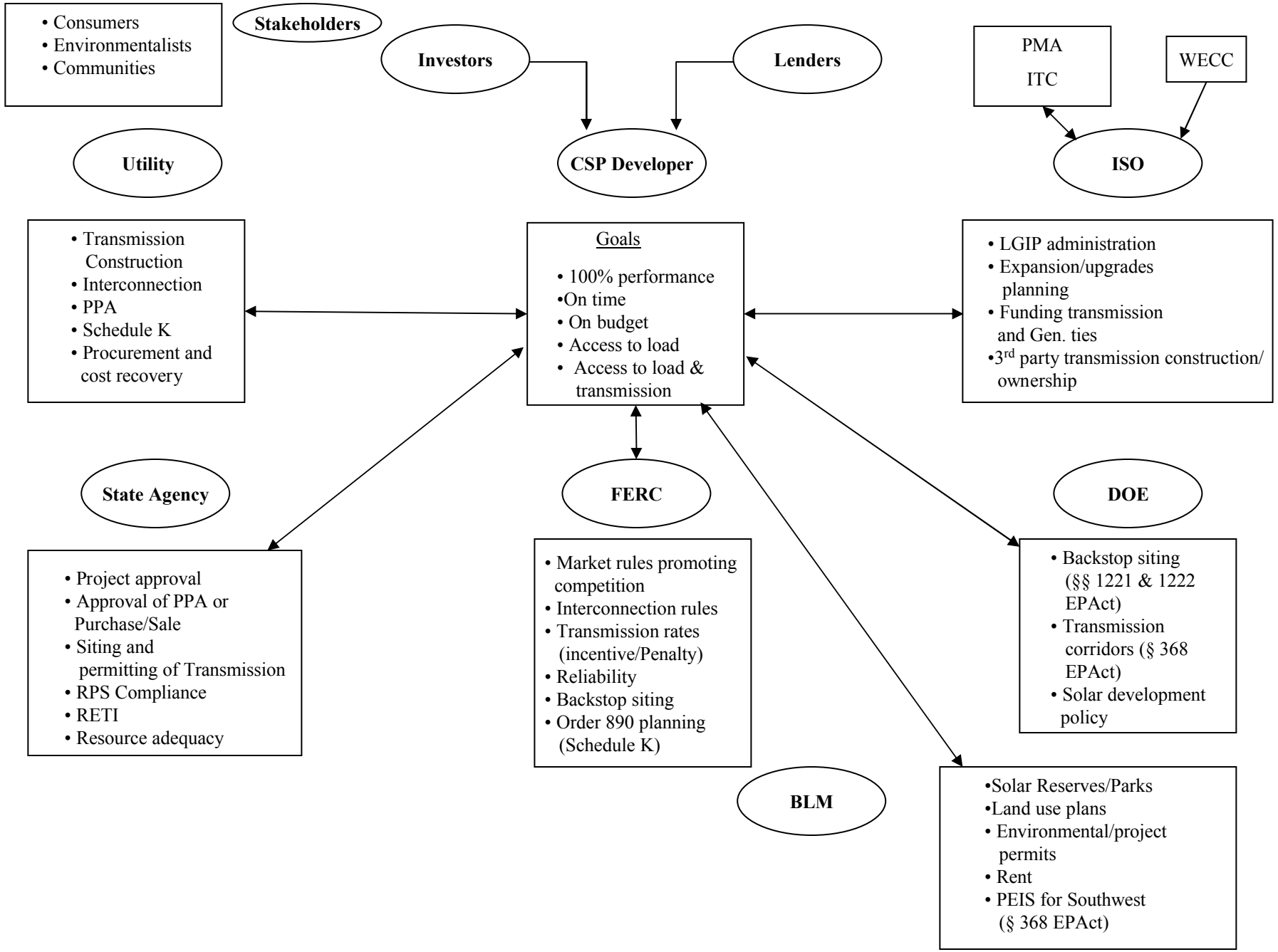
TRANSMISSION RATES

- Renewable energy developers and their investors and lenders require certainty respecting the cost and timing of transmission so that developers can negotiate PPAs and lenders and investors can decide if a project is worthwhile.

- Transmission owners should receive rate incentives for on-time, on-budget transmission construction, such as basis point adders to authorized returns on equity, and disincentives for delayed and over-budget projects, such as basis point reductions to the ROEs.

- More cost effective transmission will result from the comprehensive, fully integrated transmission planning process that we propose to also resolve the interconnection queue log jam.

Jurisdictional Challenges in Utility Scale Solar Projects



Reforming the Generation Interconnection Study Process

Presentation by:
Dariush Shirmohammadi
(dariush@shirconsultants.com)

FERC Technical Conference
Washington, DC – December 11, 2007

Fundamental Failure of the Current Interconnection Study Process

- **Interconnection study process (LGIP) parallels full transmission planning process**
  - **Justifiably very complex**
  - **But, identified network upgrades are often not even built**
  - **Study results for a project subject to change due to activities of higher queued projects**
- **Iterative and wasteful transmission studies**
  - **Transmission cost responsibilities are developed too late and subject to change**
- **Frustrates financing and PPA negotiation**
- **NO cure for this failure especially when there are large numbers of projects (some speculative) in the queue (about 80,000 MW to date)**

Principles of Reform

- **Plan all transmission upgrades as part of Regional Transmission Planning Process (RTPP)**
  - **All generation with signed IAs treated as NEED in RTPP**
    - **Account for the generation online date in the IA**
  - **Ensures optimum transmission upgrades to meet all system needs versus piecemeal transmission development**
- **Allows significantly streamlining of the LGIP to:**
  - **Study queued projects by clusters or individually**
  - **Expedited studies to identify transmission cost responsibility to achieve interconnection agreement (IA) or drop off**
    - **Financial commitment required to secure cost responsibility**
    - **Financial commitment remains UNCHANGED regardless of the activities of other generators and actual upgrades**
    - **Financial commitment released once generator comes online**
- **Compliant with State's RETI/CREZ program implementation**

Clearing the Existing Queue

1. **FERC authorization for retroactive cluster studies**
   - **Projects studied using Locational Clusters**
   - **Projects studied at requested level of deliverability**
   - **Projects that opt out of cluster studied after cluster studies are complete**
2. **Clusters studied using a streamlined study process**
3. **To move forward, a project must pay for Facility Studies with the understanding of its transmission cost responsibilities**
4. **After Facility Studies are complete, projects provide financial commitment based upon their identified transmission cost responsibilities and sign IAs**
5. **The current queue is cleared and a fresh queue window starts**

Integration with Transmission Planning