



California ISO
Your Link to Power

**California ISO Proposal for
Location Constrained Resource
Interconnection**

October 1, 2007

Location Constrained Resource Interconnection Draft Proposal

Table of Contents

1	Executive Summary.....	3
2	Background	4
2.1	CAISO Petition for Declaratory Order.....	4
2.2	Order Granting Petition for Declaratory Order	4
3	Key Principles for Eligibility.....	5
3.1	The transmission project must not otherwise be eligible for rate treatment that allows costs to be incorporated into the Transmission Revenue Requirement of a PTO.	5
3.2	The transmission project would permit wholesale transmission access to an area not readily accessible where there is a significant energy resource that is not transportable.	6
3.3	The transmission project will be turned over to the CAISO's operational control.	6
3.4	The transmission project is designed to serve multiple power plants.....	6
3.5	The transmission project is evaluated within a prudent grid planning process involving the CAISO, affected utilities and stakeholders.	7
3.6	There will be a rate impact cap imposed to ensure the TAC rates mitigate the short-term cost impact on ratepayers.	9
3.7	The transmission project will be able to demonstrate adequate commercial interest among multiple generation developers.....	9
4	Coordination with Order 890.....	10
5	Summary of Stakeholder Process and Input	11

Location Constrained Resource Interconnection Proposal

1 Executive Summary

The potential exists for the development of significant generation resources that may be constrained as a result of their location in areas that are not readily accessible to the CAISO grid and the general immobility of their fuel source (referred to hereinafter as “location constrained resources”). Many CAISO stakeholders have stated that the cost of transmission interconnection facilities constitutes a significant barrier to the development of location constrained resources. Most obviously, the production of electricity through wind, solar, biomass and other technologies is limited to certain geographical regions with very little nearby load but vast potential for energy supply. Power plants in these regions often require long-distance, high-voltage transmission lines to interconnect to the high-voltage transmission grid. As a result the costs of such interconnection facilities are considerably greater than the costs of traditional generator tie-lines that are used to connect generators that are located closer to the CAISO grid. Moreover, location constrained resources typically are developed by multiple developers in relatively small increments over a period of time.

The construction costs associated with an interconnection facility that can efficiently handle the output from multiple location constrained resources that are likely to be developed in these regions constitutes too great a financing hurdle for the first generation developer(s). To address these barriers to the development of transmission for location constrained resources, the CAISO is proposing an innovative approach to financing transmission facilities that will connect Energy Resource Areas to the grid.

Under the CAISO’s proposal, a Participating Transmission Owner (“PTO”) would finance the costs of a transmission project that connects location-constrained resources to the transmission network – a Location Constrained Resource Interconnection Facility (“LCRIF”) -- initially through its FERC-approved transmission revenue requirement (“TRR”), and generators would become responsible for their *pro rata* share of these annual payments as they come on line and use the facilities. Thus, the costs for the unsubscribed portion of LCRIFs will be collected through the CAISO’s Access Charges, the Transmission Access Charge (“TAC”) and the Wheeling Access Charge, rather than assigning all of the costs to the initial increment of location-constrained generation facilities. As more generation is developed in the area, the revenue requirement for the facilities would be transferred to the generators that have come on line and the TRR credited with the generators’ payments until the entire cost of the LCRIF is recovered from the generation resources in the area.

This proposal brings together the principles that were identified in the Petition for Declaratory Order (which was granted by FERC) and stakeholder input from written comments as well as feedback that the Location Constrained Resource Interconnection (“LCRI”) team received at the July 27th stakeholder meeting, the August 30th and September 21st conference call. Please note that the name of this initiative has been changed from “Remote Resource Interconnection” (“RRI”) to “Location Constrained Resource Interconnection” (“LCRI”) because it is more closely reflects the intent of this proposal.

2 Background

The CAISO began developing this initiative along with stakeholders in 2006, producing a white paper entitled “Proposal to Remove Barriers to Efficient Transmission”. In October of that year, the Board of Governors approved the plan to file a petition with FERC for a Declaratory Order in preparation for a later tariff filing.

2.1 CAISO Petition for Declaratory Order

On January 25, 2007, the CAISO filed a Petition with FERC for a Declaratory Order seeking conceptual approval of a new financing mechanism to facilitate the construction of interconnection facilities for location-constrained resources. On April 19, 2007, FERC granted the CAISO’s petition and accepted the design concepts proposed therein, thereby paving the way for the CAISO, in cooperation with its stakeholders, to develop and file tariff language for implementing this important policy initiative. The LCRI draft proposal reflects the CAISO’s consideration of feedback it received from stakeholders, as well as the guidance the CAISO received from FERC in its April 19 Order, and lays out a second draft of a proposal which will be reflected in tariff language and filed with FERC no later than October 31, 2007.

The CAISO’s proposal can be summarized as follows:

Participating Transmission Owners would pay the up-front costs of constructing Location Constrained Resource Interconnection Transmission Facilities, *i.e.*, LCRIFs. The costs of the unsubscribed capacity of qualifying LCRIFs will be rolled into the TRR of the relevant PTO, and therefore into the CAISO’s Access Charges. As additional generation resources are developed in the area and connect to the LCRIFs, cost recovery will be transferred on a going forward basis to those new generation owners on a “pro rata” basis, and the revenues credited against the costs included in the TRR. Once the anticipated generation is fully developed, the going forward costs of the project will be borne entirely by generation developers and will not be included in the TRR recovered through the CAISO’s access charges. Thus, under the CAISO’s proposal, the costs associated with the unsubscribed portion of the qualifying facilities will be included in TAC and the Wheeling Access Charge, until additional generators are interconnected, at which time costs will be directly assigned to such generators.

The proposal allows for multiple developers to pay for their share of the capacity of a line as they come on-line. The CAISO’s proposal will promote the construction of transmission interconnection facilities to connect remote regions to the grid where location constrained resources are located. Also, the CAISO’s proposal will facilitate the optimal sizing of such interconnection facilities in order to capture efficiencies in areas with large potential for location-constrained resources. As more generation is developed in the area, the revenue requirement for the facilities would be transferred from the CAISO access charges to the specific generation developers until such time as the developers are fully responsible for the entire cost of the transmission facilities, similar to the current cost treatment for generator tie-lines.

2.2 Order Granting Petition for Declaratory Order

On April 19, 2007 FERC granted the CAISO’s petition for Declaratory Order. FERC agreed with a number of the proposals and left others open for consideration during the stakeholder process.

The Commission made the following determinations:

- “Proposed rate treatment is not unduly preferential or discriminatory and includes protections to customers that are just and reasonable”(P2)
- “Strikes a reasonable balance that addresses the barriers to development of location-constrained resources and includes appropriate ratepayer protections” (P3)
- “the CAISO’s proposal is consistent with and supports state, federal and regional policies that encourage the types of clean, renewable generation that are often location-constrained” (P68)
- “the CAISO proposal should be limited to ‘wires only,’ and that the CAISO ‘s proposal is still subject to Commission review under FPA section 205 when the CAISO files tariff provision to implement the proposal”(P88)
- All resources meeting the definition of location constrained should be eligible under the CAISO’s proposal (PP 74-75)

Additionally, FERC identified several issues that needed clarification. These issues have been addressed by the current proposal. They include the following:

- “clarify in its eventual tariff filing what if any costs would be allocated to wheel-through customers and their corresponding benefits” (P86)
- Subscription levels and the rate impact cap – FERC declined to rule but stated that “we preliminarily accept the ranges proposed as they strike an appropriate balance between encouraging the development of location constrained resources on one hand and protecting ratepayers on the other” and “the overall requirements should be finalized in the stakeholder process” (P89)
- “The process for identifying an energy resource area under the CAISO’s proposal is ambiguous...We expect eventual tariff provision will make clear how these areas will be selected”. (P90)
- “Any project financed through this mechanism would be subject to an independent regional transmission planning process that must define the benefits a facility provides to the grid.” (P63)

3 Key Principles for Eligibility

The CAISO’s proposal, accepted by FERC, contains the key principles which are the basis for this proposal. They are:

3.1 The transmission project must not otherwise be eligible for rate treatment that allows costs to be incorporated into the Transmission Revenue Requirement of a PTO.

To be eligible for the rate treatment proposed by the CAISO, a qualifying LCRIF cannot otherwise be eligible for rate treatment that would allow its costs to be incorporated into the TRR of a PTO *i.e.*, it must not meet the definition of a network facility under FERC precedent.

Additionally, the CAISO’s petition for declaratory order focused on the inclusion of the costs of LCRIFs in the TAC. In FERC’s order granting the CAISO’s petition for declaratory order, the question was raised whether wheel-through customers who pay Wheeling Access Charges would receive benefits from LCRIFs and whether they should be allocated the costs through the TAC in the same manner as other transmission customers. This issue was vetted through written stakeholder comments as well as discussion during the stakeholder meeting on July 27th and the conference call on August 30th. Based on this feedback the CAISO determined that wheel-through customers benefit in many ways from these types of projects, just as other customers do and should be allocated their share of the costs in the TAC accordingly. In

particular, wheel-through customers will benefit from LCRIFs in the following ways: (1) they provide additional resource interconnections to help relieve congestion; (2) they provide additional opportunities to meet the state's RPS goals; (3) the CAISO operates an integrated transmission system (which will include LCRIFs under the CAISO's operational control) used to serve all customers, including wheel-through customers; and (4) LCRIFs will improve system flexibility and reliability, thereby benefiting all customers. In addition, the TRRs of PTOs are currently calculated in the same way for purposes of establishing the Transmission Access and Wheeling Access charges; the CAISO does not believe that TRRs should be calculated differently with respect to the costs of LCRIFs.

3.2 The transmission project would permit wholesale transmission access to an area not readily accessible where there is a significant energy resource that is not transportable.

This proposal addresses the current problem faced by developers who are likely to develop location-constrained generation resources in areas that are not already accessible to the grid. Transmission facilities that are necessary to connect these locationally constrained resources would be eligible for the LCRI financing mechanism. To qualify for the treatment proposed herein, a line must connect to location-constrained resources including, but not limited to, the following types of resources-- wind, solar, biomass, geothermal, photovoltaic, hydroelectric, fuel cells using renewable fuel, digester gas, municipal solid waste, landfill gas, ocean wave and ocean thermal tidal current.

Eligibility for the proposed rate treatment will depend upon a LCRIF's location in an Energy Resource Areas ("ERA") jointly certified by the California Public Utilities Commission ("CPUC") and the California Energy Commission ("CEC"). Generation located in one of these areas is not required to use the LCRIF methodology to connect to CAISO grid; it is simply an option, *i.e.*, one "tool in the toolbox".

An issue raised by stakeholders concerns the limited amount of time available to the CPUC and the CEC to develop the criteria for designating ERAs prior to the implementation of the LCRI process. The CAISO proposes that prior to the completion of the ERA designation process, if the CAISO determines that a LCRIF proposed by the CAISO, a PTO, or a non-Participating TO sponsor meets all of the criteria **except** the requirement to be located in an ERA the CAISO will bring the project before the California ISO Board of Governors for approval.

Potential LCRIFs that are outside of the State of California which meet all of the criteria except for the ERA requirement will require CAISO Board of Governors approval.

3.3 The transmission project will be turned over to the CAISO's operational control.

This proposal is targeted toward High-Voltage transmission facilities that are will be under CAISO's operational control.

3.4 The transmission project is designed to serve multiple power plants.

This proposal is targeted toward bulk-transfer transmission facilities that can efficiently serve multiple (more than one) generating resources. These locationally constrained resources would each individually, which may be developed over a period of time, have capacity that is significantly smaller than the total transfer capability of the transmission facilities.

3.5 The transmission project is evaluated within a prudent grid planning process involving the CAISO, affected utilities and stakeholders.

The CAISO is developing transmission planning processes in compliance with FERC's Order No. 890, which FERC has required to be filed as an attachment to the CAISO Tariff by December 7, 2007. The filing will incorporate stakeholder input, as well as allowing Project Sponsors to submit proposed LCRIFs during an "Open Season" to be evaluated in the transmission planning process. The transmission planning process will include in its evaluation the potential for a flexible and robust transmission plan beyond the proposed connection of the LCRIFs to the CAISO Controlled Grid. In addition, the CAISO transmission planning process also includes language of regional participation through the California Sub-Regional Planning Group ("CSPG"). For non-PTO's projects that are proposed to be competing with PTO's projects to access resources in the same ERAs, the CAISO proposes that the resolution of competing projects be resolved through participation in the CSPG.

The CAISO proposes the following process, consistent with its annual transmission planning process, to evaluate proposed LCRIFs that are to be located under the CAISO's operational control (this process is summarized in the chart presented as Attachment A):

3.5.1 Submittal/Application of proposed LCRIFs

The CAISO proposes the following project justification and technical data requirements (aka Project Justification and Technical Study) when a PTO or other Project Proponent submits their proposed LCRI transmission project to the CAISO for evaluation:

- a. Provides detailed information in meeting Key Principles 3.1, 3.2, 3.3, 3.4 and 3.7;
- b. Has detailed transmission studies which include power flow, short circuit and transient stability analyses to demonstrate that the proposed project meets applicable CAISO/WECC/NERC Grid Planning Standards;
- c. Includes several transmission alternatives (the CAISO suggests having at least three);
- d. Provides planning level cost estimates for the proposed transmission project as well as its alternatives;
- e. Provides a conceptual network transmission plan for future connection of the proposed LCRIF;
- f. Provides an estimate for the operating date;
- g. Provides a conceptual plan for connecting potential generation projects in the area if this information is known.

Upon receiving the Project Justification, the CAISO will review to determine whether the proposed submittal meets the data requirements above. The CAISO will provide a letter response to the Project Proponent within 30 calendar days to notify whether or not the project submittal meets the above data requirements. The CAISO will include the proposed project in the CAISO Transmission Plan in its following year's transmission planning process (please see "Open Season" discussion in Section 4.5.2 below).

3.5.2 Open Season

The proposed LCRIF transmission project must be submitted to the CAISO during the Open Season of the annual transmission planning process, which lasts from January 1st to November

1st for the following year's evaluation (i.e., submittal of the projects from January 1st – November 1st, 2008 for the CAISO transmission planning process that occurs in 2009.

3.5.3 Evaluation of Proposed LCRIF Transmission Project(s)

If a proposed LCRIF transmission project meets the information adequacy requirements as outlined in Section 3.5.1, the CAISO will include the proposed project in its annual transmission planning process in the following year. The proposed transmission project will be included in the Study Plan of the CAISO annual transmission plan for further detailed evaluation and approval. The CAISO annual transmission planning process is a stakeholder process that includes the CAISO, PTOs and stakeholders. This process will be described in greater detail in the CAISO's Order No. 890 compliance filing.

In evaluating the proposed LCRIF transmission project(s), the CAISO considers the following key elements:

- a. Meeting Key Principles 3.1, 3.2, 3.3, 3.4 and 3.7;
- b. Meeting or surpassing applicable CAISO/WECC/NERC Grid Planning Standards;
- c. Having a flexible and robust transmission plan for LCRIFs (i.e., the proposed transmission plan is robust that it can be expanded to network facilities in the future, yet flexible to accommodate the initial proposed location-constrained generation interconnections);
- d. Performing cost-benefit analysis for each proposed LCRIF project. As part of the CAISO's transmission planning process, the CAISO will perform an economic analysis to evaluate the estimated costs and benefits each project will bring to the CAISO system in order to meet future demand requirements, including the California RPS requirements. The costs and benefits of proposed LCRIF projects will be compared with that of other LCRIF projects and alternatives that will meet the same requirements, such as the RPS. According to the outcomes of the analyses, as well as other transmission planning considerations, the CAISO will rank and prioritize the proposed LCRIF projects and alternatives and approve projects based on the ranking. In performing this analysis, the CAISO will consider the following elements in its evaluation:
 - i. Maximum potential capacity for location-constrained generation (obtained from the State regulatory agencies);
 - ii. Maximum potential energy for meeting the State RPS goals;
 - iii. Various transmission alternatives to determine the most cost-effective transmission plan;
 - iv. Total capacity of generation projects in the CAISO generation queue for each of the ERA;
 - v. Fuel diversity (as an example, an ERA for wind energy is selected in conjunction with either geothermal and/or solar energy to provide fuel diversity portfolio);
 - vi. Distance to the nearest possible CAISO transmission bulk facility (for connection to the CAISO controlled grid);
 - vii. Potential viable transmission route;

- viii. Order of magnitude of transmission cost per MW for the LCRIFs to deliver energy to the load centers;
- ix. Realistic commercial operating dates for location-constrained projects and the transmission LCRIFs;
- x. Potential impact on the TAC;
- xi. Potential operational/congestion/reliability benefits of the facility;
- xii. Stranded cost risk and potential impact

3.5.4 Competing Projects from a Non-PTO

In the event that a competing project is proposed by a non-PTO, the CAISO proposes that the evaluation of similarly situated transmission projects be evaluated by the proposed California Sub-Regional Planning Group (“CSPG”). The CSPG is a newly proposed sub-regional planning group to address seams issues for transmission owners and stakeholders in California and neighboring utilities. More detailed discussion on the CSPG will be provided in the CAISO’s Order 890 compliance filing.

3.6 There will be a rate impact cap imposed to ensure the TAC rates mitigate the short-term cost impact on ratepayers.

The total investment in interconnection facilities that can be included in the TAC cannot exceed 15 percent (15%) of the sum total of the net high-voltage transmission plant of all PTOs as reflected in their Transmission Revenue Requirement (“TRR”) and in the TAC. In Attachment H to the petition for declaratory order, the CAISO provided an illustrative analysis of the proposed asset-based cap based on the total net high-voltage transmission plant investment of the following PTOs: PG&E, SCE, and San Diego Gas & Electric Company (“SDG&E”). The CAISO’s illustrative calculations indicated that the total net high-voltage transmission plant investment of these PTOs at that time was \$3,199,765,286.¹ Applying the 15 percent cap to that amount would result in an “aggregate cap” amount of \$479,964,793 under current circumstances. Further, applying the general rule of thumb in the electric industry that the annual fixed (carrying) cost for plant is approximately 20 percent of the cost of plant capital,² the resulting maximum rate impact the CAISO’s proposal could have under the then-current level of net high voltage transmission plant would be an increase in high-voltage TRRs of \$95,992,959, *i.e.*, a maximum increase of approximately 16.04% over the current CAISO high-voltage TAC. As the total amount of net high voltage transmission plant included in the PTOs’ TRRs change, the level of the 15 percent aggregate cap likewise will change.

3.7 The transmission project will be able to demonstrate adequate commercial interest among multiple generation developers.

As an additional safeguard to ensure the viability of LCRIF projects and to mitigate the risk of stranded costs, a demonstration of commercial interest will be required for this alternative

¹ Attachment H to the Petition for Declaratory Order (<http://www.aiso.com/1b71/1b71d1263dad0.pdf>) contains all of the calculations that are described in the paragraph above, and also shows the means of calculating the net high-voltage transmission plant for PG&E, SCE, and SDG&E. The CAISO emphasizes that these calculations are for illustrative purposes only.

² See *Western Systems Power Pool*, 55 FERC ¶ 61,099, at 61,325 (1991).

cost treatment. The CAISO proposed a two-pronged test: (a) the CAISO will require that 25% of the capacity of the new LCRIF be “subscribed” pursuant to executed Large Generator or Small Generator Interconnection Agreement (“LGIA” or “SGIA”) prior to commencement of construction of the LCRIF; and (b) there must be a showing of additional interest in the project representing 35% of the capacity above and beyond the percentage LGIA/SGIA capacity required in (a). Both prongs of this test must be satisfied before construction of an LCRI transmission facility commences.

3.7.1 Test of adequate subscription through executed agreements

The CAISO proposed in the Declaratory Order for the minimum percentage of capacity that must be subscribed pursuant to LGIAs before commencing construction was in the range of 25% - 35%. FERC preliminarily accepted this range; so this was the starting point for developing the amount required in our proposal. The percentage that is the most equitable in balancing the ability to spur initial investment in a project while minimizing the risk to ratepayers is 25%. The CAISO agreed with stakeholders that this percentage should be considered in coordination with the expressions of additional interest. The combined commercial interest showing before construction can commence would be 60%. That is, 25% of the capacity of the LCRIF is subscribed through an executed LGIA/SGIA and an additional 35% of the capacity of the LCRIF has expressed adequate additional interest. The Small Generator Interconnection Agreement (“SGIA”) also meets the qualifications for this test.

3.7.2 Test of adequate additional interest

The CAISO proposed in the Petition for Declaratory Order that the minimum percentage of additional interest should be in the range of 25% - 35% which FERC accepted preliminarily. The CAISO proposes is to set the minimum percentage of addition at 35%. As mentioned above, combining this with the requirement that at least 25% minimum of the capacity be subject to executed LGIAs/SGIAs should provide adequate protection for the ratepayers, while at the same time provide an attainable threshold for developers. Again the CAISO stresses that the commercial interest test only applies to when construction of the LCRIF can commence. It does not preclude any prior designation of ERAs or selection of an LCRIF to connect a particular ERA.

The expression of additional interest can be shown in the following ways:

- LGIAs or SGIAs exceeding the 25% minimum for the showing of executed agreements above,
- Power Purchase Agreements (“PPA”) – Projects that are supported by signed firm power purchase agreements demonstrate a degree of commitment and should count toward the showing of additional interest.
- A deposit equal to the sum of the minimum deposits required of an applicant for interconnection to the ISO Controlled Grid in connection with all required studies. This amount will be reduced by deposits actually paid by the LCRI generator for these studies to the extent that it exceeds the costs incurred by the CAISO if the LCRIF is not approved or withdrawn.

4 Coordination with Order 890

Proposed LCRIFs will be evaluated and decisions will be granted as part of the overall CAISO transmission planning process. This process is being developed as part of the CAISO’s FERC

Order No. 890 Compliance filing. FERC has required that public utilities, including the CAISO, file by December 7, 2007 an attachment to their tariffs setting forth a transmission planning process that is compliant with Order No. 890. Thus, the detailed CAISO transmission planning process, including the process applicable to LCRIFs which are described in Section 3.4 of Attachment A, will be set forth in the CAISO's Order No. 890 compliance filing on December 7, not in the LCRI tariff filing.

Currently the processes in the LCRI are proposed based on the CAISO transmission planning process that will be filed in compliance with Order No. 890. The relations between the Order 890 transmission planning process and the LCRI include the following:

- Open Season: the process outlined in Section 3.5.2 assumes that we have the "Open Season" under Order No. 890;
- CAISO Transmission Planning Process: as outlined in Section 3.5, the proposed LCRI transmission projects, if having sufficient data as outlined in Section 3.5.1, are proposed to be included in the CAISO annual transmission planning process for further evaluation and approval.

5 Summary of Stakeholder Process and Input

Date	Stakeholder Engagement
July 7, 2006	Stakeholder Meeting – Panel discussion of “Evaluation of Transmission Project for Renewable Resources”
July 14, 2006	Stakeholder written comments gathered on based on panel discussion
September 21, 2006	White Paper on Third Category of Transmission posted
September 29, 2006	Conference Call to review Third Category of Transmission paper
October 10, 2006	Stakeholder written comments gathered on the Third Category of Transmission
January 25, 2007	Filing of the Petition for Declaratory Order
February 22, 2007	Due date for filing interventions or protests
April 19, 2007	FERC Order Granting the Petition for Declaratory Order
June 15, 2007	Stakeholder written comments gathered on outstanding issues outlined in Declaratory Order
July 27, 2007	Meeting to discuss the Remote Resource Interconnection Policy Proposal
August 2, 2007	Stakeholder written comments gathered on RRI proposal
August 23, 2007	RRI Proposal posted on the CAISO website
August 30, 2007	Stakeholder Conference Call to review proposal
September 5, 2007	Stakeholder comments on Proposal Due
September 14, 2007	LCRI Near Final Proposal posted on CAISO website

September 21, 2007	Stakeholder conference call for final review
September 26, 2007	Stakeholder comments on Near-Final Proposal due
October 1, 2007	Draft Tariff Language Posted
October 15, 2007	Stakeholder comments due on Tariff Language
October 17, 18, 2007	Board of Governors Meeting
October 22, 2007	Conference Call on LCRI Tariff Language

ATTACHMENT A

PROCESS DIAGRAM FOR LCRIF EVALUATION

