

**Advice on 2008 Study Request
of the
Western Interconnection Regional Advisory Body to the
Western Electricity Coordinating Council**

The Western Interconnection Regional Advisory Body (WIRAB) submits this 2008 study request¹ to the Western Electricity Coordinating Council (WECC) and its Transmission Expansion Planning Policy Committee (TEPPC). WIRAB requests² that WECC's 2008 study of transmission expansion address the following parameters.

1. Model a mix of generation and transmission to achieve a level of carbon emissions from generation in the Western Interconnection in 2018 consistent with the goal of achieving a 15% reduction in carbon emissions by 2020 relative to 2005 levels. WIRAB understands there are many alternative strategies, methods, and assumptions that could be used to model these carbon reduction goals. WIRAB will organize a work group of experts to recommend specific strategies and assumptions about generation and loads in modeling the WIRAB study request.
2. Perform sensitivity analysis of greater and lesser levels of CO₂ emission reductions that would provide insights on the potential impact of a U.S. economy-wide or international greenhouse gas (GHG) cap and trade system.³
3. In evaluating the carbon constraints specified above, model energy efficiency policies that implement the WGA Clean and Diversified Energy Initiative (CDEi) goal of 20% energy efficiency by 2020. The CDEi recommendations call for full implementation of current best practices.^{4 5}

¹ All WIRAB members --13 States, 2 Provinces and Mexico -- voted in favor of the request.

² This study request is made pursuant to the Federal Energy Regulatory Commission's Order 890 issued February 16, 2007, P 529-551, the Transmission Planning Protocol of Western Electricity Coordinating Council's Transmission Expansion Planning Policy Committee, Section 5.2.3, page 18, [http://www.wecc.biz/documents/library/FERC/TEPPC-Planning-Protocol_V1-3\(Clean\).doc](http://www.wecc.biz/documents/library/FERC/TEPPC-Planning-Protocol_V1-3(Clean).doc) , and the letter dated December 18, 2007 from the TEPPC Co-Chairs Scott Cauchois and Dave Areghini regarding TEPPC Planning Protocol and the 2008 Open Window for Economic Transmission Planning Study Requests.

³ A U.S. economy-wide or international carbon trading system could significantly change the economic level of carbon emissions from generation in the Western Interconnection. For example, some argue that under a carbon trading system it will be more economic for western utilities to buy carbon credits from Midwestern coal plants that would shut down, convert to gas, and sell their carbon allowances. Another possibility is that under a cap and trade system, other sectors of the economy, such as transportation, will find it cheaper to buy allowances from the electricity sector than to reduce their carbon emissions. In that case, the electricity sector could see an even greater reduction in carbon emissions than in the baseline scenario. A sensitivity analysis would improve the understanding of the impact of these different futures.

⁴ See the Energy Efficiency Task Force Report, Western Governors' Association Clean and Diversified Energy Initiative, January 2006. <http://www.westgov.org/wga/initiatives/cdeac/Energy%20Efficiency.htm>.

⁵ A potential fourth element of this request is to study the impact of increased penetration of distributed generation resources. For example, the Arizona Renewable Energy Standard requires that applicable utilities must meet 30% of their RPS requirements through distributed generation and the Colorado RPS

Rationale for the Study Request

Emerging government policies will probably require the Western electric power system to significantly reduce carbon emissions over the next decade. Seven states and one province in the Western Interconnection have joined the Western Climate Initiative, which collectively include approximately 74% percent of the load in the Western Interconnection, and set the goal of reducing greenhouse gas emissions 15% below 2005 levels in the year 2020. By August 2008, these states and province plan to design a cap and trade system to achieve this goal. The leading federal carbon cap and trade legislation authored by Senators Lieberman and Warner establishes a similar goal. To achieve this level of carbon emissions reductions, the generation fuel mix in the Western Interconnection would change significantly with attendant needed changes in the transmission system to deliver power from the new generation mix to customers.

The North American Electricity Reliability Corporation (NERC) issued its 2007 Long Term Reliability Assessment (LTRA) and stated that it would develop two scenarios to support the 2008 LTRA: "A Generation Fuel Mix Re-Defined by Federal CO2 Legislation" and "An Industry Facing New Levels of Natural Gas Demand." Since the August 2007 release of the LTRA, NERC has apparently modified its objective for the 2008 LTRA. Under the revised objective, each region (e.g., WECC) will be required to outline in the 2008 LTRA the scenarios it will study for the 2009 LTRA. WECC will likely be required to deliver to NERC its proposed scenarios by late spring 2008.

WIRAB recognizes that developing a sound methodology and analysis for the 2009 LTRA will require a substantial effort. WIRAB believes that studying the impact of reduced carbon emissions in the 2008 TEPPC study cycle will provide a solid foundation to make improvements to develop a more robust analysis for the 2009 LTRA.

Development of 2008 Study Parameters

WIRAB recognizes that its 2008 study request will require WECC to expand its analysis beyond the traditional production cost modeling. WECC is already taking some steps in this direction in its 2007 transmission expansion planning study by including carbon dioxide emissions in its database. To conduct the requested 2008 study, WECC will need to expand its study work to include significant analysis before running production cost models.

WIRAB understands that analyses⁶ conducted or being conducted by other groups could provide valuable input to the WECC 2008 study. WIRAB is offering to assist WECC in accessing such studies.

requires applicable utilities to meet 4% of their RPS requirements from solar energy and half of that amount must come from distributed sources.

⁶ For example, DOE's Energy Information Administration has evaluated the impact of several Congressional cap and trade proposals. Although EIA presents results nationally, the analysis generates regional results. The Western Climate Initiative is planning to hire a consultant to evaluate the impacts from achieving the WCI greenhouse gas goals. Efforts such as the WCI consultant's work could help inform the development of a WECC low-carbon transmission expansion planning scenario.

WIRAB believes the requested study comports with the criteria WECC will use to prioritize study requests.⁷ Below are the WECC criteria used for the prioritization of study requests (in italics) and how the WIRAB study request fits with the criteria.

(a) What portion of the interconnected system will be considered by the study?

The study requested by WIRAB will cover the entire Western Interconnection.

(b) Does the request raise fundamental design issues of interest to multiple parties?

The impact of potential carbon emission limits on the need for transmission in the Western Interconnection is of interest to state/provincial policy makers, state, federal and provincial regulators, generation developers, load serving entities, and transmission developers.

(c) Does the request raise policy issues of national, regional or state interest; for example, access to renewable power, and location of both conventional and renewable resources?

The study request raises major policy issues of interest at the national, regional and state level.

(d) Can the objectives of the study be met by other studies by clustering or combination?

To WIRAB's knowledge, there are no interconnection-wide studies of the impacts of carbon limits on transmission needs. Additionally, sub-regional or local studies will not have sufficient scope to identify interconnection-wide transmission needs in the event of limits on carbon emissions.

(e) Will the study provide information of broad value to customers, regulators, transmission providers, etc.?

The study will provide valuable information not found elsewhere to all types of government and private sector decision-makers.

(f) Can similar requests for studies or scenarios be represented generically if the projects are generally electrically equivalent?

WIRAB is not aware of similar requested studies or scenarios.

⁷ The WECC criteria are codified on page 21 of "Transmission Planning Protocol of Western Electricity Coordinating Council's Transmission Expansion Planning Policy Committee"
[http://www.wecc.biz/documents/library/FERC/TEPPC-Planning-Protocol_V1-3\(Clean\).doc](http://www.wecc.biz/documents/library/FERC/TEPPC-Planning-Protocol_V1-3(Clean).doc)

(g) Can requests be aggregated into energy or load aggregation zones with generic transmission expansion between?

Possibly. The answer to this question should be determined as part of the detailed study scoping process.

(f) Does the study request require the use of production cost simulation or can it be better addressed through technical studies such as power flow and stability analysis?

The study request will likely require analytic capability not found within production cost simulation or power flow and stability analysis. WIRAB expects that the scope of the inputs to a production cost simulation will determine what additional analytic tools are needed.