

Western Renewable Energy Zones Project
Technical Committee Meeting
January 13 – 14, 2009
Meeting Summary and Next Steps

Decision Items:
<ul style="list-style-type: none">▪ Approved public comment package recommendation to Steering Committee.▪ Approved WECC request recommendation to Steering Committee.
Next Steps: <ul style="list-style-type: none">▪ WGA revise public comment documents and webpage based on TC feedback.▪ WGA develop Frequently Asked Questions and update Glossary for public comment package.▪ WGA send revised documents to TC for reference.▪ WGA send revised website and documents to Steering Committee prior to approval webcast on January 23.▪ WGA prepare proposal to TC for adding a second, targeted public comment period for final REZs, including wildlife characterizations.▪ WGA will ask for volunteers for a Technical Committee subgroup to determine policy considerations and proposals for policy recommendations to send to the WGA Staff Advisory Council.▪ WGA will assemble a Phase three scoping group with broad representation from LSEs and PUCs who will report their Phase three planning efforts to the Technical Committee in April.▪ WGA will report on Phase four planning opportunities at the April Technical Committee meeting. <p style="text-align: center;"><i>Next Technical Committee Meeting: April 23 – 24 in Salt Lake City, Utah</i></p>

Day 1 – January 13

Data and WREZ Model Workshop

The meeting began with an optional workshop for Technical Committee members to receive presentations from Black & Veatch on plans for beginning the WREZ supply curves and a demonstration and progress report on the transmission model. Several Committee members participated.

Introductions & Agenda Review

Tom Darin and John Savage, committee co-chairs, and Abby Arnold, Kearns and West, facilitated the Technical Committee meeting. Ms. Arnold began by introducing members and walking through the purpose of the meeting and proposed agenda. The meeting agenda is available in *Attachment A* and a list of meeting attendees is available in *Attachment B*.

Desired outcomes:

- Recommend public comment package to Steering Committee
- Recommend WECC study request to Steering Committee

- Review and discuss Phase one report outline and schedule, and Phase two and three schedule

Review Phase One Schedule & Report Outline

Rich Halvey presented a revised Phase one schedule to the Technical Committee, detailing major milestones leading up to the Phase one report presentation at the Western Governors' Annual Meeting June 13-16 in Park City, Utah. The schedule included the following events:

- January 23 – Steering Committee to approve TC recommendation on public comment package & WECC request
- January 30 – WGA submit WECC request
- February 2 – March 2 – WREZ Public Comment Period
- March 15 – Synthesis of public comments presented to TC
- April 2 – Wildlife categorizations available
- April 8 – First draft of Phase one report (with REZ maps) available to TC
- April 23-24 in Salt Lake City – Technical Committee meeting to complete Phase one report and send to Steering Committee for approval
- Early May – Steering Committee meeting to approve Phase one final report
- May 15 – Final Phase one report completed
- June 13 – Present report to Western Governors

The Technical Committee discussed the schedule above and recommended that a second public comment period occur after the REZ maps are available in early April. The second public comment period should be targeted to solicit comments on the transition from QRA maps to REZs, which includes the wildlife categorizations provided by the Western Governors' Wildlife Council. Working within the May 15 deadline, the Technical Committee acknowledged that the second public comment period could be 10-14 days long.

Rich Halvey also presented an outline for the Phase one report. The report will be presented to the Western Governors at their Annual Meeting in June and will only focus on Phase one of the WREZ project. The report will include a history of the WREZ project and process, a description of the composition and work products from each work group with any necessary background information, and the REZ maps with non-REZ resources also identified. The report will be a technical document and will not include any specific policy recommendations for the Governors to approve. Any policy recommendations will come directly from WGA's Staff Council, however the Technical Committee can decide to make policy recommendations to the Staff Council separate from the final report.

WGA is beginning to develop the Phase one report now and will see the month of March to craft the bulk of the report so that its contents are consistent with comments received during the public comment period.

Lastly, Rich Halvey presented a definition for Qualified Resource Area.

Qualified Resource Areas represent those lands with the greatest energy density within a contiguous areas for each respective state. Initially, the WREZ Technical Committee created a basic set of renewable energy resource criteria to indentify Candidate Study Areas that were then refined into QRAs. A QRA excludes any lands with statutory or regulatory development limitations and limitations related to topography, ground cover, or urban settlement. After public comments have been considered and wildlife categorizations included, QRAs may be designated as Renewable Energy Zones for future transmission modeling and planning purposes.

Action Items:

- *WGA will prepare a recommendation to the Technical Committee for including a second public comment period once the REZs have been identified.*
- *WGA will solicit volunteers for a subgroup to identify policy considerations and possible policy recommendations for WGA's Staff Advisory Council.*

Public Comment Package

Process and Strategy

Paul Orbuch and Karen Deike outlined the proposed strategy for soliciting and synthesizing public comments. WGA staff will initially collect, track and synthesize the public comments. State-specific comments, or those from a state-specific stakeholder, will be forwarded as soon as they are received to the Technical Committee member representing that state. WGA staff will be responsible for synthesizing the comments by subject matter and, as appropriate, preparing a recommendation for addressing the comment. By March 15 the synthesis/recommendations will be forwarded to the Technical Committee or one of the work groups for consideration as appropriate.

The Technical Committee and/or Work Groups are ultimately responsible for making a determination on disposition of the public comments. If the Chairs of the Technical Committee or the Work Groups accept the recommendation developed by WGA, that decision will be relayed to the entire Technical Committee or respective work group for their information. The Chairs may also decide to communicate via e-mail or conference call with their membership to consider the public comments and the WGA recommendations.

WGA staff will create a log that sets forth how public comments were addressed and rationale for why public comments were not addressed. Once the Technical Committee or the work groups have completed the public comment review, WGA will make the public comments and the response log public on the WREZ Web site.

The public comment package will include the following documents:

1. Introduction and Background, including but not limited to:
 - a. *Context for this public package*
 - b. *First in west to review comprehensive regional perspective, what are the opportunities for developing renewables and building transmission. REZ as tool to help identify best renewable resources, areas to build that will minimize conflicts with wildlife and habitat, and where renewable*

resources can be most cost-effectively delivered to markets. Best information now and ongoing consultation with WGWC and others.

- c. *Notice of a second public comment opportunity that identifies REZs*
- d. *How wildlife information will be incorporated into final REZs*

2. February Public Comment Package will include:

- a. Qualified Resource Area maps with definition of QRA
- b. Materials and Methods Used to Develop Qualified Resource Area Maps
 - Resource criteria used to develop qualified resource areas; renewable resources (wind, solar, (biomass, geothermal, hydropower, treatment across states (i.e. resource class criteria)) and other technical exclusions (i.e. water bodies and urban areas))
 - a. QRA summary chart showing breakdown of resource classification
 - Do you have comments?
 - Resource Methodology
 - List of E&L exclusion and initial avoidance areas
 - Do you have any comments on the exclusion and I avoidance areas?
- c. FAQs & WREZ Glossary
- d. Generation and Transmission Model approach, assumptions and characteristics
 - Do you have any comments?
- e. Technology Assumptions for Supply Curve
 - Do you have any comments?

3. Additional Information to Be Provided to Public

- Western Governors' Wildlife Council's wildlife criteria for assessing QRAs
 - Do you have any comments?
- List of Additional Areas For Consideration (spreadsheet)
 - Do you have any comments?

4. Additional - Information only

- Western Governors' Wildlife Council Wildlife Data Request (*for information only*)

The wildlife characterizations will not be included in the QRA maps, however the data request that was sent out in December 2008 to solicit wildlife data from states and others will be made available, as will a list of criteria that the Western Governors Wildlife Council will use to categorize that wildlife data. There are additional land use and wildlife-related areas that the Environment & Lands Work Group and Western Governors

Wildlife Council will be considering before the renewable energy zones are identified, and that list of areas will also be made available for public comment.

Technical Committee members recommended clearly directing the public to the QRA maps, while also explaining the process each work group undertook to develop the maps. Generally, the Technical Committee recommended making the public comment as clear as possible, simplifying language and reducing the use of acronyms.

Some Technical Committee members suggested that work group co-chairs review a summary of all comments, to determine whether comments may apply to more than one work group and should be addressed jointly.

Proposed QRA Maps – ZITA Resource Criteria

Ryan Pletka began the discussion of how the QRAs were developed from the previous maps, Candidate Study Areas, most specifically what resource criteria was applied to the CSAs to generate QRA maps. The QRAs were developed using the following steps:

- 1) Started with raw renewable resources
- 2) Applied resource criteria to raw resources and exclusions based on resource development feasibility to generate CSAs.
- 3) Applied additional resource criteria and exclusions and initial avoidance areas from Environment & Lands work group to generate QRAs. This involved identifying the best resources in each state.
- 4) Boundaries were drawn around QRAs using a grid structure, and the megawatt density was calculated within each grid.
- 5) Grid squares were removed if they were isolated and did not meet the minimum criteria of 1,500 megawatts of energy.

Black & Veatch used the QRA boundaries to then calculate the megawatts of energy within each. When calculating the total energy generation they assumed that it would be unlikely that 100 percent of the resources in a QRA will be developed. Therefore, the ZITA work group agreed to apply a discount rate of 3.5 percent for solar and 25 percent for wind to account for the area within each QRA that would not be used to generate energy. These factors are intended to approximate the amount of capacity that would actually be built in an area, to help size transmission lines more realistically. The results of this analysis were presented in a summary chart, separating total megawatts out by resource type. Additionally, ZITA determined a minimum and maximum megawatt size for QRAs; 1500 MW minimum for solar thermal, wind, and hydro in Canada and 500 MW minimum for discovered, conventional geothermal, while the maximum size for a QRA is identified based on a collector system cost of \$10/MWh and approximately less than 100 miles from the collector point.

Black & Veatch presented a hand-out that defined the amount of megawatts for wind, solar, geothermal and hydropower in each of the QRAs. They noted that additional resources still need to be quantified within the QRAs including: incremental hydropower in the U.S., solid biomass resources, undiscovered conventional geothermal, and

enhanced geothermal systems potential. Non-REZ resources will also be quantified but not included in the economic analysis for REZs.

Ryan Pletka noted that the treatment of military lands is one outstanding issue in the current QRA maps. The military representative on the Technical Committee then stated that the economic discount for wind and solar creates an area of compromise for the military, however they understand that there should also be a visual representation of military interests. The Department of Defense will provide GIS data for excluding military bases from the QRA boundaries, however they have not yet determined how to address military airspace in this process. Additional remaining data needs are continued process of E&L exclusion and avoidance data and Canadian small hydropower projects.

The specific resource criteria for wind and solar resources applied by the ZITA work group can be downloaded at: www.westgov.org.

Exclusion & Initial Avoidance Areas and Outstanding Wildlife Data - Environment & Lands Work Group

Pam Eaton and Brian Weber, E&L work group co-chairs, presented the exclusion and initial avoidance categories that the work group developed, and the legally designated areas that fell into each category. Exclusion areas are defined as areas where statute or regulation preclude renewable energy development, while the initial avoidance area list is the beginning of a list that captures areas where there some purpose, policy or restriction limits renewable energy development. The E&L work group recommended to the Technical Committee that the current list of exclusion and avoidance areas be removed from the boundaries of any QRA. Additional avoidance areas will be identified by the E&L work group and reflected in the REZ maps. The co-chairs reiterated that the QRA maps do not include an analysis of wildlife data, however that analysis will be completed by the Western Governors Wildlife Council to help guide identification of the REZs. The Western Governors Wildlife Council sent out a wildlife data request in December and created criteria for categorizing the wildlife data into exclude, avoid, high sensitive, and areas with insufficient data.

Additionally, the E&L work group generated a list of additional areas for consideration as avoidance areas. Many of the items on this list came from a public comment solicitation the E&L work group undertook in Fall 2008, and other areas were raised and discussed by the work group, but they did not have time to come to a determination on avoiding them by the Technical Committee's meeting. These three documents will be available as background information during the public comment period.

To clarify, the ZITA work group also identified a number of exclusions that helped to define the QRA boundaries. The full list of exclusions is below:

- E&L statutory/regulatory exclusions
- E&L non-statutory avoid areas, excluded because of purpose, policy or restriction
- ZITA technical exclusions
 - Slope specific to each resource

- Land use restrictions such as wetlands, water bodies, and urban areas including airports
- Military bases

QRA maps – Technical Committee Discussion

Responding to questions from Technical Committee members, Black & Veatch and WGA staff made the following clarifications:

- In October, the Technical Committee determined that there should be a QRA in each state, identified using the best resources available within each state. The purpose of the resource criteria is to identify those areas that are economical to develop large-scale transmission. The underlying assumption is that the better resource class is more economical to develop and would be developed first. With the vast amount of resources in some states, higher criteria were established to identify the best resources.
- Geothermal points are being treated differently from wind and solar in establishing QRAs; all points in Nevada are being considered as a single QRA. The geothermal resources would not need access to transmission to be collected, however they would need transmission to move outside of a state. Currently in the QRA maps geothermal is not clearly depicted as one QRA, this can be represented in a more visual way, however aggregating the geothermal resources to identify a target for the collector system is more challenging and will depend on where existing transmission is.
- The total megawatts within each QRA vary because the ZITA work group did not intend to make them all the same megawatt size, they strove to make the boundaries of each QRA as compact as possible.
- Going forward, the Western Governors Wildlife Council will be responsible for deciding what wildlife data is overlaid onto the REZs. The WREZ Technical Committee, through a recommendation from the E&L work group, will decide how to use the wildlife categorizations to identify the boundaries of the final REZs.

Technical Committee members then made the following suggestions for clearly communicating the QRA maps and ZITA criteria to the public.

- Make sure website references the name of the document attached and that documents are labeled consistently.
- Qualify that this project is intended for establishing regional-level transmission.
- Develop a glossary of terms.
- Clarify that the WGWC is compiling and analyzing wildlife data and will provide that analysis to the E&L work group to make a recommendation to the Technical Committee.

Action Items:

- *ZITA clarify in the QRA methodology document why they chose to use the best resources in each state.*
- *Black & Veatch redo summary document to break out the megawatts of energy for wind and solar within each QRA, and provide another chart that calculates the*

megawatts of energy, by class, in the entire state. Additionally, table should clarify that the megawatts in each QRA will be used in the future to determine cost-effectiveness.

- *Black & Veatch revise QRA map to show the different classes of renewables within each QRA, exclude military bases, and add additional data submitted from the Environment & Lands work group exclusion and avoidance lists.*
- *E&L work group will remove land-use related criteria from the categorization document, and that will become solely a work product of the WGWC.*
- *E&L work group will clarify on the exclusion and initial avoid list what data is included in the QRA maps and what data is either not available or has not yet been collected.*

ZITA Supply Curve Assumptions

Linda Davis, WGA, briefly presented on the technology assumptions ZITA has developed for the supply curve analysis and which will be posted for public comments. Technology characteristics, components for calculating relative levelized cost of energy, can vary widely due to project size/location, labor type and other factors. Therefore, ZITA attempted to identify representative assumptions for a “proxy” renewable technology. Characteristics were identified based on the specific renewable resource and included assumptions related to efficiency, capacity factor, typical size, current financial incentives, capital costs, operating and maintenance costs, typical fuel costs and calculated levelized cost of energy. Generally, ZITA assumptions were based on current costs and technologies available today, and the user will be able to modify any assumptions that are input into the transmission planning model.

Generation and Transmission Modeling Assumptions

Jerry Vaninetti, co-chair of the Generation and Transmission Modeling work group, presented on the preliminary transmission assumptions, for the transmission model, that the work group would like to make available for public comment. The Transmission Segments Sub-Group developed a map intended to be a high-level representation of the existing bulk transmission system. The purpose of the map is to provide distances for representative segments, but it is not intended to be a detailed depiction of every transmission line in the West. Additional segments will be added later to link QRAs and then REZs. The map was constrained to identify approximately 20 major load centers and approximately 100 different segments. The purpose of the segments is to quantify the distance from resource zones to load centers for use in the WREZ transmission model.

The Transmission Characteristics Sub-Group proposed a series of technical assumptions about transmission characteristics that will serve as inputs into the WREZ model. Jerry Vaninetti presented a spreadsheet containing assumptions for transmission line capacities, transmission line capital costs, right-of-way costs, substation capital costs, operation and maintenance costs, and transmission losses. These assumptions were identified for a number of different voltages, circuits and spacing from a substation. For the spreadsheet with specific assumptions go to www.westgov.org.

Each sub-group also outlined a number of specific questions in requesting input from the public, however their ultimate goal is to have the public weigh in on the baseline transmission assumptions.

Technical Committee members generally felt that the specific questions for the public were too technical for the limited knowledge the general public has. Additionally, one of the E&L work group co-chairs noted that E&L is not prepared to comment on transmission routing at this time but that information can be included later in the process when it will be helpful to input into more detailed transmission planning. Another members cautioned that the public comment introduction should be extremely clear and state that this project will identify opportunities for where to build transmission. Finally, a ZITA co-chair added that ZITA will make sure their technical assumption costs match with assumption costs identified by the Generation and Transmission Model work group for the transmission model.

Action Items:

- *GTM will remove the technical questions for the public and instead include open-ended questions.*
- *ZITA will make sure that their technical assumption costs match with assumption costs identified by the Generation and Transmission Model work group.*

The Technical Committee recommended to the WREZ Steering Committee that they approve the public comment strategy outlined by WGA, the QRA maps, and all of the related documents for posting. WGA will revise the documents based on recommendations from the Technical Committee and will circulate them prior to the January 23 Steering Committee webcast.

Observer Comments

Margaret Schaff, Schaff & Clark-Deschene, LLC – Recommended to the Technical Committee that Phase 1 of the WREZ be put in the context that the REZs are being used to develop a transmission planning model for the public and utilities to use in a cooperative manner. And there should be a clear statement in the public comment package that whether or not you are in a REZ does not affect development or property rights. Secondly, applying different resource criteria in different states seems like a political tool to assure that ever state gets a REZ. If that is the case then tribal wind, hydro and geothermal projects should be given the same consideration, and in the QRAs they are not. Finally, how will the WECC study request undergo public comment review if it is to be submitted to WECC prior to the launch of the public comment period?

Craig Turchi, NREL – It is clear that there is a selection methodology for getting to QRAs, and there is a good graphic in the Black & Veatch presentation showing the sequential filters. However there seems to be disagreement in how those filters are being applied inconsistently among the states.

Day 2 – January 14
Review of Day 1

During the previous day, Committee members received presentations from WGA, work group co-chairs and technical consultants on the public comment process, the QRA maps, the associated documents that went into developing the maps, and assumptions for the supply curve analysis and transmission model. The Technical Committee recommended that the Steering Committee approve the public comment process and package.

WECC Study Request

Doug Larson, WIEB, presented a draft transmission planning study request to submit to the Western Electricity Coordinating Council's (WECC) Transmission Expansion Planning Policy Committee for modeling and analysis in its 2009 work plan. The request was screened through the GTM work group, as well as Technical Committee members, prior to the meeting and asks WECC to model and evaluate four separate cases:

- Request 1: Near-Term Analysis – RPS Requirements (Reference Case)
 - Model transmission needs for generation mix reviewed by LSE resource planners.
- Request 2: Near-Term Analysis – Generation mix of 25% Renewables for CO2 Targets
 - Model same time horizon but more aggressive 25% renewable penetration and carbon adder to attain CO2 target reductions.
- Request 3: Long-Term Analysis – Generation mix of 33% Renewables
 - Move beyond current 10-year time horizon and consider capital investments that last 30-40+ years.
- Request 4: Transmission superhighway overlay
 - Calculate costs and operating savings from a transmission superhighway overlay over long-term and evaluate value of overlay system.

The request presented to the Technical Committee meets a number of the criteria that WECC has for accepting study proposals. Each year WECC solicits stakeholder requests for modeling regional transmission projects. These requests need to be submitted by January 31 to be part of the 2009 study cycle, and WREZ is on schedule to have the request approved by the Technical Committee and Steering Committee by that deadline. Additionally, there is an opportunity for details of the WREZ study request to be integrated with similar study requests that WECC receives.

In response to questions from the Technical Committee, Doug Larson made the following clarifying remarks:

- WGA will identify parties on the Technical Committee that can work to help WREZ input into the 2009 study process.
- Request 4, modeling a transmission superhighway, would ask WECC to determine what a superhighway overlay would look like in the Western Interconnection and how well that superhighway would perform under certain assumptions and costs.
- WECC's real work on the modeling will begin in June 2009, and results should come back from WECC in early 2010.

- Once the REZs are identified, load serving entities will identify their preferences out of all the REZs and that will determine which REZs are modeled in the WECC study.
-

Technical Committee members made the following suggestions:

- Prioritize the four cases in the request in case WECC isn't able to model them all.
- Have study request originate with WREZ, but look to affiliated groups to help continue the dialogue with WECC.
- There are larger policy issues to consider, utilities now are not able to purchase out of state renewable energy and expect cost recovery.

The Technical Committee approved submitting the study request to WECC that includes all four cases, and they prioritized the cases in the following order:

- 1. Near-Term Analysis with RPS Requirements***
- 2. Long-Term Analysis***
- 3. Transmission Superhighway Overlay***
- 4. Near-Term Analysis with Aggressive Renewables and Carbon Constraints***

Transmission Model Progress

The transmission model is actively under development and should be fully operational in February. The GTM work group and Black & Veatch are targeting the months of March and April to conduct a series of user trainings on the model.

The Excel-based model will provide a broad range of resource information including the bus-bar costs at the generator, the delivered cost of power at the load point, and market-adjusted delivered costs which is essentially the value of the resource at a load point. The resource delivered cost will be calculated using default assumptions for transmission, generation and integration costs that the GTM work group is developing. The market-adjustment delivered cost will take that cost and subtract in the energy values and capacity values.

While there are a number of calculated assumptions and costs in the model, the user will be able to adjust any of the default assumptions.

Phase Three Steps and Schedule

While Phases one and two of the WREZ process were clearly defined in the project proposal to Department of Energy and the Western Governors Phase three was not so clearly articulated. Phase three is intended to focus on coordinated procurement cycles of load serving entities to justify building transmission to a REZ.

July 2008 the WREZ work plan did not outline specific tasks for Phase three and in Fall 2008 a small group formed and delivered a recommendation to the Technical Committee for planning out Phases three and four. On October 2008 the Technical Committee called for broader membership in this planning subgroup, with specific membership from load serving entities and public utility commission staff.

WGA has not yet scoped the activities for Phase three but suggests the following next steps:

- *Prepare strawman of preferred QRAs and present to LSE / PUC resource planners' meeting on Feb 24-25*
 - *Prepare using model default values*
 - *Illustrate where multiple load zones may have interest in the same QRA*
- *At Feb 24-25 meeting*
 - *Present strawman and solicit better ideas on preferred QRAs*
 - *Solicit interest in exploring actions needed to enable coordinated procurement*
- *Post Feb 24-25 meeting*
 - *Assemble scoping group with broad LSE and PUC representation*
 - *Research LSE procurement cycles, key LSE resource acquisition personnel, needs/motivations of different LSEs (may have help from Ron Lehr)*
 - *Secure LSE preferred REZs (also needed to implement WECC study request)*
 - *Report to Technical Committee at April meeting*

Phase four focuses on interstate collaboration, and WGA plans to report on Phase four opportunities at the April Technical Committee meeting. Scoping of Phase four is anticipated to be complete by the WGA Annual Meeting in June 2009.

Next Steps

At the end of the meeting Abby Arnold recapped decision items and next steps identified during the past two days of discussions. During the meeting the Technical Committee highlighted a number of issues that plan to address at their next meeting:

- Review wildlife overlays and E&L recommendation for refining QRAs into REZs.
- Agree on draft WREZ Phase 1 report (with final REZ maps) and send recommendation to Steering Committee.
- Consider whether or not to develop policy recommendations for WGA Staff Council to consider.
- Review scoping reports for Phases 3 & 4.

Specific decisions items and next steps for the Technical Committee are listed on the first page of this summary, and detailed Action Items are included within the summary.

Following the Technical Committee meeting WGA hosted a briefing webcast for the WREZ Steering Committee. Many Technical Committee members participated in that presentation.

Attachment A: Agenda

Western Renewable Energy Zones Project

Technical Committee Meeting

Grand Hyatt Denver

1750 Welton St.

Denver, CO 80202

January 13-14, 2009

PROPOSED AGENDA

Purpose:

- Review outreach approach/schedule for Technical Committee recommended WREZ public comment package
- Approve TC recommended WREZ public comment package including:
 - Qualified Resource Areas Maps
 - ZITA resource criteria and E&L exclusions & initial avoid areas
 - E&L and State Task Group criteria for categorizing areas within QRAs
 - ZITA supply curve assumptions & GTM transmission assumptions
- Approve WECC transmission study request
- Review and discuss:
 - Updated WREZ Phase II schedule, and Phase III schedule and budget
 - WREZ Phase I Report Outline
 - Next steps for Technical Committee and Steering Committee

Tuesday, January 13, 2009		
8:30-10:00	<u>Data and WREZ Model Workshop</u> <i>The purposes of this optional workshop are to provide Technical Committee members detailed presentations on;</i> <ul style="list-style-type: none">• WREZ resource supply curves• WREZ Generation & Transmission Model demonstration & progress report	<i>Paul Smith/Jerry Vaninetti, GTM co-chairs, Black & Veatch and Doug Larson, WIEB</i>
10:00-10:30	BREAK	
10:30 - 11:00	I. <u>Introductions, Overview of TC Objectives for Meeting and Agenda</u> <ul style="list-style-type: none">• Introductions of TC members• Review and approve agenda• Review decisions/outcomes to be made by TC	<i>Tom Darin/John Savage, co-chairs and Abby Arnold, Kearns & West</i>
11:00-12:00	II. <u>Review TC/SC Schedule & Milestones</u> <ul style="list-style-type: none">• Review Phase I schedule and milestones• Review and comment on first draft outline of Phase 1 report <i>Confirm Technical Committee buy-in on schedule and key milestones; and</i>	<i>Rich Halvey, WGA</i>

5:15-5:45	<p>VI. ACTION ITEM: <u>Technical Committee recommend to Steering Committee entire public comment package and process for soliciting comments</u></p> <p><i>The Technical Committee will be asked to recommend to the Steering Committee publication of the public comment package.</i></p>	<p><i>Tom Darin/John Savage, co-chairs and Abby Arnold, Kearns & West</i></p>
5:45-7:00	<p><u>Reception & Optional Model Demonstration Session</u></p> <p><i>GTM and Black & Veatch will host informal model demonstrations and answer questions on the GTM model.</i></p>	

Attachment B: Attendees List

Western Renewable Energy Zone Project Technical Committee Meeting Attendees January 13 – 14, 2009

Member Participants:

Co-chair – Tom Darin, Western Resource Advocates
Co-chair – John Savage, OR Public Utilities Commission
Bob Anderson– Western Grid Group
Steve Arenson – OSD Sustainability Office
Syd Berwager – Bonneville Power Administration
Ray Brady – BLM
Dana Cabbell – Southern California Edison
Pam Eaton – The Wilderness Society (*E&L WG Co-chair*)
Ken Eklund – ID Office of Energy Resources
Steve Ellenbecker – WY Governor’s Office
Katherine Gensler – Solar Energy Industries Association
Dian Grueneich/Traci Bone – CA Public Utilities Commission
Jeff Hahn – USA Biomass Power Alliance
Tom Kaiserski – MT Dept. of Commerce, Energy Infrastructure Promotion & Development
LaVerne Kyriss – WAPA
Bevan Laing – Alberta Energy
Clint LeBeau - Council of Energy Resource Tribes
Ron Lehr – American Wind Energy Association
Steve Lindenberg – U.S. DOE EE
Rich Lindsay – CSG West
Doug Little – British Columbia Transmission Corporation
Les MacLaren – British Columbia Ministry of Energy, Mines & Petroleum Resources
Larry Mansueti – U.S. DOE OE
Greg Nelson – PNM Resources
Brad Nickell – WECC
Dianne R. Nielson – UT Governor’s Office
Amanda Ormond – Ormond Group LLC (*ZITA WG Co-Chair*)
Kevin Ritchie – Western Municipal Conference
Richard Smart – Community Hydropower Consulting
Paul Smith – Arizona Public Service (*Modeling WG Co-Chair*)
Lisa Szot – Renewable Energy Transmission Authority, NM (*ZITA WG Chair*)

Robert Taylor – Salt River Project

Jerry Vaninetti – TransElect (*Modeling WG Co-Chair*)

Brian Weber – PacifiCorp (*E&L WG Co-Chair*)

Observers:

Daniel Belin – Walsh Environmental

Cory Blair – E. ON Climate & Renewables

Jenny Bredt – RES Americas, Inc.

Bill Boyd – TransWest Express LLC

John Cupparo – PacifiCorp

Diana Enright – Oregon Department of Energy

Kevin Everett – Power Engineering, Inc.

Bart Jones – TransCanada

Claude Mindorff – Mainstream Renewable Power

Nathaniel Miullo – U.S. EPA

Peter Piliounis – Grasslands Renewable Energy LLC

Margaret Schaff – Schaff & Clark-Deschene LLC

Ronald Schellberg – Idaho Power Company

John Schnagl – DOE

Kip Sikes – Idaho Power Company

Elaine Sison-Lebrilla – Sacramento Municipal Utility District

Karen Smith – Argonne National Laboratory

Henry Tilghman – Vestas Americas

Craig Turchi – National Renewable Energy Lab

Robert Webster – Red Butte Energy

Steven White – KWRR 89.5 fm

Frank Wilkins – DOE

Technical Consultants:

Derek Djeu – Black & Veatch

David Hurlbut – National Renewable Energy Lab

Kevin Joyce – Black & Veatch

Ryan Pletka – Black & Veatch

Tim Mason – Black & Veatch

Andrew Mills – Lawrence Berkeley National Lab

Project Staff:

Tom Carr – WIEB

Linda Davis

Karen Deike

Rich Halvey

Pam Inmann

Doug Larson – WIEB

Shaun McGrath

Paul Orbuch – Orbuch Consulting LLC

Ted Rose – Consultant

Madeleine West

Abby Arnold, *Facilitator* – Kearns and West