

Western Renewable Energy Zones Project
Technical Committee Webcast
August 21, 2008
Summary and Next Steps

Introductions

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

Expected outcomes of the webcast:

- Approval of workplan, process diagram, premises document and outreach plan.
- Update on Work Groups; recent activities and upcoming issues for Technical Committee consideration.
- Review of scheduled and upcoming meetings, and key activities.
- Briefing on NREL GIS portal.

Approval of Workplan, Process Diagram and Premises Document

Rich Halvey provided a brief overview of the documents. The workplan had been updated from the last Technical Committee webcast when members commented on plans for individual work groups. The content of the work group plans had been updated, and several new sections were added to include project-wide plans, descriptions of Phases 1 – 4, a process for identifying REZs in Phase 1 and specific areas for coordination among work groups. The workplan provides guidance and reference on the project's process, methodology and purpose. Notable revisions to the workplan include clarifying that REZ identification is for the sole purpose of regional transmission planning and that REZ designation carries no legal or regulatory status. Additionally, language was added to highlight that the Phase 1 report will identify renewable resources outside of a REZ, as well as identify renewable resource development potential inside a REZ.

The process diagram is a visual representation of Phase 1 key milestones and deliverables outlined in the workplan. WGA's intent is for the process diagram to highlight these milestones, show how the work of the work groups is fed to the Technical Committee, and how ultimately the Technical Committee feeds recommendations to the Steering Committee. The diagram is also intended to show interactions between the three work groups on specific tasks and junctures in Phase 1 where outreach will occur at the work group and project levels.

Technical Committee members last reviewed the project premises document during the July webcast. There have been few changes made to this document, which is an effort to clarify WREZ treatment of several issues early on in the process. The Zone Identification and Technical Analysis (ZITA) work group has been working to identify definitions and treatment of hydro and biomass resources, one of the key points of discussion during the July Technical Committee webcast.

Discussion Items

Larry Mansueti, U.S. DOE, requested that additional language be added in the workplan to emphasize that the WREZ project will identify all commercial renewable resource potential and then aggregate the best potential for utility-scale renewable megawatts into identified REZs.

Shelley Murphy, British Columbia Ministry of Energy, Mines & Petroleum Resources, asked for an explanation of the terms “avoid, minimize and mitigate” in the Environment & Lands work group section of the workplan. Shaun McGrath explained that the terms come from WGA and USFWS policy and are meant to express three different levels of treatment for development based on environmental impacts. Avoid would require avoiding development in the area completely, minimize allows some development, and mitigate allows development along with implementation of certain measures to reduce impacts. Ms. Murphy also asked for an explanation of the agricultural land exclusion in the Environment & Lands work group section. The workplan language is intended to recommend that agricultural land designation not be used as a criterion for exclusion in the WREZ process. Adoption of the workplan by the Technical Committee constitutes an adoption of the recommendation for treatment of agricultural lands.

Lastly, Tom Darin, Western Resource Advocates, asked what role the Environment & Lands work group will plan in Phase 2 conceptual transmission planning. Rich Halvey confirmed that there would be a role for the Environmental and Lands Group in Phase II.

Relating to the process diagram, Steve Arenson asked if there is a final date on which the WGA is aiming to deliver a Phase 1 product to the Governors. Rich Halvey responded that WGA would certainly like a close to final product, if not a polished report, to present to the Governors at WGA’s Annual Meeting in June 2009. WGA is also aiming to have useful information for U.S. DOE officials at the end of 2008.

- ***Next Step:** WGA will work with Larry to make necessary edits to the workplan.*
- ***Next Step:** WGA will clarify language related to agricultural lands and E&L participation in Phase 2.*

***Action Item:** John Savage called for adoption of the documents with the above changes. The workplan, process diagram and premises document were approved by the Technical Committee.*

WREZ Outreach Plan

Karen Deike described the details of the outreach plan, explaining that the objectives of WREZ outreach is to keep stakeholders and diverse interests informed of developments throughout the process and make sure WREZ committee members have a thorough understanding of the views and concerns expressed by stakeholders and all interested parties. WGA will manage a website and targeted audience database that will be updated frequently. E-mail notices to the active WGA e-mail list serve will be sent out as key documents become available and public comments are being sought. WGA staff will rely heavily WREZ committee members to continue to populate the e-mail database with

stakeholders and constituents. On the WREZ website WGA will post a timeline and process for receiving, posting and synthesizing public comments once work product are available. Work groups will also conduct their own outreach related to specific activities and products.

Discussion Items

Ron Lehr, AWEA, highlighted the need to engage Phase 3 and 4 decision-makers at the current stage in the WREZ process to make sure they are aware and updated on WREZ activities. Engaging decision-makers, such as utility generation planners and resource planners, at this early stage of the process could allow them to provide valuable input on planned output for Phases 1 and 2. Steve Ellenbecker, Wyoming Governor's Office, also stressed the importance of outreach to load serving entities at this stage in the project. Doug Larson responded that the Generation and Transmission Modeling (GTM) work group has identified outreach to Phase 3 and 4 decision-makers and that he has briefed the WECC Board and all of its major Committees on the status of the WREZ project. Will Lutgen added that he will send WGA his database of over 100 western resource planning managers so that WGA can give them the opportunity to participate in WREZ.

Carl Zichella, Sierra Club, suggested that Technical Committee members be recruited to volunteer as outreach leaders for each respective stakeholder group. Leaders will serve as the point of contact for gathering public comments from their sector and will present summaries of the stakeholder comments to the Technical Committee during the public comment review period. WGA will staff the designated leaders.

- ***Next Step:*** *Will Lutgen will send WGA his contact list of resource planning managers and WGA will include them on their outreach distribution.*
- ***Next Step:*** *Technical Committee members notify WGA staff if you would like to become an outreach leader for your stakeholder group.*

Work Group Updates

The Technical Committee heard updates from co-chairs on each of the three work groups. Update reports addressed recent accomplishments and activities, outstanding issues and issues for Technical Committee consideration, and upcoming events.

ZITA Work Group

Lisa Szot, NM Renewable Energy Transmission Authority, presented the update on the ZITA work group. The ZITA work group has been holding weekly conference calls where each week they discuss criteria for a single resource and identify next steps for the discussion. Lisa outlined the criteria and next steps ZITA members have identified for each wind, CSP solar, PV solar, and geothermal. Resource definitions are being discussed for hydro, and biomass had not been discussed at the time of the Technical Committee webcast. ZITA recommended using a technology timeframe consideration of 10 – 15 years.¹ ZITA members and NREL also will be developing a protocol for how to handle confidential information as it comes up in the work group's conversations. Lastly, ZITA is considering how to incorporate data from developers in the zone criteria

¹ During the webcast this was presented as 15 – 20 years, however the suggestion by ZITA is 10 – 15 years for the technology timeframe.

discussions. Recommendations for how to handle confidential information and data from developers will be brought back to the Technical Committee for review. Next steps for the ZITA work group include fine tuning the criteria for each resource, discussing military and tribal land use issues in coordination with E&L, and planning for a September 22 – 23 work group meeting to review selected criteria and develop candidate study areas.

In response to questions from the Technical Committee, Lisa added that the technology timeframe ZITA is recommending is in line with the Western Climate Initiative and general RPS standards. Technical Committee members also asked about the hub height used for wind turbines. Dave Hurlbut, NREL, responded that a 50 meter hub height is being used for the supply curves because there is more data available at 50 meters than 100 meters. Additionally, the 100 meter data has not undergone extensive quality assurance and quality control, but as 100 meter data is validated it may be incorporated into the supply curves.

Action Item: *Technical Committee approved ZITA work group proposals.*

E&L Work Group

The E&L work group has recently confirmed work group membership, and membership of the Western Wildlife Habitat Council (WWHC) has also been established. Brian Weber, PacifiCorp, and Carl Zichella reported that E&L members have established a process and began efforts to identify land types where development is precluded by law. Once these land types are identified they will be sent to Black & Veatch consultants for mapping and inclusion into the candidate study areas. Also identified will be land types not necessarily precluded from development by law, but where other impediments to development exist and should be considered. Members are starting with a list of land types to consider, and this list will be enhanced with details from the NREL database. E&L will work with the WWHC to establish protocols, definitions and a format for key impacted wildlife and will identify sources for wildlife data outside of state agencies. A data request will be sent to state agencies and additional sources to collect information on the location of key impacted species.

E&L members requested that the Technical Committee consider a recommendation not to exclude lands based on agricultural designation. This proposal was approved by the Technical Committee during the workplan discussion.

Finally, the E&L work group plans to have a workshop in conjunction with the ZITA work group on September 22 – 23 in Denver, CO. They are holding bi-weekly conference calls Tuesday mornings at 9:30am MDT, and are scheduling a workshop between E&L and the WWHC in October.

Generation and Transmission Modeling (GTM) Work Group

Paul Smith, AZ Public Service, highlighted recent progress the GTM work group has made in creating three sub-groups to assist in model development. WGA staff and work group members have also been briefing transmission planners on WREZ efforts. GTM outlined several next steps in the model development process, including an early fall

meeting for the model development subgroup, and developing a list of model inputs needed from ZITA. GTM work group members asked the Technical Committee to approve a recommendation to enable the model to evaluate multiple REZs and load zones using the same transmission line. They also requested concurrence on a suggestion to calculate the distance between REZs and load zones using transmissions segments, not a straight line transmission.

Action Item: *Technical Committee approved GTM work group proposals.*

In response to members' questions Paul Smith added that the model will utilize existing corridors where transmission lines already exist and where projects have already been developed. Doug Larson reminded the Technical Committee that the purpose of the model is to calculate the distance between REZs and load, not to actually perform transmission routing. Additionally, Paul Smith mentioned that the model will not address the displacement of existing transmission by large-scale renewable development.

Upcoming WREZ Meetings

The Technical Committee will meet in-person October 15 – 16 in Denver, CO. Meeting details will be sent out to members shortly. The purpose of the meeting will be to discuss recommendations and analysis from the work groups including:

- E&L's proposed exclusion areas and ZITA's proposed candidate study areas;
- A presentation from Black & Veatch on inputs to the supply curve analysis; and
- A presentation from LBNL on the transmission model development.

Other key dates are:

- September 22 – 23: Joint ZITA/E&L workshop in Denver, CO. Purpose of workshop is for groups to share methodology and coordinate on candidate study areas and environmental exclusions.
- Early September: GTM Model Development Sub-Group meeting, location TBD.
- Mid-October: Joint E&L/WWHC workshop, location TBD.

Wrap-Up/Next Steps

Abby Arnold wrapped up the meeting and identified next steps. Technical Committee co-chairs Tom Darin and John Savage thanked members for their participation.

Briefing on NREL GIS Portal

Dave Hurlbut provided a briefing of NREL's GIS portal. The portal is a work in progress. Bug reports should be sent to Dave Hurlbut. The portal is available to the public and can be accessed with the following information:

<http://mercator.nrel.gov/wrez>

Username: wrez

Password: guest

The portal currently has some basic screens that include resource potential, slope exclusions for CSP solar, and some exclusions for wind. Each screen can be overlaid

onto a map of the U.S. with areas of Canada and Mexico also visible where data is available.

The side panel at the left shows all currently-added layers, which are organized in folders that can be expanded or collapsed. Example: open the “Solar Resources” folder, and the “Filtered DNI” subfolder inside it. Select “<2% Slope (CSP)” and the map will show all areas with a DNI greater than 6 kwh/m² on areas with slope less than 2%, filtering out areas that we assume can’t be developed.

To see the classes of areas that have been filtered out, open the “Exclusions” subfolder and select all of the layers it contains. The areas that appear on the map will fill many of the areas that are cut out of the filtered DNI layer.

Select the “Legend” tab at the top of the side panel, and you’ll see the values associated with each color on each layer.

Like GoogleMaps or any other common web-based interactive map, you can use the slider and navigation buttons in the upper left of the map field to zoom in and move around on the map. You can also click on the “Zoom” icon above the map and select an area with the mouse. Zooming in close will show in detail which areas have been excluded.

The folder labeled “WREZ Regions” will contain layers that show initial candidate study areas once they are defined by the ZITA work group. The layers currently in the folder are placeholders until study areas are defined; they are included for the purpose of helping users become familiar with how the portal works. The placeholder layers for bio, geothermal and solar are taken from various state resource assessments. The one for wind includes areas identified in state resource assessments, and some very heuristically drawn areas for windy areas not included in a state assessment. All will be substituted with layers representing work group decisions once those decisions are made.

Additional resource layers and land use restrictions from ZITA and E&L will be added once the data are put into GIS format. The current high-level exclusion categories will be disaggregated for more detailed view.

All Next Steps are identified below:

Task	Who	When	Status
Update workplan to make non-REZ resource identification explicit; clarify agricultural land exclusion; include environment language in Phase 2; and clarify wildlife assessment for Western Interconnection	WGA	ASAP	In Progress
Update outreach plan to include stakeholder leaders within the TC; specify outreach to transmission resource planners	WGA	ASAP	In Progress

and LSEs			
Edit and post on public website workplan, process diagram, premises document and outreach plan	WGA	By Sept 2	In Progress
Send meeting details for October 15 – 16 Technical Committee meeting in Denver, CO	WGA	By Sept 2	In progress
Send workplan comments – as they arise – to WGA	Technical Committee	As necessary	

Attachment A: Agenda

WREZ Technical Committee Webcast
Thursday, August 21, 1 – 3pm MDT

Proposed Agenda

* If during the webcast you want to comment, please indicate so on the phone. If you are not able to be heard, please e-mail aarnold@kearnswest.com and time permitting, she will call on you when she sees your request.

** If you have technical difficulties during the webcast please call or e-mail Chris McKinnon at 303-623-9378 x122 or cmck@westgov.org.

Time	Agenda Item	Lead
1:00 pm	Introductions/Roll Call	Abby Arnold
1:05 pm	Review Agenda and Expected Outcomes Expected outcomes: <ul style="list-style-type: none">- Approval of work plan, process diagram, premises document and outreach plan (<i>attached</i>)- Update on Work Groups; recent activities, upcoming issues for Technical Committee consideration- Review of schedule and key activities- Briefing on NREL GIS portal	Abby Arnold; Rich Halvey
1:10 pm	Review and Approve Work Plan, Process Diagram and Premises <ul style="list-style-type: none">- Review documents- Call for consensus	Rich Halvey; Madeleine West; Tom Darin and John Savage, Committee co-chairs
1:25 pm	Review and Approve Outreach Plan <ul style="list-style-type: none">- Review plan- Questions and Comments- Call for consensus	Karen Deike; Tom Darin and John Savage, Committee co-chairs
1:35 pm	Work Group Updates <i>Zone Identification and Technical Analysis Work Group (ZITA WG)</i> <ul style="list-style-type: none">- Recent activities/accomplishments- Outstanding issues, potential issues for Technical Committee to review- Upcoming Events- Questions and Comments	Amanda Ormond and Lisa Szot, co-chairs; Linda Davis
1:50 pm	<i>Environment and Lands Work Group (E&L WG)</i> <ul style="list-style-type: none">- Recent activities/accomplishments- Outstanding issues, potential issues for	Brian Weber and Carl Zichella, co-chairs; Shaun McGrath

	Technical Committee to review - Upcoming Events - Questions and Comments	
2:05 pm	<i>Generation and Transmission Modeling Work Group (GTM WG)</i> - Recent activities/accomplishments - Outstanding issues, potential issues for Technical Committee to review - Upcoming Events - Questions and Comments	Paul Smith and Jerry Vaninetti, co-chairs; Doug Larson
2:20 pm	Scheduling/Upcoming Events - Work Group Meetings - October in-person Technical Meeting	Rich Halvey
2:30 pm	Review Next Steps	Abby Arnold; Tom Darin and John Savage, Committee co-chairs
2:50 pm	Briefing on NREL's GIS Portal for WREZ - Application of GIS portal	Dave Hurlbut, NREL
3:00 pm	ADJOURN	

Attachment B: Participants' List

Western Renewable Energy Zone Project Technical Committee Webcast August 21, 2008

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
Dana Cabbell – Southern California Edison
Alex Daue *for Pam Eaton* – The Wilderness Society (*Environment & Lands WG Co-chair*)
Steve Ellenbecker – WY Governor's Office
Katherine Gensler – Solar Energy Industries Association
Jeff Hein – CO Public Utilities Commission
Greg Jergeson – MT Public Service Commission
Jeff Leahey *for Julie Keil* – National Hydropower Association
LaVerne Kyriss – WAPA
Ron Lehr – American Wind Energy Association
Steve Lindenberg – U.S. DOE EE
Ed Higginbottom *for Doug Little* – BC Transmission Corporation
Will Lutgen – NorthWest Public Power Association
Shelley Murphy *for Les MacLaren* – British Columbia Ministry of Energy, Mines & Petroleum Resources
Larry Mansueti – U.S. DOE OE
Bevan Laing *for Ian McKay* – Alberta Energy
Brad Nickell – WECC
Kevin Ritchie – Western Municipal Conference
Howard Schwartz – WA Department of Community, Trade and Economic Development
Richard Smart – Community Hydropower Consulting
Paul Smith, AZ Public Service (*Modeling Work WG Co-Chair*)
Lisa Szot – Renewable Energy Transmission Authority, NM (*ZITA WG Chair*)
Robert Taylor – Salt River Project
Rebecca Wagner – NV Public Utilities Commission
Brian Weber – PacifiCorp (*E&L WG Co-Chair*)
Jessica Youle – AZ Department of Commerce
Carl Zichella, Sierra Club

Alternates Present In Addition To Members:

Jim Byrne – Western Grid Group
Shayleah Labray – PacifiCorp
Wendy Wallace – U.S. DOE EE

DOE/NREL Staff:

David Hurlbut
Downey Palmer

WGA Staff:

Linda Davis
Karen Deike
Rich Halvey
Pam Inmann
Doug Larson
Shaun McGrath
Madeleine West
Abby Arnold, *Facilitator*, Kearns and West.