

## Western Governors' Association

### Western Renewable Energy Zones Zone Identification and Technical Analysis (ZITA) Working Group July 17, 2008 9:30 – 11:00 MDT

## CALL SUMMARY

#### Decisions & Next Steps

- David Hurlbut will map out zones based on Class 3 wind and higher and 1,000 MW density, to determine which areas are concentrated enough to have a higher density of wind resources than other areas, and large enough to merit regional transmission intersection. The Working Group will consider that scenario and move on from there.
- For now, the group will consider the strongest density, resource by resource. Areas with weak resources could overlap with another resource (e.g. solar, geothermal), and remain competitive with a combined threshold and resource diversity. The best resources should first be identified, then evaluated next to other resources. The group will start with broad criteria and narrow them down.
- WREZ goals are to both support regional transmission, and to define zones that support state transmission. The group will start with broad criteria and narrow them down.
- Class 3 wind is a sufficient starting point and would provide for flexibility. No buffer is needed.
- 1,000 MW density is an approachable target as the criteria are applied.
- 50m hub height data will be used for consistency's sake.
- From now on, call summaries will include decisions and next steps, as well as action items, in the front of the document. The list of participants is moved to the back of the document. This format will be suggested to other Working Groups and Committees, for consistency.

#### Action Items

1. David Hurlbut and Black & Veatch to develop and provide to the group a set of recommended zones based on the preliminary criteria defined by the Working Group, to which further criteria can be applied.
2. Working Group members to fill out the scheduling matrix to indicate their availability for calls (<http://www.doodle.ch/participation.html?pollId=z4czir3bbndbh65m>).
3. Lisa and Amanda to discuss what documents are to be posted on the WGA website.

#### Review of NREL 'Wind Study Areas' Memo

- David Hurlbut email to the Working Group a memo that describes the criteria discussed on the previous Working Group call, with maps of Class 3 and Class 4 wind areas. The memo is a first screening for the potential study areas. The color codes reflect different wind classes.
- David specified that Canada has different color codes, reflected in the legend. Wind density was used as a criterion for pulling out the equivalent areas in the Canadian WEA maps. U.S. and Canadian data is juxtaposed.
- The WREZ process should not distinguish every area of potential, viable renewable energy resource. Zones must meet stringent density and capacity requirements, but the Working Group has room to explore all zones of potential in the initial study stage. **For now, the group will**

**consider the strongest density, resource by resource. Areas with weak resources could overlap with another resource (e.g. solar, geothermal), and remain competitive with a combined threshold and resource diversity. The best resources should first be identified, then evaluated next to other resources. The group will start with broad criteria and narrow them down.**

- The group discussed whether there should be a buffer around Class 3 wind. The study's main concern is to ensure that the preliminary analysis does not unnecessarily drop off viable, developable areas. Buffers are necessary around Class 4 wind to avoid excluding certain areas of viability and to ensure that an appropriate area is covered. David indicated that as the group considers Class 3 resources, some could areas could be dropped, depending on their viability in terms of other criteria. Therefore, even if Class 4 wind is desired, Class 3 wind will provide a natural buffer around Class 4 wind to account for all potential resources. **Class 3 wind is a sufficient starting point and would provide for flexibility. No buffer is needed.**
- Dave raised the issue of dealing with the small pockets of Class 3 and Class 4 wind. Should they be dropped, or aggregated into a larger study area? It is impractical to treat each small area as a study zone given limited resources. Two parameters can provide a way to further narrow down the areas. First, is there a minimum total capacity (e.g. 1,000 MW) of Class 3 wind or higher in the zone? Second is there at least 50% density Class 3 wind or higher in the zone?
- The MW that the land can generate will be calculated by the NREL standard of how many wind turbines can be applied per square kilometer. Wind class is not considered when spacing, but could be, once the area is known. Different spacing parameters can be applied to each class. **1,000 MW density is an approachable target as the criteria are applied.**
- **50m hub height data will be used for consistency's sake.** Where there is 100m hub height data, that could also be used.
- What criteria should be group start with? How should the initial study areas be drawn? David's memo, coupled with the wind zones that NV identified, are sufficient for an initial stage analysis to establish threshold criteria. The criteria will be specifically defined, and not referred to as the NV criteria. While it was suggested that David determine preliminary zones criteria, he would prefer will make calculations based on the NV analysis of minimum total capacity contained in a zone. **David will map out zones based on Class 3 wind and higher and 1,000 MW density, to determine which areas are concentrated enough to have a higher density of wind resources than other areas, and large enough to merit regional transmission intersection. The Working Group will consider that scenario and move on from there.**
- The group needs to continually consider economic criteria in connecting areas. It was suggested that supply/cost curves be included as part of the analysis to allow for lower capacities to be removed from consideration if they do not make economic sense.
- Ryan Pletka sent an email with recommendations for criteria screening from Black & Veatch, as they were applied to the CA RETI process. Ryan will work with David to put together proposed areas and criteria.

#### **Further Discussion Points**

- Dora Yen-Nakafuji updated the criteria matrix, based on the previous Working Group call. Dora's outline addresses the base layer that will be used.
- Resources that the ZITA Working Group will consider:
  - The three resources to be discussed and evaluated are wind, solar, and geothermal. Those three resources are the primary resources which will drive the process and around which transmission will be planned.
  - WGA will ensure that the adequate experts are sought to participate on resource calls. For example, Mark Mehos (Concentrating Solar Power, NREL) will be asked to participate on solar calls.

- Biomass and small hydro will also be considered, but the zones will not be defined by those two resources. However, a biomass and small hydro overlay will be added to the candidate zones defined by solar, wind and geothermal to solidify the resources in those areas. Small hydro and biomass are small resources, and don't require development and transmission.
- Future Working Group discussions:
  - The group agreed that the next Working Group call will cover solar, then geothermal, then wind again. This will give the technical experts enough time in between calls to develop the materials needed for review for each resource.
  - The next call will likely be the week of 7/21, then geothermal the week of 7/28, and wind the week of 8/4. Two calls will be required to determine preliminary criteria for solar.
  - Black & Veatch will develop criteria for solar. Linda will work with Ryan Pletka and Mark Nehos to determine whether there are straw man solar criteria that the Working Group could use.
  - Splitting the resources will not cause confusion, as the technologies are independent from each other and resource criteria can be developed in parallel to other resources.
- The group agreed that the methodologies used need to be the same for each resource. The Working Group will develop general criteria for each resource, then ask which criteria would be applied and why, and apply those criteria to the resource, for each of the zones.
- **WREZ goals are to both support regional transmission, and to define zones that support state transmission.**
- The Technical Committee will be briefed on the Working Group Work Plans on July 18. Comments will be solicited, after which the plans will be refined and integrated, and sent back to the Working Groups.
- WGA staff is developing a schedule to show where tasks fall along a timeline.
- Abby indicated that in this process, the distinction needs to be clear between wind resource data and zone development.

### Administrative Items

- Linda Davis emailed to the Working Group a scheduling tool to determine best times for upcoming ZITA Working Group call times. The current call time (Thursdays at 9:30 MDT) conflicts with CA RETI calls. **Linda asked that Working Group members who have not already done so please fill out the scheduling matrix to indicate their availability.**
- Linda will keep the group posted on what the new call time is. The intent is to distribute a schedule at least a week in advance in order for participants to plan accordingly.

### Participants

Steve Arenson	OSD Sustainability Office
Charles Benjamin	Western Resource Advocates
Jason Berry	Utah State Energy Program
Cory Blair	E.ON Climate & Renewables North America Inc.
Linda Davis	Western Governors' Association
Adam Hanna	Black and Veatch
David Hurlbut	National Renewable Energy Lab
???Dennis Knoll	Black and Veatch
Mark Lausten	DOE Solar Program, SENTECH
Ron Lehr	AWEA
Greg Nelson	PNM
Amanda Ormond	Ormond Group LLC
Ryan Pletka	Black and Veatch

Elaine Sison-Lebrilla

Sacramento Municipal Utility District

**Facilitation**

Abby Arnold

Morgan Poncelet

Kearns & West (Facilitator)

Kearns & West (Recorder)