

**Western Resource Advocates • Natural Resources Defense Council •
Interwest Energy Alliance • The Wilderness Society • Western Grid Group**

**Group Comments on Western Area Power Administration's Renewable
Energy Transmission Program**

April 1, 2009

I. Introduction

On behalf of Western Resource Advocates, Natural Resources Defense Council, Interwest Energy Alliance, The Wilderness Society and Western Grid Group, please accept the following comments in response to Western Area Power Administration's ("Western") Notice of Proposed Program and Request for Public Comments regarding the implementation of Section 402 of the American Recovery and Reinvestment Act of 2009. 74 Fed. Reg. 9391—9393 (Mar. 4, 2009). The 2009 Recovery Act specifically provides \$3.25 billion in new borrowing authority for Western with the explicit purpose of, "delivering or facilitating the delivery of power generated by renewable energy resources." Recovery Act of 2009, Section 402.

Overall, we commend Congress, the Obama Administration and Western for developing this exciting new program to develop smartly planned transmission to facilitate the development and delivery of clean and renewable energy resources in Western's service territory. The western U.S. – indeed the nation – is at a critical juncture in terms of developing an energy policy based on significantly expanding clean, renewable energy resources in the electricity and transportation sectors. This exciting transformation will stimulate and permanently rebuild our economy, help secure our country's energy independence and address growing concerns about air quality and climate change.

Our comments are focused on implementing this new program within the Western Interconnection, where Western has 10,000 miles of high-voltage transmission lines and wholesale electricity customers in the states of Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada and California. Clearly, given its transmission assets and customer base, as well as being one of two federal Power Marketing Administrations within the Western Interconnection, Western is well-positioned with this new program to charter a new course and take a leadership role in significantly expanding renewable energy development in the West.

As a preliminary matter, we suggest a new name for this program. The new direction for Western within this program is precisely focused on facilitating the development and delivery of *renewable* energy resources. However, the word "renewable" is conspicuously absent from Western's proposed title for the new program, "Transmission Infrastructure Program." (74 Fed. Reg. at 9391). In addition, as discussed below, there are many reforms related to transmission policies for renewable energy that extend beyond the actual "infrastructure" component. Accordingly, we suggest at the very beginning that Western adopt the following name: "Renewable Energy Transmission Program." This is more than semantics; this new program is entirely about renewable energy transmission and in order to charter a new course in this direction with the proper focus, the name must reflect the program's vision and purpose.

II. Federal Register Notice – Proposed Projects and Proposed Program

We are concerned that while developing the important guidelines and parameters for implementing this new program, Western is at the same time soliciting “Requests for Interest” (RFI). Soliciting RFIs that identify a “proposed transmission project” for Western to “study, facilitate, finance, plan, operate, maintain or construct” before actually developing a program that, among other things, will eventually have “criteria” to evaluate proposed projects is putting the cart before the horse. In addition, at the public meeting on March 23, 2009, Western officials stated both on and off the record that this new program for renewable energy transmission is permanent – which suggests that soliciting RFIs with the same deadline for submitting comments on the actual program guideline is premature and unnecessary.

While we understand that this program is part of a stimulus package, we suggest that Western first develop the program and then request project proposals in a timely fashion. At the very least, all responses to the Federal Register RFI should be held in abeyance until the program is established. Simultaneously processing information on both the proposed program and potential projects to be approved by this new authority may actually delay the approval of the initial wave of projects, as well as the distinct possibility of having project proposals influence the development of the program itself. Ultimately, a well-designed renewable energy transmission program in place will likely result in Western being able to quickly evaluate and approve projects in the future.

III. Program Process and Overarching Comments

A. Analyzing Environmental Impacts and Open, Transparent Decision-Making

At the outset, we question whether the development of this program is properly excluded from environmental review. This is an incredibly important program, and to be sure, its implementation will have environmental impacts – direct impacts from project siting and indirect impacts from facilitated generation projects, including emissions from any facilitated fossil fuel generation. A programmatic environmental impact statement at this stage is most likely the best way to assess, analyze and develop mitigation strategies for cumulative impacts, as well as ensure broad stakeholder participation.

Another question is to what extent Western is adhering to Administrative Procedure Act’s rulemaking requirements. The APA defines a rule as “the whole or part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy or describing the organization, procedure, or practice requirements of an agency.” Even under the more informal “notice and comment” provisions of the APA, we are concerned that there is very little information for the public to assess, analyze and comment on regarding the “proposed program.” In fact, the Federal Register notice, as well as the materials presented at the hearing on March 23, 2009, merely outline the proposed program’s major concepts, without any substantive information. In essence, therefore, at this stage in the game there is no concrete proposal for the public to comment on. This is troubling because at the hearing on March 23, 2009, Western officials stated that next steps after the April 3, 2009, deadline for public comment on the skeleton outline, will be the publication of a “final” program in the Federal Register that will for the first time contain substantive information on the program. To comply with the APA, Western should first develop the substance of a draft program (instead

of a draft outline) for public comment that includes detailed information on the program. In this case, after Western collects, considers and responds to the public comments filed by April 3, 2009, it must then publish a draft program for public comment and review, and then proceed to developing a final rule/program.

In terms of public process, we add that Western's approach thus far seems very rigid, overly formal and therefore not conducive to full and robust public participation. Indeed, at the one and only hearing on March 23, 2009, Western's strict adherence to the formality of the APA precluded the opportunity to ask substantive questions of Western's transmission experts. In addition, many of the meeting's participants traveled from across the country and region to attend and meaningfully participate – their expertise was entirely untapped. Indeed, Western seemed to put up the APA as “wall” – the FR notice and rigid “no, we won't answer questions” public meeting format gave the impression that Western is merely crossing its “T”s and dotting its “I”s, in terms of public participation, and nothing more. This creates the perception that public comment on this program is mere formality and seemingly a nuisance. This atmosphere can lead to stifling the full participation and creativity of very interested stakeholders as Western develops this exciting new program to facilitate renewable energy development. We suggest that Western develop a more inviting public comment process and borrow concepts that the Western Governors are using in their WREZ initiative.

B. Interconnection-wide Regional Transmission Planning

Western's new Renewable Energy Transmission Program should be part of an interconnection-wide, comprehensive transmission planning process. Both current legislation and present momentum in both interconnections is for regional and comprehensive transmission planning – indeed, the Department of Energy has funds from the Recovery Act of 2009 for this purpose and will soon be soliciting a proposal in the Western Interconnection for a Regional Planning Entity. Key elements of a Western Interconnection Comprehensive Transmission Plan will most likely include: (1) a broad range of scenarios for future Western Interconnection energy demand, how these scenarios will be met from various resources including load-side resources, and assessing the tradeoffs among competing values; (2) a transmission network designed to optimize each future scenario including the associated transmission requirements; (3) developing implementation plans for the different scenarios that includes and builds support from a wide-range of stakeholders; and (4) a joint WGA-WECC process that includes all stakeholder groups to review draft regional transmission plans for the different future scenarios.

We suggest that Western should lead in this effort, given its federal responsibilities, transmission holdings, customer base, hydro resources and this new borrowing authority to facilitate renewable energy. In addition, we suggest that Western become more engaged in existing regional and state transmission planning venues and forums – not only to strengthen the participation and knowledge in these processes, but particularly as all of these will necessarily be integral parts of upcoming regional and comprehensive planning efforts. These processes and venues include: (1) WECC regional and sub-regional planning entities (i.e., TEPPC, WestConnect, SWAT, CCPG, NTTG, Columbia Grid, etc.); (2) the WGA WREZ process (in addition to the technical committee, the Generation and Transmission Modeling work group); (3) developing, improving and prioritizing DOE/DOI West-Wide and National Interest Electric Transmission Corridors; (4) state Public Utility Commission approvals and planning efforts (e.g., Colorado's PUC transmission dockets and workshops); (5) state renewable energy zone and

transmission identification processes (e.g., the California Renewable Energy Transmission Initiative (RETI), Colorado SB 100 efforts, the Nevada Renewable Energy Transmission Access Advisory Committee (RETAAC), the Arizona Renewable Resources Transmission Identification Subcommittee (ARRTIS of SWAT's RTTF); and (6) utility resource and transmission planning efforts, including major interstate transmission proposals.

IV. Substantive Comments on Western's Renewable Energy Transmission Program

A. The Program Must Facilitate Renewable Energy

It is Western's responsibility to develop procedures and mechanisms to ensure that program expenditures facilitate renewable energy resources. The direction from congress is clearly that new transmission investments under this program facilitate the clean and renewable energy resources, a mission that Western has served for hydro electricity. Because the current policy direction in this Administration and Congress is for the development of clean and renewable energy resources in order to stimulate and rebuild the economy, secure energy independence and address air quality/climate change concerns, Western's Renewable Energy Transmission Program must clearly state and enforce that new and upgraded power lines will be limited to low-carbon resources, with majority¹ of new line capacity be dedicated to clean, RE sources such as wind, solar and geothermal.

One method to accomplish this is developing and implementing a performance standard that limits all generation interconnecting to new or upgraded power lines facilitated by this program to 1,100 pds of CO₂/MW-hr. We suggest two entry points for measuring/enforcing compliance. The first is reviewing Power Purchase Agreements, open season results, etc., at the point in time when the line is planned, approved, permitted and constructed. At this "first cut" it is relatively easy to determine and regulate what is interconnecting at this point in time because new generation contracts in some form are financially necessary to justify the capital costs of major high-voltage transmission investments. The second entry point relates to the downstream potential transfer of transmission contractual rights. The new program must include a system to determine whether the additional capacity from one of the new or upgraded lines is facilitating low-carbon resources. This could be measured on an annual basis within a control area. Western's engineers and transmission specialists may develop this system through e-tags and other information to determine generation sources that can be obtained through tracing the transmission contracts.

Finally, we note that Western can help ensure that renewable energy generation interconnects with these lines by including in the new program the authority for Western to directly purchase renewable energy resources on behalf of its customers under a long-term PPA rather than only allowing it to purchase replacement power when water levels are not adequate to meet the Western's allocation needs. Purchasing cost competitive wind, solar or geothermal under a 20-25 year contract will also stabilize the price of electricity for Western customers. We also encourage Western to conduct customer Deliberative Polls™ among its electricity customers, a technique that has proven to be effective in increasing the purchase and development of renewable energy generation.

¹ Natural gas generation may be necessary for load balancing and technical requirements (e.g., voltage stability).

B. Renewable Energy Integration Issues

In the near-term, Western should create a stakeholder committee to review Western's present business and operating practices and develop recommendations to increase the amount of naturally variable generation (wind and solar) and address much-needed reform in terms of the economic and technical aspects of integrating these resources and handling integrated resource planning. Recommendations should be developed within 6 months. Western should also help develop a Wind Integration Action Plan for the Western Interconnection within the next 6-12 months to address the four main areas below. The Western Interconnection Wind Integration Action Plan should be developed by a stakeholder committee and also reviewed in public forum.

In the short-term, the following items are "shovel ready initiatives" that could be implemented quickly to maximize the use of tax payer money in a way that also provides the greatest impact on increasing renewable energy integration. In turn, these initiatives will stimulate the construction of new wind farms and other renewable energy sources that will pump billions of dollars into the economy from construction, manufacturing and related activities. Western's current project list should be screened to identify where currently planned projects could serve renewable developments. Further, unlike the construction of new transmission facilities that will require time to study, design, procure and construct, several of the following initiatives can be implemented very quickly with maximum impact.

1. Tariff and Queue Reform

Western should develop conditional firm service, redispatch, expand long term, non-firm and add transmission products to facilitate renewable energy delivery. Overall, we recommend that Western implement transmission tariffs on new projects that are competitive with tariffs charged by other transmission-owning entities in the same region. If prohibitive tariffs are charged, new lines constructed by Western may be under-utilized for transmitting power to markets. Initially, Western should eliminate pan caked transmission rates between Western control areas. Further, Western should streamline interconnection queues by incorporating variations and flexibility in wind facility design into its queue study process, rather than restarting studies if a wind facility makes design changes that do not substantially impact the interconnection study process. Western should also consider class interconnection studies, grouping interconnection requests by time and location so as to use study resources most effectively. Western should also allow developers to use third-party contractors. To accomplish all of these reforms, Western should consider adding transmission planning staff with appropriate levels of technical expertise.

2. Line Ratings and New Technologies

Western should implement dynamic and real-time line rating. Western's transmission system is located in some of the best places in the western U.S. for solar and wind resources. Western can take advantage of this fact by varying ratings of transmission lines in real time – this would allow for more power to be transmitted across Western's existing transmission assets. In addition, we ask Western to consider the following:

- Installing dynamic line rating devices (such as the CAT1) on congested lines.
- Increased SCADA monitoring to allow operation closer to physical limits.
- Reconductoring congested lines with advanced conductors, including composite conductors and other technologies, to increase continuous and contingency ratings.
- Using FACTS devices for both real and reactive power control to increase stability and/or control flows that will result in additional overall throughput and reduced congestion.

3. Forecasting and Scheduling

Forecasting the output of variable generation is critical to bulk power system reliability in order to ensure that adequate resources are available for ancillary services and ramping requirements. The integration of accurate rapid-update wind generation forecasts into system operating procedures can more effectively address operational concerns, allowing for greater integration of variable resources. We offer the following specific suggestions for consideration:

- Central forecasts for the entire wind fleet can be useful to power system operators and can support multiple forecasts for individual wind projects.
- Utilize both wind event and hourly-energy forecasting.
- Western should consider and examine existing forecasting models, such as in the NYISO.
- Allow monthly imbalance netting for participating wind plants.

Western should develop dynamic scheduling with flexible generators outside the balancing area. In addition, Western should implement sub-hourly energy scheduling between balancing areas – with all generators within the balancing area and for independent power producers as well as owned generation. Western should consider sub-hourly energy markets.

4. Ancillary Services, Load Balancing and Integration Costs

Western must develop a comprehensive and cost-effective program for ancillary services to help integrate renewable energy sources. To help in this effort, we encourage Western to exchange wind integration expert staff with the Department of Energy, including the National Renewable Energy Laboratory and experts such as Michael Milligan,² to provide technical assistance on integration issues. We also suggest that Western join the Utility Wind Integration Group (UWIG) to gain more expertise and familiarity with integrating large-scale wind and renewable projects. We offer the additional items to consider for this component of Western's new Renewable Energy Transmission Program.

- Western should promote coordinated regional grid operations. The Western Governors have called for this type of consolidation, and Western should lead the way. A larger control area would allow for better utilization of ancillary services

² See, e.g., B. Kirby, M. Milligan and Y. Wan, *Cost-Causation-Based Tariffs for Wind Ancillary Service Impacts* (June 2006), available at www.nrel.gov/docs/fy06osti/40073.pdf.

which in turn would allow for greater variable resource integration. This can be achieved by virtual or actual control area consolidation to provide flexibility to balance the system at lowest cost/least environmental impact.

- Example: The WACM control area doesn't contain enough generation to integrate wind or solar. Merging WACM into other Western control areas (physically or virtually) will save customers money as more renewables are added to the system.
- Control area consolidation also has the benefit of aggregating diverse variable resources over broader areas, reducing the impact to the Control Area and reducing the reserve obligation.
- Utilize Western's hydro resources to provide regulation services.
- Western should support flexible energy solutions including storage options such as the development of pumped or compressed air storage to support wind integration.
- Western can provide access to responsive generation by encouraging the creation of ancillary service markets or by purchasing third-party supplied ancillary services from any generator willing and able to sell, including variable generators.
- Western should participate in ACE diversity interchange as a move towards sharing/consolidating resources and expanding the reserve sharing pool to increase the availability of responsive generation and load.
- Load response
 - Seek load response from residential, commercial, and industrial loads
 - Seek load response in all time frames: fast reserves to multi-hour response
- Western should change its WACM regulation rate and identify/purchase maneuverable generation to provide load following.
- Define and purchase 10 and 30 minute non-spinning operating reserves (from load as well as generation) for response to variable generation events.
- Adopting the imbalance service and other provisions of the pro-forma OATT developed by FERC.
- In the near term, Western can develop special protection/remedial action schemes to support the immediate interconnection of renewable resources where practicable.
- Naturally variable generation does not require around the clock firm transmission; to take advantage of this fact, Western should take the lead from BPA and develop and offer conditional firm transmission service. In developing this product, we encourage Western to develop case studies and make them available where its long term, non-firm service is in place to support a broader acceptance of conditional firm transmission service, particularly as a phase-in strategy to new transmission build out, as intended by FERC. This product would allow renewable energy developers to better utilize existing capacity on Western's transmission system. Western should quantify what percentage of time (e.g., 5-7%) that renewable energy would need to be curtailed due to reliability issues on the transmission system so that developers can figure this into their financing. This will facilitate early additions of new MW of renewable energy onto the system.

C. Ensuring Lands and Wildlife Protections

The exciting transformation to renewable energy resources in the West must ensure adequate safeguards for our showcase lands, wildlife species and other natural resources. This includes impacts from generation as well as supporting transmission. Western's new program must develop guidelines and criteria to: (a) exclude from development certain public lands recognized for scenic, natural, recreational, cultural or historic resources; then (b) minimize impacts to affected public lands, wildlife and other resources through the adoption of Best Management Practices for siting, construction, ongoing maintenance and reclamation; and then (c) mitigate impacts by identifying, prioritizing and acquiring high-value conservation lands.

For the "exclude" category, we recommend that Western establish (in consultation with Federal and State land agencies, environmental groups, wind and solar industry representatives, and Indian tribes) appropriate areas to be excluded from consideration for the construction of facilities, including (at a minimum):

1. National parks, national marine sanctuaries, reserves, recreation areas, and other similar units of the National Park System;
2. Designated wilderness, designated wilderness study areas, and other areas managed for wilderness characteristics;
3. National historic sites and historic parks;
4. Inventoried roadless areas and significant non-inventoried roadless areas within the National Forest System;
5. BLM's National Landscape Conservation System;
6. National monuments;
7. National conservation areas;
8. National wildlife refuges and areas of critical environmental concern;
9. National historic and national scenic trails;
10. Areas designated as critical habitat;
11. National wild, scenic, and recreational rivers;
12. Any area in which Federal law prohibits energy development, or that the Federal agency or official exercising authority over the area exempts from inclusion in a national renewable energy zone through land use, planning, or other public process; and
13. Any area in which applicable State law enacted prior to the date of enactment of the Recovery Act of 2009 prohibits energy development.

D. Project Evaluation Criteria

We applaud Western for developing criteria for evaluating proposals to ensure that they facilitate the delivery of renewable energy, are in the public interest, promote system reliability, and are likely to meet repayment obligations. (74 Fed. Reg. at 9393). Although \$3.25 billion in borrowing authority is significant, when single-circuit 500 kV can cost close to \$2 million per

circuit mile, Western needs to prioritize the low hanging fruit options to increase transfer capacity and access for renewable energy resources. In this regard, Western should consider prioritizing projects for approval that:

1. Upgrade existing grid assets (including Western's) where the line will meet renewable energy criteria. Western has 17,000 miles of existing high-voltage grid, most at 230 kV – this means that there exist opportunities for upgrades in voltage class, high efficiency conductors and other technological solutions. Western should prioritize these types of projects for both economic reasons as well as environmental – as these types of projects will keep impacts to already-disturbed corridors.
 2. Co-locate new power lines with existing and developed linear features including power line, telecommunication, pipeline, transportation and railroad rights-of-way.
 3. Facilitate renewable energy from regional (e.g., WGA WREZs) and state REZ processes. Prioritizing projects that correlate to the WGA WREZ and similar processes will help ensure that the best economic resources in areas with the least environmental conflict are developed and delivered to market. In this regard, Western should also examine opportunities to super-size transmission capacity into well-established, high resource, low environmental conflict areas so we can avoid multiple corridors into these areas as generation expands over time. An example is that a double circuit 230 kV line is proposed to deliver solar resources from the San Luis Valley in Colorado to the Walsenburg substation. Could Western's participation make it a 345 kV line?
 4. Implement transmission strategies from a list of deferred and already planned maintenance projects identified by Western that rebuild, repair, or replace system assets that also help renewable energy.
 5. Leverage opportunities where incremental grid investments can greatly enhance renewable energy delivery by the strategic interconnection of substations. Examples include a generator connection to the Peetz Table wind resource that is ten miles from the Archer substation and connecting the eastern terminus of Gateway West (Aeolus) to the northern end of the Wyoming Colorado Intertie.
 6. Prioritize transmission projects based on population growth statistics to ensure that areas that will need new generation to serve load growth have adequate transmission to access renewable energy generation areas.
- E. Program Implementation Authority

In setting up this new program, Western should carefully develop a decision making structure and process. For example, how will competing and even non-competing project proposals be compared and selected? How will public review periods for the selection of project proposals be administered, in order for stakeholders to have an opportunity to review a list of projects proposed for selection (after internal evaluation by the program implementation team) to provide

feedback about how proposed projects measure up against established program criteria? How can this be done while also protecting project proponents' confidentiality? How will a process be developed that is both is robust but timely? For all of these concerns, Western should establish an advisory board for project evaluation and program decision making.

V. Conclusion

We are at a critical juncture in America in terms of energy policy. Congress and the current administration have made it a priority to develop and deliver our country's vast supply of clean, renewable energy resources in order to rebuild our manufacturing base and high-tech economy, gain energy independence and address climate change concerns. With its new Renewable Energy Transmission Program, new loaning authority and existing transmission assets and customer base in the Western Interconnection, Western can and should play a pivotal and leadership role in this exciting transformation. Accordingly, Western must shape and implement this new program entirely around facilitating clean, renewable energy resources in the region. We appreciate the opportunity to comment on this new program and we look forward to working with Western to incorporating our concerns and major principles in order to develop a workable program with full stakeholder participation and buy-in.

Sincerely,

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