

August 4, 2008

## **CONTRIBUTION TO THE RECIRCULATED DRAFT EIR FOR THE SUNRISE POWERLINK**

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### **BACKGROUND**

The Sunrise Powerlink Draft EIR has been recirculated for comments from the public. The primary reason for this additional review is that the La Rumorosa Wind Energy Project (RWEPP) has been increased in capacity to 1250 MW, and it is now claimed that the Sunrise Powerlink is necessary to accommodate that power. The applicant claims that they intend to place 500 to 600 large (2.1 MW) wind turbines on an area of 7,500 acres, just south of the border near the town of Jacumba in the US and La Rumorosa in Mexico.

### **COMMENTS AND QUESTIONS**

As described below, it is irrational to place 500 large turbines in the 7,500 acre area.

According to their document:

The turbines would be mounted on enclosed tubular towers. The total height of the turbine and tower structures would likely range from 380 to 440 feet depending on the turbine size, elevation, and topography at each tower location. The rotor-diameter would be approximately 300 feet for a 2 MW turbine and up to 340 feet for a 3.6 MW turbine.

Siting and spacing of wind turbines depends on site-specific conditions that are influenced by terrain and wind conditions. The ultimate location of turbines would be determined after a detailed analysis of the terrain and wind in the La Rumorosa areas. Turbines would likely be located on ridge-tops and in some areas with sufficient upwind space, multiple rows of turbines could be used. The wake of upwind turbines can substantially diminish the velocity and increase the turbulence at downwind turbines. Where the rows are sufficiently spaced, the losses can be minimized. This project would space the turbines in rows between 8 to 10 rotor-diameters apart.

It is clear from this description that they have not identified the "ridge tops" where the turbines can be located.

- Using their figures and assuming nearly optimal packing, the turbines must be separated by about 300 ft x 10 = 3000 ft.
- Assuming five diameter spacing as optimal between each turbine, that is 1500 ft.
- Total area for a single turbine is 3000 x 1500 ft = 102 acres.
- This correlates with the separation needed in other wind farms.
  - Biglow Canyon Wind Farm in Sherman County, Oregon is designed for a 450 MW capacity with 225 Turbines over 25,000 acres. The space required for each turbine is 111 acres.
  - Desert Sky Wind Farm, 160 MW using 107 turbines on 9600 acres, or 90 acres each.
  - Fowler Ridge Wind Farm, 750 MW using 222 1.5MW turbines over 38,400 acres, or 173 acres each. Minimum spacing by design is 58 to 74 acres, but terrain is similar to that in the La Rumarosa area and as a results, density was limited to one turbine every 173 acres. (When completed, this will be the largest wind farm in the nation.)
  - Horse Hollow Wind Energy Center in Nolan County, Texas, 736 MW using 421 1.5MW and 2.3 MW turbines over 47,000 acres, or 111 acres each. This is currently, the largest wind farm in the US

- and the largest in the world
- London Array wind farm, 1000 MW using 341 3MW and 7MW turbines, located offshore over 57,600 acres (90 square miles), or 169 acres each. There is no terrain issues on this project.
- whereas the RWEF is supposed to take only 7,500 acres (less than 12 square miles) implying only 15 acres per turbine.
- This proposal would be one of the largest wind farms on earth, and would be unique in that it is able to very tightly space the wind turbines. Given the terrain of that area, it is unlikely that they can site 500 turbines within a 12 square mile area.
- According to general guidelines, “Where land area is sufficient, turbines are spaced three to five rotor diameters apart perpendicular to the prevailing wind, and five to ten rotor diameters apart in the direction of the prevailing wind, to minimize efficiency loss.”
- Using rough figures and 300 ft rotor diameter (RD), the minimum area per turbine would be 1200x2000 to 2000x4000 ft, or 54 to 181 acres. Let's just say that to put a large turbine on less than 50 acres of area is unheard of, and would be HIGHLY irrational as you would lose much of your power to the "park effect." But they are planning to do it on only 15 acres each.
- A windfarm of 500 2MW turbines, and given the uneven terrain, would require at least an average of 100 acres each, would require a total of 50,000 acres, or 78 square miles (not 12 square miles).
- The Fowler Ridge Wind Farm is a good comparison, as it uses smaller (1.5MW) turbines with (smaller) 253 ft RD, and has uneven terrain similar to our local mountains, and the need to respect 1000 ft setbacks, etc. Although spacing is designed for minimum of 58 to 74 acres each, they actually consume 173 acres due to the terrain and setback requirements.

If the project covers only 7,500 acres, and given the reality of the terrain in the area, they would be able to site about 75 turbines. That's 150 to 225 MW, and doesn't need the SRPL. Any closer spacing that this is a waste of money.

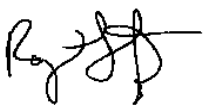
*Question: How is this project different from all the other wind farms in the world such that they are able to place 6 to 10 wind turbines in the same area that other projects place only one?*

Request: Due to the inadequacy of the information about the design of the RWEF with respect to the density of the wind turbines (and therefore the ultimate output of the project), please extend the review period of the SRPL until this information can be generated by the applicant. At this point, it appears that the output capacity of the wind farm as been exaggerated to provide rationale for the approval of the Sunrise Powerlink. With an appropriate figure for the output of the wind farm, the Sunrise Powerlink is NOT NECESSARY, and their application, without additional substantiation, should be denied.

I also understand that the North Baja Pipeline is located in this area as well, and the actual agenda may be to include a NG power plant at that location, south of the border, as they have in Mexicali.

*Q: Is it feasible to construct such a NG power plant at this location?*

If it is, we would request to understand their actual plans as they are not serious about putting in a 1250 MW wind farm.



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