

May 3, 2010

Bureau of Land Management  
SunZia Transmission Line Project  
P.O. Box 27115  
Santa Fe, NM 87502-0115

Subject: Scoping Comment Stating Why Arizonans Should Oppose SunZia

I am a research engineer who began my professional education studying energy systems [1]. Confident in the capabilities of solar energy, I later introduced a method that uses a solar-activated semiconductor to destroy waterborne viruses [2]. The sun is our greatest resource, and Arizona's unique assets and talented residents can readily be engaged to create valuable technologies that utilize it. The SunZia transmission project would jeopardize these economic prospects by marring our renowned landscape and subsidizing non-Arizona interests (SunZia is tailored to the solar and wind energy ambitions of New Mexico [3]; Florida Power & Light Group owns New Mexico's largest wind farm [4]; Colorado, Wyoming, and others would profit from SunZia's expansion of the territory of their energy sales [5]).

In response to Project Zia, SunZia was conceived in 2006 to sell power from New Mexico and the Bowie Power Station to western markets such as Phoenix, Los Angeles, and Las Vegas [5,6,7]. The gas-fired billion-watt Bowie station will emit a daily amount of carbon dioxide equal to that produced by burning more than a million gallons of gasoline [8]. Not surprisingly, SunZia and Bowie are promoted, managed, and financed by the same group, and they petitioned the Federal Energy Regulatory Commission to permit SunZia to transmit the non-renewable power of Bowie and other generators [9,10]. In effect, their petition also asked that 86% of SunZia's transmission rights be allocated to a New Jersey-California equity firm, a Louisiana construction company, a major foreign-based oil company, and a Colorado-New Mexico-Wyoming-Nebraska electric cooperative [11]. Only 14% was requested for Arizona electric utilities [12]. Thus, it seems the name "SunZia" was selected, and the renewable energy option was included, to muster public support by wrapping this otherwise unmarketable project in a green package. This scheme also enables New Mexico to unload the cost of its wind-generated electricity onto Arizona.

The expense and unreliability of wind-farm electricity is evidenced by New Mexico's desire to export this energy rather than consume it. Wind power is a highly inefficient use of transmission line capacity, and it must be fed into a transmission system that predominately carries power from stable sources (such as gas or coal) so that its unpredictable variability can be tolerated. Having these unacceptable flaws, wind farms exist only because state and federal taxpayers are forced to help pick up the tab [13,14]. Furthermore, with Arizona's abundant solar energy, it would be foolish to subscribe to New Mexico's wind endeavors. The best wind farms produce about 5 kilowatts per acre, or 0.03 kilowatt-hours per square meter per day [15]. As a SunZia map shows, the sun offers 250 times more power to Arizona land at 7.5 kWh/m<sup>2</sup>/day [16].

The future belongs to innovations that give us full use of sunlight's tremendous potential. Ill-conceived ventures like SunZia should remain in the past. Instead of serving that harmful project, Arizona should focus on originating the technology needed to tap the wealth of solar resources with which it is blessed.

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1 Enclosure: Cited References and Contact Information

Cited References:

- [1] University of Arizona: BS Mechanical Engineering, MS Civil Engr, PhD Chemical/Envr Engr
- [2] <http://aem.asm.org/cgi/content/abstract/60/1/344>
- [3] [http://www.blm.gov/nm/st/en/prog/more/lands\\_realty/sunzia\\_southwest\\_transmission.html](http://www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html)
- [4] <http://www.pnm.com/systems/nmwec.htm>
- [5] [http://www.westconnect.com/filestorage/swat\\_project\\_zia\\_081706.pdf](http://www.westconnect.com/filestorage/swat_project_zia_081706.pdf)
- [6] [http://www.sunzia.net/pdf/SWAT\\_091306.pdf](http://www.sunzia.net/pdf/SWAT_091306.pdf)
- [7] [http://westconnect.com/filestorage/swat\\_sun\\_zia\\_status\\_101806.pdf](http://westconnect.com/filestorage/swat_sun_zia_status_101806.pdf)
- [8] Estimate is based on 24-hr operation of 1000 MW gas-fired power plant, 1135 lb CO<sub>2</sub> per MWh (ref: <http://www.epa.gov/rdee/energy-and-you/affect/natural-gas.html>), 19.4 lb CO<sub>2</sub> per gallon of gasoline (ref: <http://www.epa.gov/oms/climate/420f05001.htm>):  $24 \times 1000 \times 1135 \div 19.4 = 1.4$  million gallons of gasoline per day.
- [9] [http://www.southwesternpower.com/southwestern\\_power\\_group\\_project\\_listing.html](http://www.southwesternpower.com/southwestern_power_group_project_listing.html)
- [10] [http://www.sunzia.net/pdf/012910\\_FERC%20petition.pdf](http://www.sunzia.net/pdf/012910_FERC%20petition.pdf)
- [11] 40%, Energy Capital Partners (whose founder and partners are formerly of Goldman Sachs), Short Hills, NJ, and San Diego, CA; 40%, MMR Group, Baton Rouge, LA; 5%, Royal Dutch Shell, The Netherlands; 1%, Tri-State Generation and Transmission Association, Westminster, CO.
- [12] 13%, Salt River Project, Tempe, AZ; 1%, Tucson Electric Power, Tucson, AZ.
- [13] <http://www.wind-watch.org/documents/wp-content/uploads/Schleede-High-Cost-Low-Value-Electricity-from-Wind.pdf>
- [14] <http://www.wind-watch.org/documents/wp-content/uploads/schleede-windtaxbreakssubsidiesfortwooilcompanies.pdf>
- [15] [http://www.heartland.org/policybot/results/24041/Pickens\\_Plan\\_Fails\\_to\\_Account\\_for\\_Limitations\\_on\\_Wind\\_Power.html](http://www.heartland.org/policybot/results/24041/Pickens_Plan_Fails_to_Account_for_Limitations_on_Wind_Power.html)
- [16] [http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/more/lands\\_and\\_realty/sunzia/sunzia\\_maps.Par.41410.File.dat/WREZ-sunzia-corridor-map.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/more/lands_and_realty/sunzia/sunzia_maps.Par.41410.File.dat/WREZ-sunzia-corridor-map.pdf)

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