



**U. S. Department of Energy
National Nuclear Security Administration
Pantex Site Office
P. O. Box 30030
Amarillo, TX 79120-0030**



JUL 30 2010

AGENCY: U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The NNSA has prepared an Environmental Assessment (EA), DOE/EA-1696, to analyze the potential environmental consequences of constructing, operating, maintaining, and decommissioning a 3-phased wind generator farm and its associated energy distribution infrastructure on Pantex Federal property or leased land using federal funding. NNSA needs the capability to generate and distribute electricity as a renewable energy source. The quantity generated, as a minimum, would be sufficient in Phase 1 to meet or exceed Pantex Plant demands during those periods when conditions are favorable to generate alternative electrical power. When such conditions do not exist, commercially generated energy would be used to maintain Plant operations. Additional electrical energy generated from Phases 2 and 3 would be connected to the grid for energy credits to help offset the costs of commercially generated energy needs at the Plant.

Based on the information and analyses in the EA, NNSA has determined that the proposed action is not a major federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969, 42 United States Code 4321 *et seq.*, the Council on Environmental Quality regulations implementing the National Environmental Policy Act (40 CFR 1500-1508), and the Department of Energy regulations for implementing the National Environmental Policy Act (10 CFR 1021). Therefore, preparation of an Environmental Impact Statement is not required, and NNSA is issuing this FONSI.

COPIES OF THE EA ARE AVAILABLE FROM:

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FOR FURTHER INFORMATION ON THE DOE NEPA PROCESS, CONTACT:

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BACKGROUND: The DOE/NNSA must maintain long-term, efficient, and effective operations at the Pantex Plant. The NNSA Pantex Plant mission is to maintain the safety, security and reliability of the nation's nuclear weapons stockpile. Pantex supports the life extension programs, weapon assembly/disassembly, and the development, testing and fabrication of high explosive components. Additionally, Pantex is charged with the staging and surveillance of nuclear weapon components.

As DOE/NNSA moves toward its vision to achieve a smaller, safer, more secure, energy efficient and less expensive enterprise, one vital strategy is development of alternative renewable energy sources that support both the DOE Strategic Plan and the NNSA Strategic Plan by providing efficient stewardship of the NNSA complex based on the current and projected mission of the Plant.

DESCRIPTION OF THE PROPOSED ACTION: The proposed action would design, construct, operate, maintain, and decommission a wind generator farm and its associated distribution infrastructure on Pantex Federal property, or on adjacent land leased from Texas Tech University (TTU), using federal funding.

The proposed action would be completed in three phases. Phase 1 would consist of 4 – 7 wind turbine generators (WTG's) constructed on federal property, with a total of 5 – 7.5 megawatt (MW) Average Generating Capacity (AGC) that would be connected to the existing Pantex Plant south substation's 12.5 kilovolt (kV) distribution system.

Phase 2 of the proposed action would bring the total AGC to approximately 30 MW with the addition of 20 – 23 WTG's constructed on federal property or federally leased property. This phase would include the construction of a new substation to step the voltage up to 115 kV and a control building with extension of utilities to the building. The new substation and control building would be located on federal property.

Phase 3 of the proposed action would bring the total AGC to approximately 40 MW with the addition of 8 – 9 WTG's constructed on federally leased property and connected to the substation built during Phase 2.

ALTERNATIVES CONSIDERED: In addition to the preferred alternative, NNSA considered the No Action Alternative, in which no wind generator farm would be constructed and Pantex Plant would continue operations using commercially generated electrical power.

The following two alternatives were also reviewed:

- A Public-Private Partnership, with private industry developing and operating the wind turbine generators installed on DOE/NNSA and TTU property, and then providing the turbines to government through lease/purchase.
- A combined Phase 1 and Public-Private Partnership, with DOE/NNSA owning and operating Phase 1, and private industry owning and operating the Phase 2 and 3 wind turbine generators under a lease/purchase agreement.

The following additional alternatives were considered but dismissed from further consideration because they did not fully meet the purpose and need of the project:

- Solar energy
- Geothermal energy
- Hydroelectric energy
- Biomass energy

ENVIRONMENTAL CONSEQUENCES: The potential impacts and their minimization would be the same for the Proposed Action, the Public-Private Partnership Alternative, and the Combined Phase 1 Action and Public-Private Partnership Alternative. By using a sliding-scale approach for analyzing potential environmental and socioeconomic effects, it was determined that Environmental Justice,

Floodplains/Wetlands, and Cultural Resources would be minimally impacted by the proposed action. Aspects with greater potential for impacts are summarized below:

Land Use: The total acreage of the project is 2,994 acres. The total acreages impacted by the project, by specific land use type, are 54.16 acres of cultivated ground, 49.24 acres of Conservation Reserve Program (CRP) land, and 1.2 acres of mowed native grassland. Another 34 acres would be impacted by a grid connection route to be determined after State of Texas approval of the main grid line route, so no specific land use for the grid connection route can be quantified at this time. But the 34 acres of impacted land within any specific route could include highway right-of-way, cultivated ground, CRP land, and native grassland.

Of the total acreages, permanent land use impacts would include 20.06 acres for the all-weather access roads; 1.44 acres for the exposed base of the foundations; and 4.2 acres for the sub-station, interconnect, and control building. Permanent impacts would occur on less than 1 percent of the total project area. The remainder of the total impacted acreages would be temporarily impacted land that would be regraded and returned to original use.

Coordination with the Farm Service Agency (FSA) would be required to determine if CRP status would be impacted on TTU property. The total footprint of the wind generating devices, using the FSA formula that does not include access roads, transformers, and other ancillary equipment, would be less than 1 acre of CRP land.

Water Resources: Total water use is estimated to be approximately 954,000 gallons. Construction-related activities associated with the proposed project would expose soils and sediments, and any materials spilled during construction, to possible erosion and transport by heavy rainfall or wind. The installation of permanent access roads has the potential to affect surface water drainage patterns. Construction-related activities would be subject to the requirements of Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000 for the discharge of storm water. Coordination with the Texas Department of Transportation would be required for culverts installed on the right-of-ways of State-maintained highways or roads.

Biological Resources: Construction activities during installation would result in temporary impacts to roadside short grass prairie and CRP habitat, whereas the construction of access roads and foundations would result in permanent impacts to approximately 11 acres of CRP habitat. Although some habitat fragmentation could occur from these permanent impacts, they would affect less than 1 percent of the CRP habitat in the project area.

No habitat for the Lesser prairie-chicken (*Tympanuchus pallidicinctus*), a species of concern, occurs in the project area. Temporary and permanent disturbance of soil and vegetation from construction activities in CRP habitat may be of use to the Texas horned lizard (*Phrynosoma cornutum*), a state-listed threatened species, and the Black-tailed prairie dog (*Cynomys ludovicianus*), a federal species of concern, as well as to additional species that utilize bare, soft, or recently disturbed ground. Foraging habitat provided by agricultural crops and CRP lands for other species of concern would be temporarily disturbed for a short time. Impacts to habitats of transient species during construction should be minimal, as the disturbed areas would be small in geographic scale, and transient species are adaptive to finding appropriate foraging habitat among available fields in the vicinity, where crop types are normally rotated.

Both pre-construction and post-installation monitoring would be conducted, pursuant to recommendations from the U. S. Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD). Coordination with USFWS would be required if any incidence of take occurred as part of the proposed action.

Minimizing impacts to biological resources during operation activities includes locating the WTG's as far from playa lakes as possible to avoid or minimize potential collisions with waterfowl or other bird species using the playas. Any non-buried power lines would be designed with effective measures to reduce the probability of avian mortality. This would include locating power line routes a reasonable distance from wetlands or other bodies of water, and installing visual markers and raptor protection on overhead distribution and grid connection lines. All distribution lines within the wind farm would be buried. Post-installation monitoring may provide opportunities for minimizing effects, such as reducing turbine speeds at night to avoid impacts to bat species and nocturnal avian species.

Air Quality and Climate Change: Air emissions would include dust from road construction, excavation, trenching, and movements of construction vehicles, as well as emissions from vehicle exhausts, but monitoring would not be required. Appropriate best management practices would be used to control fugitive dust and particulate emissions. No long-term impacts to the National Ambient Air Quality Standards (NAAQS) would be expected.

Phase 1 of this project could result in the avoidance of emitting 39,720 tons of carbon dioxide (CO₂), 1,448 pounds of methane (CH₄), and 1,311 pounds of nitrous oxide (N₂O) greenhouse gases (GHG) to the atmosphere annually. The completion of Phase 1 could also result in the avoidance of emitting 68 tons of nitrogen oxides (NO_x) and 101 tons of sulfur dioxide (SO₂) criteria pollutants. Based on the estimated 20-year life cycle of wind turbine generator systems, the completion and operation of all three phases of the project could result in the avoidance of emitting approximately 4.5 million tons of CO₂, 80 tons of CH₄, and 73 tons of N₂O GHG to the atmosphere during the life span of the project.

Visual Resources: Large construction equipment such as cranes, and bare ground from construction activities, would impact visual resources short term. Permanent visual impacts to the landscape would result from access roads, the control building, the new electrical substation and interconnect, and the aboveground electrical lines. The most dominant visual impact would be the approximately 38 wind turbine generators, which could extend to as much as 426 feet above ground level.

Noise: Temporary, intermittent noise levels (between 80 and 90 dBA) could result from the use of heavy equipment like backhoes, large trucks, and cranes during construction activities. These levels attenuate rapidly with distance, but would likely have a temporary impact on landowners in the rural residential areas of the proposed project. Noise levels would return to pre-construction levels following completion of construction activities.

Noise levels from the operation of wind turbines would generally be within the same 40-60 dBA range as the average onsite sound levels currently at the Pantex Plant.

Human Health: The occupational hazards associated with wind energy projects are similar to those of the heavy construction and electrical power industries, while others are unique to wind energy projects (i.e., heights, high winds, energized systems, and rotating/spinning equipment). Manufacturers of wind turbine generators are required to provide an operator's instruction manual that includes the system's safe operating limits and descriptions, start-up and shutdown procedures, alarm response actions, and an emergency procedures plan.

The primary public safety concern would be rotor blade failure with components thrown off. A related issue, ice throw, can occur if ice builds up on the turbine blades. Although such occurrences as these are rare, they represent issues of concern. Current design technology and administration controls that provide a sufficient safety zone, or setback, from residences, roads, and other public access areas, would minimize risk to the public.

Transportation/Traffic: During construction, there would be an increase in offsite traffic. Some oversized and overweight loads travelling Highway 60 and FM 2373 for delivery of turbine components and large cranes would employ traffic controls such as flaggers, escort vehicles, and travel time restrictions. These activities would not be expected to cause more than a temporary annoyance to the Plant employees, adjacent landowners, or the users of Highway 60 and FM 2373. Impacts to transportation during operations would be insignificant. Impacts during decommissioning would be on a scale similar to that of construction, when large cranes and trucks would be reintroduced to the area for WTG dismantlement.

Waste: Construction would result in a potential for the generation, treatment, storage, and disposal of solid waste as defined in 40 CFR 261.2. Waste would be handled in a manner that is appropriate to its characterization and consistent with federal and state regulations and the contractor's approved waste management plan. Waste minimization principles would be incorporated into the project, with all waste being evaluated for recycling or reuse options.

During site decommissioning, all dismantled turbines and their towers would be recycled at other wind energy projects, sold for scrap, or disposed of offsite as solid waste after removal of fluids. Broken concrete could be reused for road base or erosion stabilization. Electronic equipment would be recycled or disposed of, possibly as hazardous waste because of the presence of heavy metals. Transformers and electrical control devices would either be reused in other applications or sold as scrap after fluid removal. The access roads, any rock or gravel, and building foundations would be recycled if no longer needed. Disturbed land areas would be restored to original grade and reseeded with native grasses or planted in crop, as appropriate.

Environmental Restoration: The Pantex Plant uses approximately 410 Megawatt-hours (MWh) of electric power annually to operate the Perched Groundwater Pump and Treat Systems and two In-situ Bioremediation perched groundwater remediation programs. Alternative wind energy would provide approximately 184.5 MWh of electricity annually to operate these perched groundwater remediation programs. The use of wind generated energy to power these programs would result in avoiding approximately 126 tons of CO₂ emissions annually for the estimated 30-year life of the programs.

Construction of the wind turbines would not impact environmental restoration projects that are required by the Compliance Plan, while operation of the wind turbines would positively impact the Plan, as quantified in the preceding paragraph.

Utilities and Infrastructure: Approximately 45 percent of the Plant's annual electrical energy requirements would be generated by the wind turbines constructed during Phase 1. Additional electrical energy generated from Phases 2 and 3 would be connected to the grid for energy credits to help offset the costs of commercially generated energy needs at the Plant.

Estimated water use during construction would be approximately 954,000 gallons. Natural gas, steam, and wastewater treatment are not expected to be impacted by the project.

Socioeconomic Resources: The construction, maintenance, and operation activities of the project would create approximately 320 to 480 one-year jobs and 24 to 48 long-term jobs, which in turn would generate income for local businesses and communities.

Cumulative Effects: The potential effects of the project, when combined with the effects of other actions within the area of influence, would not result in cumulatively significant impacts.

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PREDECISIONAL REVIEW: On March 18, 2010, DOE/NNSA invited review and comment on the predecisional EA by publishing a Notice of Availability in local newspapers. The document was made available to the general public by placing it in the U.S. Department of Energy Information Repository, Amarillo Public Library, Central Branch, 413 E. 4th Street, Amarillo, Texas, and at the U.S. Department of Energy Reading Room, Carson County Library, 401 Main Street, Panhandle, Texas. The predecisional EA was also accessible on the Pantex Plant website at: <http://www.pantex.com/about/environment/regComp/NEPA/index.htm>. The review and comment period ended on April 19, 2010.

AGENCY CONSULTATIONS: The U. S. Fish and Wildlife Service responded to an information letter, dated August 6, 2009, with specific recommendations for avoiding and minimizing wildlife impacts from wind turbines. The Service received a copy of the Predecisional EA but did not provide further comment.

The Texas Parks and Wildlife Department responded to an information letter, dated August 6, 2009, with voluntary recommendations for wind energy development in Texas. The Department received a copy of the Predecisional EA but did not provide further comment.


The United States Department of Agriculture, Farm Services Agency, responded to the predecisional EA by providing guidance on coordinating with the local FSA office regarding impacts on Conservation Reserve Program lands.

The Panhandle Regional Planning Commission received a copy of the predecisional EA in its capacity as the Single Point of Contact for the State of Texas but did not provide comments.

PREDECISIONAL PUBLIC COMMENTS: No comments were received from the public on the proposed project.

DETERMINATION: Based on the information and analyses in the final EA, NNSA has determined that the proposed federal action does not constitute a major federal action that would significantly affect the quality of the human environment, within the meaning of the National Environmental Policy Act. Therefore, an Environmental Impact Statement is not required, and the NNSA is issuing this FONSI.

Signed in Amarillo, Texas, this 30th day of July 2010.


Steven C. Erhart
Manager