STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Petition of BNE Energy Inc. for a Declaratory Ruling for the Location, Construction and Operation of a 3.2 MW Wind Renewable Generating Project on New Haven Road in Prospect, Connecticut	Docket/Petition No. 980 March 8, 2011

Supplemental Pre-filed Testimony of John B. Stamberg, P.E.

The following pre-filed testimony supplements my pre-filed testimony filed on February 16, 2011, in connection with the above-captioned matter.

Q. Is BNE Energy's water, groundwater and erosion information up to date, showing good engineering practice and sufficient to prove that there will be no adverse water runoff, sediment or groundwater impacts caused by project operation?

A. No, it is not.

Q. What is the basis for your answer?

A. BNE Energy, Inc.

(1) Has acknowledged and disclosed changes in their site plan and stormwater plans on February 16, 2011 in Pullman and Comley LLC's letter to the honorable Daniel Caruso Chairman of the Connecticut Siting Council. This submission contained BNE Energy letter dated February 3, 2011to Ms. Cindy Gaudino Manager Source Protection and Real Estate of the Connecticut Water Company that stated "the Connecticut Water Company has expressed concerns over the potential for sedimentation and/or impacts to the wetlands during construction in the watershed . . . which are in the watershed of New Naugatuck Reservoir."

(2) The original and redesigned access road submitted to Connecticut Water Company uses 1:1 slopes and fails to conform to the 2002 Connecticut Guidelines for Soil and Erosion Sediment Control which would dictate 2:1 to 3:1 slopes. Mr. Carboni's pre filed testimony states that "the additional disturbance and earthwork also has serious implications for the rate and volume of and erosion into wetlands on the property and onto the properties including the new Naugatuck Reservoir."

(3) The combination of the tall trees onsite and the close spacing of the turbines may result in greater turbulence losses and reduce onsite power production. This may lead BNE to have incentive to remove more trees in the future to improve performance per David Pressman's supplemental testimony.

(4) The Stormwater Management Plan with Stormwater Pollution Prevention Plan (SWPP); Wind Prospect; Prospect, Connecticut dated November 2010 prepared for BNE Energy by Zapata, Inc. is out of date and needs to be redone pursuant to the changes made to address Connecticut Water Company concerns. These changes should include updated disturbed area and stormwater runoff calculations (See cover sheet and table of contents of this report, which shows that the report was prepared prior to the changes made for the Connecticut Water Company and with the 1:1 slopes not in conformance with the 2002 Connecticut Guidelines for Soil and Erosion Sediment Control.)

(5) The above Zapata study, for this project, is based on the assumption that woods/grass combination is 100.00% pervious including newly disturbed area where forest is converted to grassland. The basis for these assumptions is not apparent. These assumptions may minimize runoff but would maximize infiltration into the

groundwater. The infiltration could impact the movement of pollutants from the adjacent brownfield soil and groundwater adjacent U.S. Cap and Jacket site.

(6) Michael S. Klein in his pre filed testimony of February 14, 2011 states on page 3 that "the erosion and sediment control plans are inadequate" and on page 3 and 4 that "There will be short and long term changes in runoff and recharge as a result of drainage measures necessary to control stormwater. As noted above, this still results in erosion but also has a high potential to alter the hydrologic regime of the wetlands, which are supported by groundwater seepage over the hardpan."

As stated in the items above, the geohydrology presented by BNE Energy, Inc. is out of date, not engineered to good engineering practices and insufficient prove that the surface runoff, sediment, groundwater quality are not adversely impacted.

Q. Is the original site plan or the redesigned access road submitted to the Connecticut Water Company in sufficient engineering detail to preclude additional need to modify the site plan?

A. No.

Q. What engineering details could require modifications to the site plan?

A. BNE Energy, Inc. (1) has not showed, described or provided how large vehicles used to deliver wind turbine blades or tower sectors are capable of using the proposed road, (2) has not selected the type of crane or cranes to unload these components (weight of crane, crane lift capability and crane reach), (3) has not showed or engineered how and where the various blades and tower components will be located and (4) has not provided tower foundation designs and construction methodology.

Q. How might the site plan be impacted by the delivery of wind turbine blades and tower components?

A. Wind turbine blades delivered by truck are extremely long. Wind turbine tower components are long and heavy. The BNE Energy, Inc. road is a single road with no space to turn around the large, heavy and long specialty trucks. Thus, either a turn around or looped road maybe necessary and increase the disturbed area especially if 2:1 or 3:1 slopes per the 2002 Connecticut Guidelines for Soil and Erosion Sediment Control. These road changes may be permanent for when wind turbine repairs are required. To provide the Council with a sense of just how enormous these structures are, I have attached to my testimony various images of wind turbine transportation as Exhibit 9.

Q. Why is selection of the crane or cranes necessary in preparing a site plan for construction?

A. Wind turbine cranes are designed primarily for heavy straight upward lifting and have reduced ability to reach laterally (side ways) to lay down wind tower blades, tower components and the nacelle (turbine drive and generator assembly on top of the tower). Without this detail the location and size lay down area cannot be accessed. If the crane or cranes need to be moved to an alternate location for lay down of components additional site disturbance will occur.

Q. Has the lay down area for wind turbine components been accurately described?

A. Without further information on the type of crane, location of component truck unloading positions, the size location and extent of disturbance cannot be determined with the currently submitted data.

Q. Have the tower foundations been engineered and construction technique been submitted?

A. No.

Q. Are the wind turbine foundations major components of a wind turbine design?

A. Yes. Wind turbine foundation need to support the weight of the wind turbine assembly which may be 250 to 300 tons per wind turbine. This is a weight of six to eight fully loaded gravel dump trucks. Also, the foundation must be designed to keep this massive weight of the wind turbine from tipping over.

Q. How does the wind turbine foundation design effect the site plan, groundwater flow and sediment runoff?

A. These massive foundations must be deep and wide depending on the design. At BNE Energy, Inc. site in Prospect, Connecitcut, it is likely the foundations will need to be below the groundwater and wetland levels. To build these foundations with groundwater in the foundation area, groundwater will have to be pumped out, treated for sediment removal and discharged. You cannot pour concrete into a waterhole. In some cases groundwater can be lowered by "well pointing" in which the entire area effecting the foundation area is pumped out to lower the groundwater level. Also, the width of the foundation can be increased to offset some depth requirements. Without the foundation design and description of the construction technique the disturbed site area cannot be evaluated. The foundation design will likely increase the disturbed site area and/or will likley disturb the groundwater and possibly spreading pollutants from the U.S. Cap and Jacket brownfield site. No foundation designs, soil testing, soil boring, etc. have been submitted by BNE Energy, Inc.

Q. What is the concern over surface water?

A. Per the Brownfields Targeted Site Assessment; U.S. Cap and Jacket Site, Prospect, Connecticut by Tetra Tech NUS, Inc. The proposed BNE Energy, Inc. site was impacted by surface drainage from the U.S. Cap and Jacket site as stated on page 1-1 "Surface drainage at the site is routed to the north but eventually flows into the New Naugatuck Reservoir, a drinking water supply located approximately 0.5 miles to the southwest of the site." Further, on page 5-3 the report states "That migration of VOC contamination is most likely a result of groundwater flow, but may also be influenced by the site's stormwater drainage system. BNE Energy, Inc. project as proposed may exacerbate this pollutant pathway.

Q. What is the concern over sediment?

A. The wetlands and the New Naugatuck Reservoir are likely to be impacted per the Connecticut Water Company concerns, Klein Testimony, Carboni Testimony and my testimony.

Q. What is your concern about groundwater?

A. The alteration of the site may alter the geohydrology and the groundwater movement to move the brownfield pollutant plume in dramatically different patterns as seen with current pollutants already detected in neighboring wells, surface runoff into the New Naugatuck Reservoir or to deep groundwater impacting other neighboring wells or the New Naugatuck Reservoir.

Q. Do you still support your pre filed testimony recommendations?

A. Yes. They are still necessary with BNE Energy, Inc. shifting of the site plan to placate the Connecticut Water Company and the out dated stormwater runoff plans. My

conclusions are especially true if BNE Energy, Inc. were to change the disturbed area to provide good engineering practices on road slopes or further deforest the area to gain wind turbine efficiency to improve the facilities economics as suggested by Mr. Pressman. This additional clearing would decrease site groundwater evapotranspiration (from tree water uptake that ends up in atmosphere) and increase total groundwater flow from the BNE site.

Q. Can you summarize why you are concerned over the site plan, change in disturbed area, lack of good engineering practice, changes in surface runoff, changes in sediment and alteration of groundwater?

A. Unique to this site are two very valuable and utilized water resources used for human use. On the west is the New Naugatuck Reservoir owned by the Connecticut Water Company with several wetlands on the BNE Energy, Inc. site that drain into the Reservoir.

On the east side is the polluted U.S. Cap and Jacket site that has already polluted local wells and surface streams to the north. These unique circumstances make use and disturbance of this site, especially with tree removal, deep foundation and a road designed with poor engineering practice vulnerable to two water supply sources used for human water supplies that exist near the BNE Energy, Inc. proposed site.

EXHIBIT 9

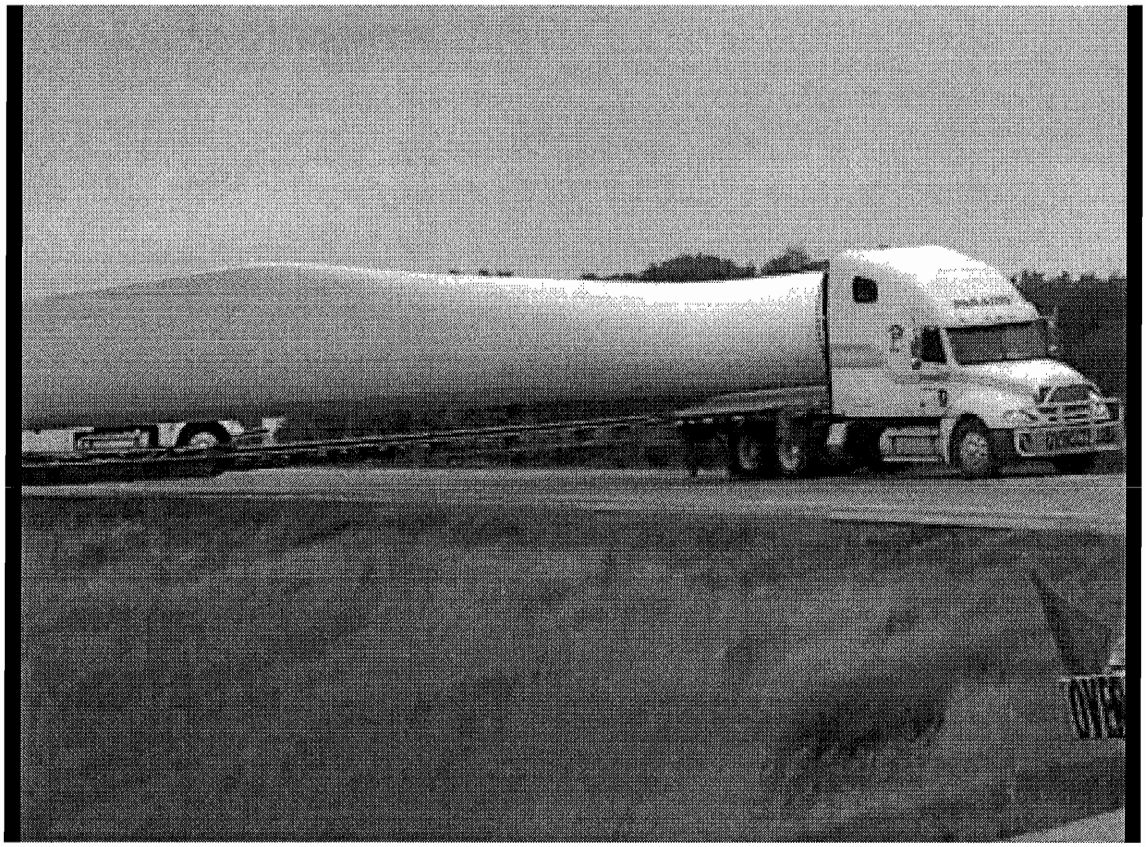
Modern Wind Power Crane

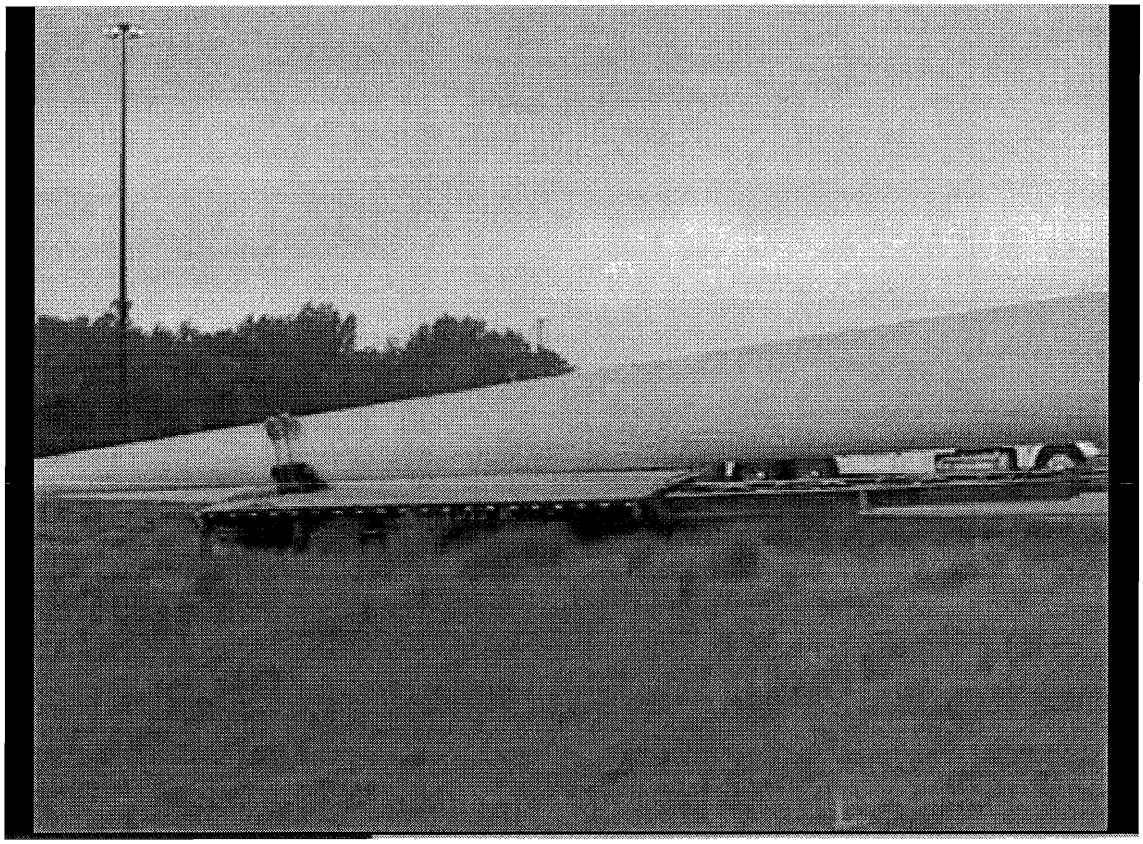
The new crane travelled form the manufacturers Ehingen plant this week directly to its first contract in France where it will be used to erect a number of wind turbines. The unit comes with a maximum system height of 191 metres and is rated at seven metres radius.

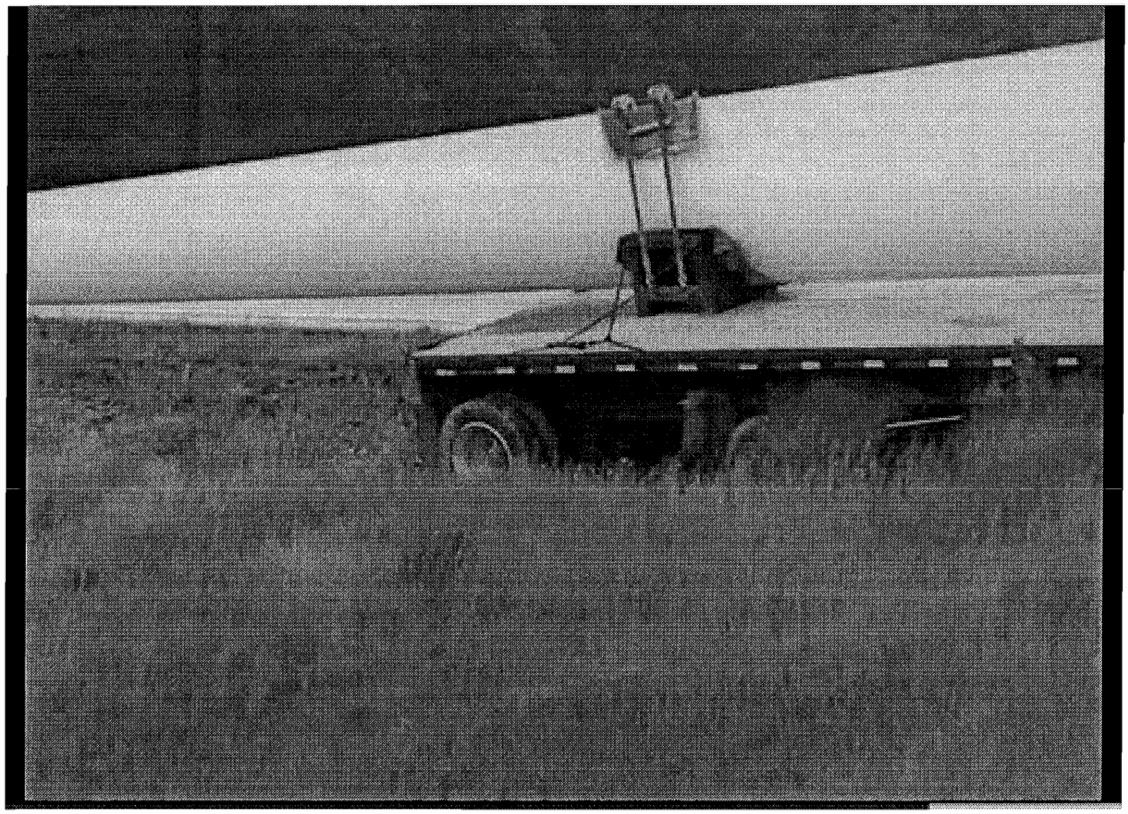
McNally has made wind power work one of its core specialities working on a global basis and in the past few years has purchased a number of big Liebherr cranes, including several 1,200 tonne LTM11200 and a 1,200 tonne LTR11200 telescopic crawler crane.

Source: http://www.vertikal.net/en/news/story/11672/

Wind Turbine Blades Slide off of major Highway in Iowa







http://www.bk-trucking.com/trailers_files/BK_WIND_TRAILERS.pdf

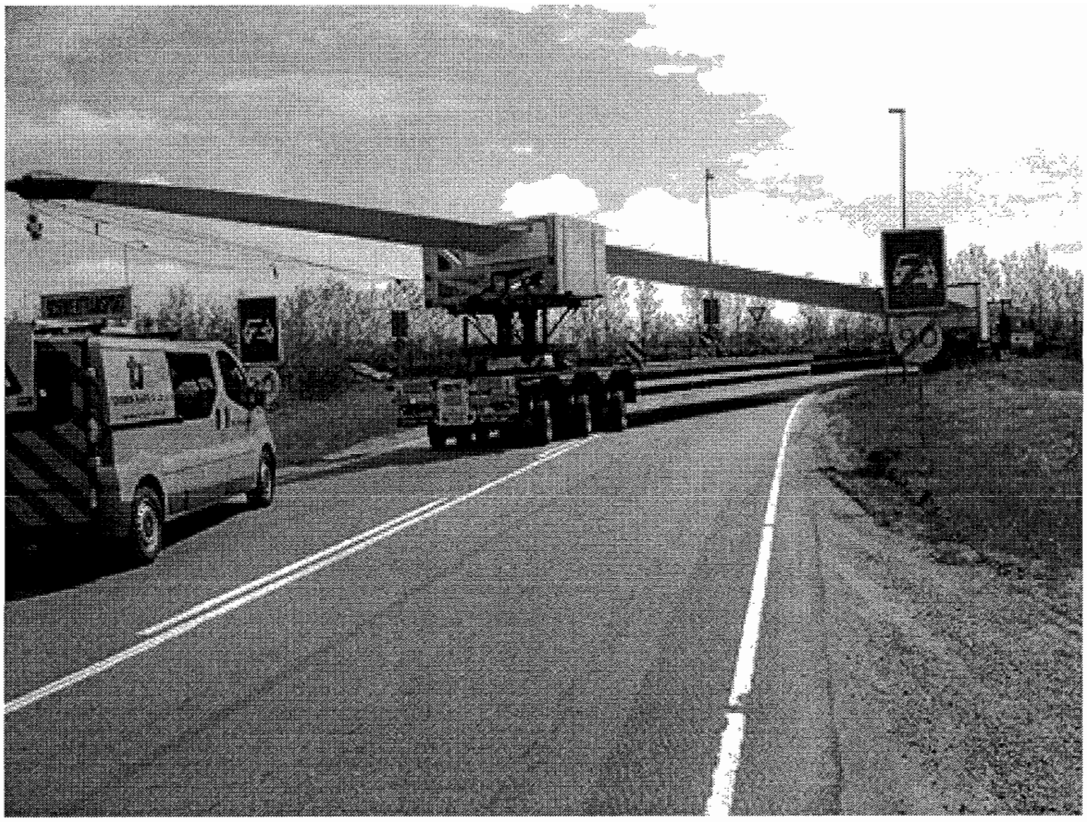
Truck Carrying Wind Turbine Blade Crashes

http://www.stuff.co.nz/sunday-star-times/news/latest-news/4439547/Truck-carrying-wind-turbine-blade-crashes

Million Dollar Crash

http://www.terrapass.com/blog/posts/how-to-have-a-million-dollar-car-accident

Wind Turbine blade in Transit

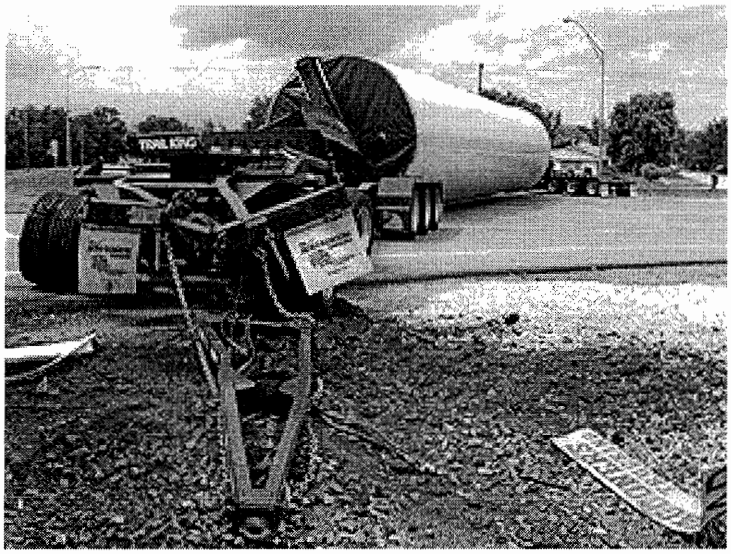


http://www.roadtransport.com/blogs/big-lorry-blog/2010/08/wind-farmscarrying-windmill-bl.html

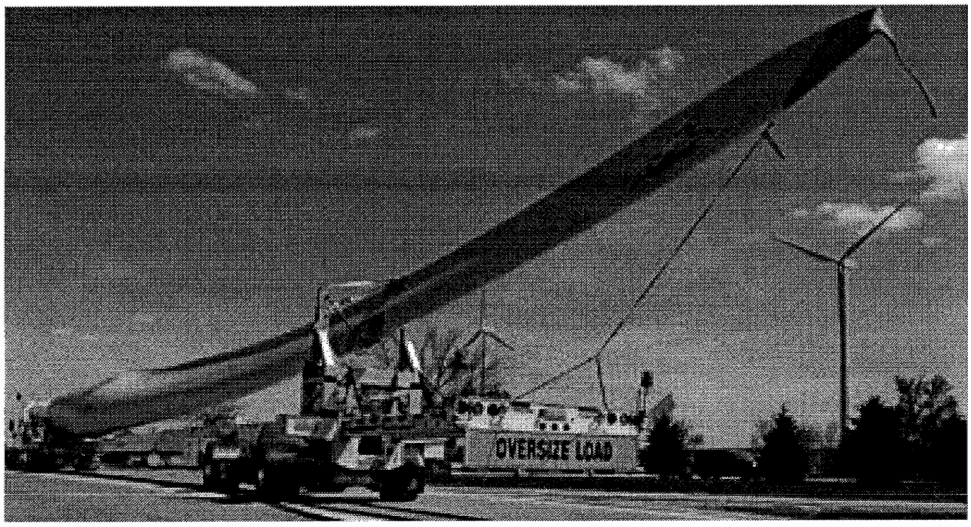
Wind Tower Section in Transit

http://www.pantagraph.com/news/local/0947df18-e771-11df-b48a-001cc4c03286.html

Wind Tower Trucking Crash

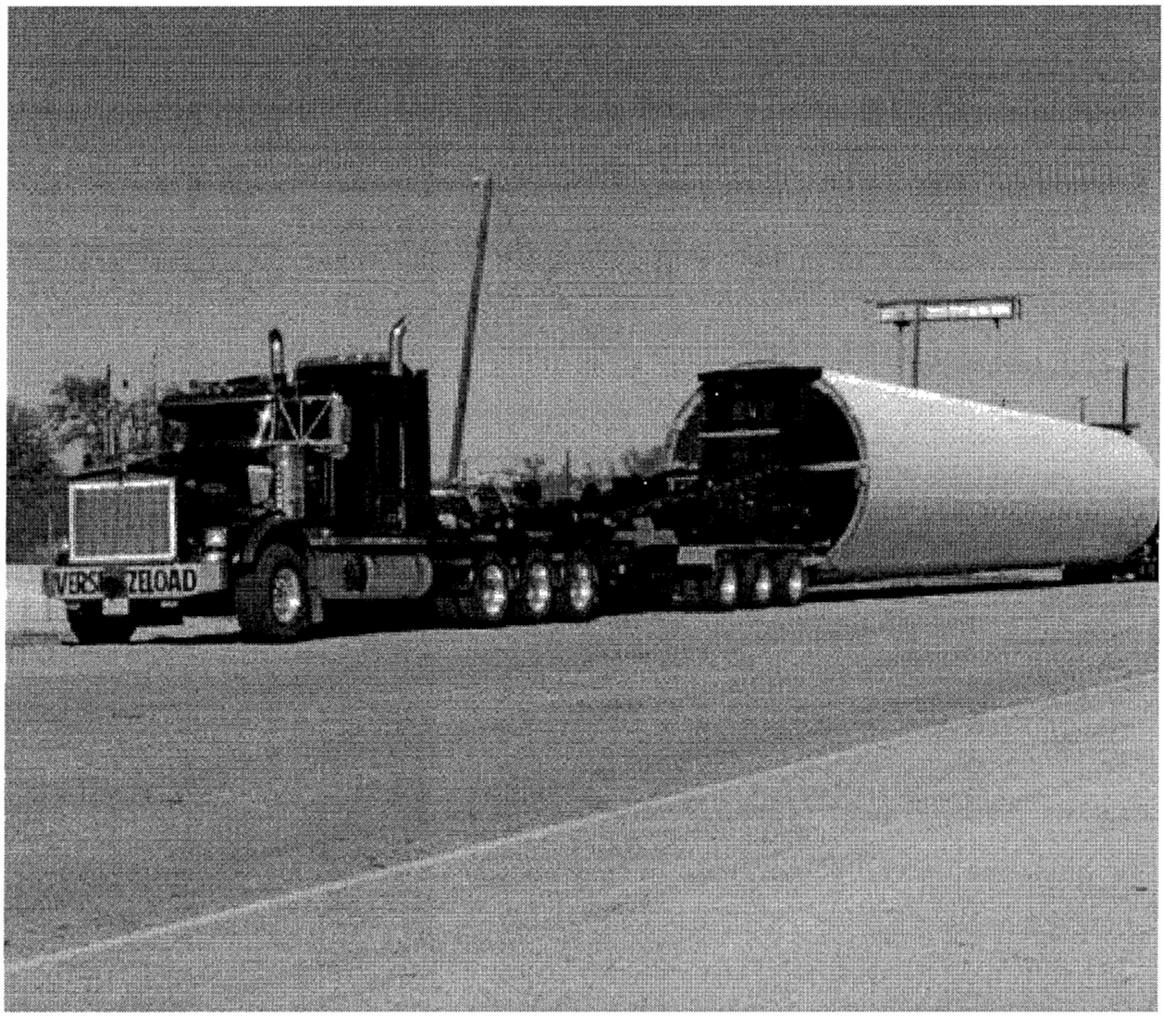


http://www.google.com/imgres?imgurl=http://www.wind-watch.org/news/wp-content/uploads/2009/07/07-30-09oxfordaccident_story1.jpg&imgrefurl=http://www.feeddistiller.com/blogs/WindPower/old/200907.html&usg=__ARhlsc0yL12Z5S8vPOohbyXeAT0=&h=225&w=300&sz=27&hl=en&start=0&sig2=ggP_PsmLf9li3YDELWpemQ&zoom=1&tbnid=yRvvJ35m046K1M:&tbnh=143&tbnw=176&ei=nmptTZ7OJ9T0gAfG-JGVBA&prev=/images%3Fq%3DWind%2Bturbine%2Btruck%2Bcrash%2Baccident%26um%3D1%26hl%3Den%26client%3Dfirefox-a%26sa%3DG%26rls%3Dorg.mozilla:en-US:official%26biw%3D942%26bih%3D1068%26tbs%3Disch:1&um=1&itbs=1&iact=rc&dur=259&oei=6mltTdbmGYL48AaF5rCODQ&page=1&ndsp=24&ved=1t:429,r:6,s:0&tx=74&ty=82



http://www.wind-watch.org/news/2010/11/09/hauling-wind-turbines/

Side view of wind tower being transported by Truck



http://www.bk-trucking.com/trailers_files/BK_WIND_TRAILERS.pdf