

The Dalles Chronicle

Heavy hauling down the highways

ODOT works with transporters of extra-heavy wind turbines

■ By **RODGER NICHOLS**
of *The Chronicle*

The next time you face that awkward struggle at the doorway — juggling two sacks of groceries in one hand, while propping open the screen door with your shoulder and fiddling with the key in your other hand — consider the people who perform the transportation equivalent of that struggle day after day.

Vestas Wind Systems, for instance, a company which sites and builds wind energy farms, needed to transport 127 wind turbines from the Port of Vancouver, Wash., nearly 300 miles to the Wild Horse Wind Power Project, north of Yakima in Ellensburg, Wash.

A quick glance at the map showed the company the safest and most efficient route involved traveling the first 150 miles on Interstate 84 through Oregon. That's where Vestas called on Wilhelm Trucking & Rigging Co., and the Oregon Department of Transportation.

That's because these wind turbines are not tiny.

Each wind turbine is composed of a tower, a rotor of three wind blades, and a generator system called a nacelle.

Each nacelle weighs 250,000 pounds.

Transporting each nacelle requires a vehicle more than 220-feet long, comprising a truck, a jeep, a semi-trailer, a booster axle — another trailer — and a non-load-bearing truck.

The tower, when erected, stands more than 220-feet tall. For transport, it splits into three segments; when assembled, a tower can weigh as much as 450,000 pounds.

Even the rotors are transportation challenges: Each wind blade is more than 60-feet long and weighs more than 12 tons.

Shipping the windmills is truly a massive undertaking. The extra weight has to be distributed across numerous axles; for 250,000 pounds, 19 are required.



ARROW SHOWS the end of the extremely large truck system Wilhelm Trucking and Rigging Co. of Portland needed to transport a wind tower nacelle up Interstate 84 on its way to Ellensburg.

Contributed photo/Wilhelm Trucking

The more the weight is distributed across many axles, the less strain the load puts on the bridge below.

Take these numbers for one wind turbine, multiply them by 127, and it's easy to see how overwhelming a hauling challenge this project would be, without expert guidance.

"The support from ODOT has been flawless," said Duane Downs, vice president and general manager of Wilhelm. "We did a lot of planning together on the frontside, and it has been one of the most smoothly-run projects of the year for Vestas. In fact, we're ahead of schedule by two weeks, thanks to ODOT's support."

During the past summer construction season, Wilhelm hauled, and ODOT facilitated, 1,047 individual windmill component loads from the Port of Vancouver to the Wild Horse Wind Power Project.

Nearly 1,000 of the 1,047 loads required permits, but most of them did not need special permitting; that is, the weight could be distributed so the total cargo fell within the guidelines, or load rating tables, that ODOT uses to calculate how much freight a bridge can bear.

When it did exceed the weight tables, Bill Spofford, program coordinator for ODOT's overdimensional permit unit, and Bert Hartman, ODOT's interim bridge program unit manager, along with a team of four load raters, figured out ways to distribute the weight

evenly so that the supporting structures "shared" the load and minimized the effect of heavy freight on a given bridge. For example, he directed Wilhelm to use a route over a column or over a lane that runs between two steel girders.

ODOT also had to check tunnel and overpass height clearance, and highway and road traffic management, working closely with Wilhelm.

This close coordination is doubly necessary because ODOT is also involved in a 10-year \$1.3 billion program to repair or replace nearly 300 bridges across the state.

That program, the Oregon Transportation Investment Act, effectively doubled the volume of bridge work.

Despite these unprecedented

levels of highway construction, ODOT kept freight and commuter traffic moving.

"Mobility is a closely-coordinated activity that takes place up front," said Gregg dal Ponte, ODOT Motor Carrier Transportation Division administrator. "Concrete barriers used during construction, for example, may not accommodate an extra-long load like a windmill blade, so we use a template for how an unusual vehicle moves and turns to lay out the traffic control."

That attention to detail has drawn praise from transporters. As Wilhelm GM Duane Downs put it, "We hear too many bad stories about bureaucrats. But in the case of ODOT, they worked very hard to find a way to say 'yes.'"