

Ship Report Transcript

Wednesday, August 28, 2024

By Joanne Rideout

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It's time for the Ship report the show about all things maritime. I'm Joanne Rideout. It's Wednesday, August 28th, 2024.

Well, I came across an interesting news item yesterday that I wanted to share with you about how 11 ports in the state of Washington will be receiving grant funds for electrification projects. And I thought it would be good to talk about that from an environmental and from a quality of life point of view.

So what does that word electrification mean in this case? As ports electrify their operations, it reduces their dependence on petroleum fuels and lessens air pollution. So the result will be, according to the Washington Department of Transportation, that greenhouse gas emissions in the state will be reduced by more than 140,000 metric tons over the next ten years.

Now, why are ports such a source of pollution? Well, there can be a variety of reasons related to industrial projects and businesses situated at ports. But a big reason and the motivation behind these grants is that ships dock there when ships and other vessels are docked and have personnel on board at all times. The vessel generally has a generator running 24 seven that keeps the ship's systems running like hot water. Each HVAC and other services that are involved in keeping a habitat on board livable for the crew and keeping the ship functioning.

Historically, these generators burn diesel fuel, and that means that ships in port are sending pollution into the air while they're sitting at the dock doing business at the port. According to the Washington Department of Transportation, this year's awards are a first with the Port electrification grant program created by the state legislature in 2023, funded by Washington's Climate Commitment Act.

The program was open to all 75 public ports statewide. It's part of a larger program to reduce carbon emissions in the transportation sector, identified as the largest contributor to pollution in the state. Grants being funded this year include projects primarily focused on two types of activities constructing shore power that allows clean electrical power use while at the dock rather than onboard combustion engines for ship operations and installing electric vehicle chargers and purchasing electric vehicles, including trucks to move cargo to and from ships at port facilities. So it's not just the ships that are a source of pollution here.

Following a competitive review process, as they do with grants, these awards were presented to 11 ports statewide locally on the Columbia. The Port of Kalama will receive \$1.4 million for an electric boat dock for charging electric vessels. Among the other ports, getting grants are eight that will receive equipment to facilitate shore power, also called cold ironing in the industry. Ports that will receive funds for shore power are Anna Cortez, Bellingham, Benton Edmonds, Everett, Friday Harbor, Port Angeles and Seattle.

Now what does that term cold ironing mean? Well, it's an old industry term for the ability of a ship to plug into the dock and shut off its engines and generators and get shore power. So the diesel engines separate from the ships engines that run those generators are shut off. Also reducing local air pollution. This is kind of a big deal and it's something that, while it's recognized as needed, is not available universally in ports because it's expensive to install. And that's why it's a big deal that it's happening

now and ships have to be configured to hook up to it. So it's an evolving situation as ships and ports come up to speed.

The benefits of shore power include, of course, reduction in emissions. Cold ironing, as it's called, significantly reduces air pollution in port areas by allowing vessels to plug into shore power instead of using their onboard generators. Ports can reduce emissions by over 95% in nitrogen oxides and particulate emissions. It also results in noise reduction.

If you've been on a dock where a ship is sitting, there's a lot of noise from those generators, even when the ship's engines are turned off. So this is good from a working conditions point of view, both on board the ship and in port noise on board, by the way, on board ships, on board any vessel really can be a significant contributor to Mariner fatigue and that can lead to accidents. That's one of the many reasons why you want to reduce noise level in in a workplace area.

And investing in cold ironing shows support for green shipping initiatives. The shipping industry globally is facing increasing pressure to reduce its carbon footprint and ports that adopt this technology can position themselves as leaders in sustainable maritime practices. But as people have pointed out to me before, when I've talked about these types of projects, we're converting something that was previously running on petroleum to electricity. The source of the electricity is a factor in the overall net gain environmentally. So for cold ironing to be truly effective, it's essential that the electricity that's being supplied comes from renewable sources such as wind or solar.

So how does Washington State stack up? Well, the state generates electricity from a variety of sources, including hydropower, natural gas, nuclear and renewable sources. So where does Washington's electricity come from? Hydropower is big because of dams that generate electricity. Washington generates more electricity from hydropower than any other state, with 70 for hydroelectric power plants, including Grand Coulee and Chief Joseph Dams on the Columbia River, which are owned and operated by the federal government. In 2023, hydropower accounted for 25% of the nation's total utility scale hydroelectric generation.

Natural gas is also big. In 2023, natural gas was the second largest source of electricity generation in Washington state, fueling about 18% of the state's total electricity generation.

Nuclear energy is a factor as well. Washington has one nuclear power plant, the Columbia Generating Station, the Northwest's only commercial nuclear energy facility and the third largest electricity generator in the state. And that station produces millions of megawatts of carbon free electricity every year.

And other renewable sources of energy in Washington include wind, biomass and solar. In 2022, Tacoma Public Utilities reported that 9.06% of their power came from wind. .27 percent from biomass and 2.27% from solar.

Who else in the U.S. is using cold ironing in ports? As of May 20, 24. Ten U.S. ports were using high voltage systems to power big ships at berth with landside electricity instead of diesel engines. Many more ports use low voltage systems for tugs, fishing and offshore support vessels.

And if you watch industry news, you'll see that more and more support vessels like tugs are being that are newbuilds are being built as electric vessels, hybrid vessels and also purely electric vessels. So that

is evolving over time. And this is kind of an interesting milestone in our local region for electric power and reduced air pollution from ships.

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