

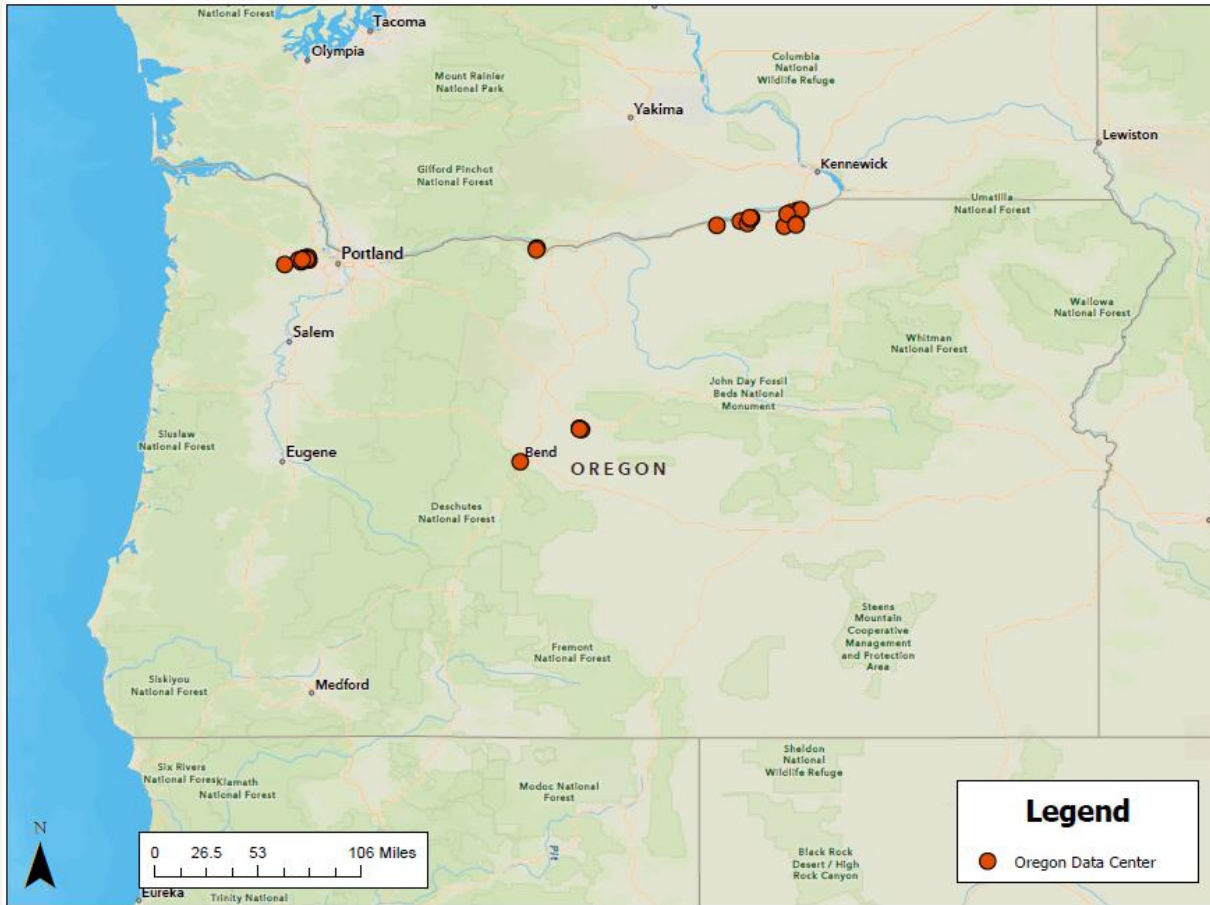


Data Center Air Quality Permitting

Oregon Department of Environmental Quality

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Permitted Data Centers in Oregon



Total number of data center campuses: 39

- Hillsboro: 16
- The Dalles: 3
- Boardman/Hermiston/Umatilla: 16
- Bend/Prineville: 4

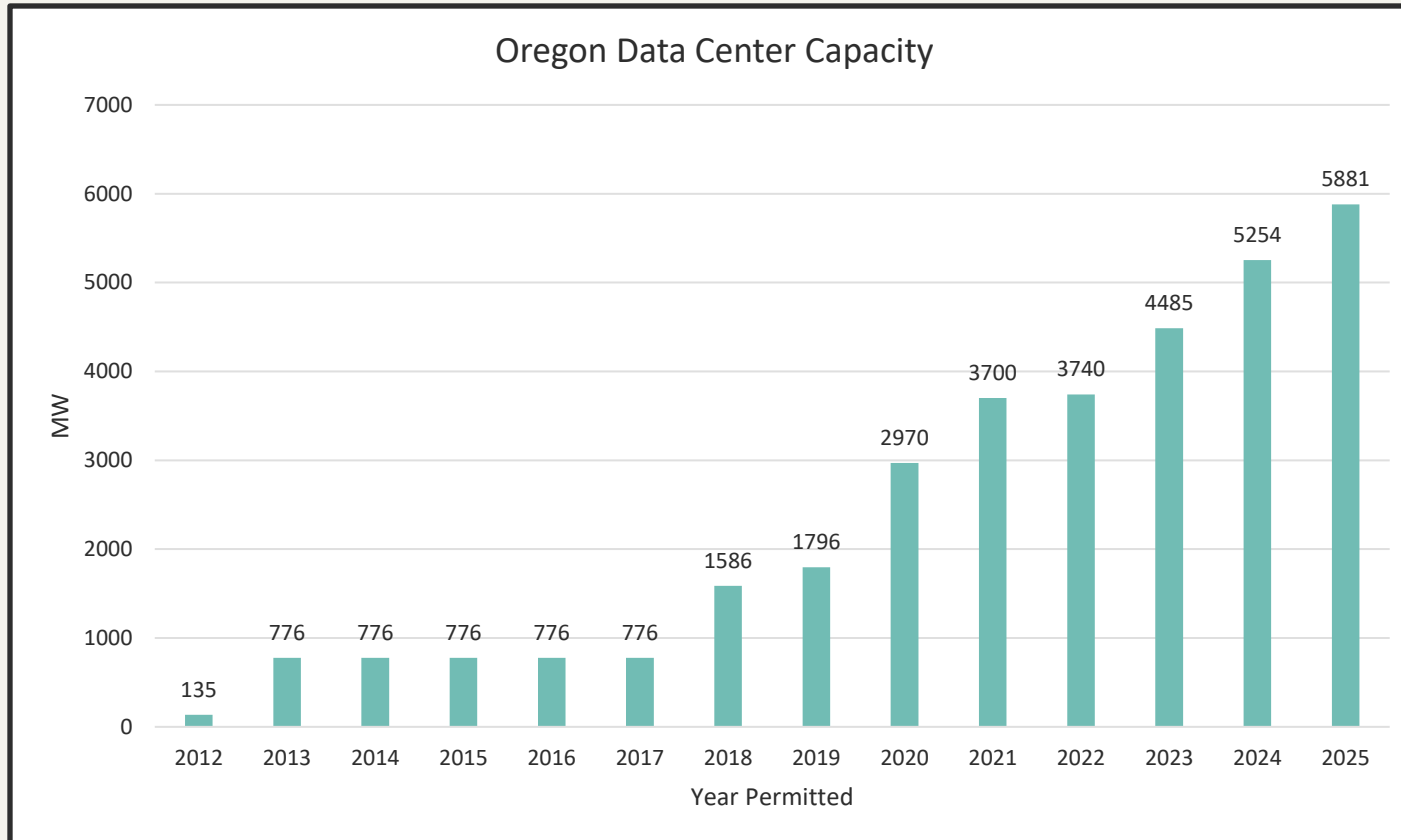
Picture showing a map of Oregon with data center locations marked by red dots.

Data Center Layout



Picture showing a data center campus with four data center buildings.

Data Center Growth



Current 2026 data

- Total number of large generators: 2,482
- Total Capacity: 6,328 MW

Figure showing increase of backup power generating capacity at data centers in Oregon from 2012 to 2025.

Sources of Air Pollution

Diesel emergency generators are used to provide backup power during emergency events related to loss of utility power.

“Non-emergency” operation such as maintenance, readiness testing, and dispatch operations are limited to 100 hours/year. Most permits have more restrictive operational limits.



Picture of a large generator.

Air Pollutants

Combustion of ultra-low sulfur diesel fuel and/or renewable diesel:

- Criteria pollutants
 - Nitrogen oxides (NO_x)
 - Carbon monoxide (CO)
 - Particulate matter (PM)
 - Volatile organic compounds (VOC)
 - Sulfur Dioxide (SO₂)
- Hazardous and toxic air pollutants
- Greenhouse gasses (GHG)

Note: Biodiesel is not currently allowed at any data centers due to different emissions profile.

Typical Operation

- Normal (non-emergency) operation
 - Biweekly readiness testing for 30 minutes
 - Annual load testing
- Emergency operation
 - Rare and related to utility power loss
 - Could increase over time with increased power demand and grid reliability issues

Dispatch operation

- Could be used to increase grid reliability
- Power is provided only to the facility itself
- Currently not permitted at most data centers
- Defined in federal regulations
- Limited to 50 hours per year, part of 100 non-emergency hours
- Additional site-specific emissions and operating limits in each permit

Air Quality Permitting

- Standard Air Contaminant Discharge Permit
 - Synthetic minor sources, limits on potential to emit
 - No major sources in Oregon
- DEQ evaluates compliance with all applicable state and federal regulations for normal (non-emergency) operations
 - Emission Limits
 - Facility-wide, criteria pollutants and GHG (Plant Site Emission Limits, tons/year)
 - Emissions standards for each stationary generator (g/kWh)
 - Toxic air contaminant emission limits, generator specific

Air Quality Permitting (cont.)

- Operational limits – hour of operation and/or fuel use
- Maintenance requirements
- Emissions testing
- Recordkeeping and reporting

Note: DEQ does not regulate emergency operations at non-major sources. However, data centers are required to stay below 100 tons/year of criteria pollutants (TV threshold) for total operations.

Permits for Old vs New Facilities

- Federal
 - Older, pre-2005, generators – maintenance requirements
 - New, post-2006, generators – each generator is certified by manufacturer to meet federal emission standards
- State
 - New facilities
 - Cleaner Air Oregon assessment, since 2018
 - Ambient air quality standards compliance demonstration, since 2021

Greenhouse Gasses

- All data center permits have plant-wide emission limits on GHG emissions for non-emergency operations
- Required registration and reporting to DEQ GHG Program for any facility emitting more than 2,500 metric tons of GHG/year
- In 2025, all data centers were below the GHG program reporting threshold

Available Emission Control Technology

- Selective Catalytic Reduction (SCR) - reduces NO_x
- Diesel Particulate Filter (DPF) - reduces diesel PM
- Diesel Oxidation Catalyst (DOC) - reduces CO and VOCs

Note: Federal and state rules do not require emissions controls for emergency generators because they are used infrequently.

Streamlined Permitting

- DEQ encourages emissions controls by offering a streamlined permitting option
- Applies to data centers that install generators with all three available emission control devices (or equivalent technology)
- Streamlined permit became available in 2025
- DEQ has not issued any streamlined permits yet, but there is a growing interest

How Does DEQ Ensure Compliance?

- Regular on-site inspections
- Emissions testing requirements
- Timely review of reports

All violations are evaluated, and based on severity, result in warning, corrective action requirements, and/or penalties and enforceable orders.

Questions?

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