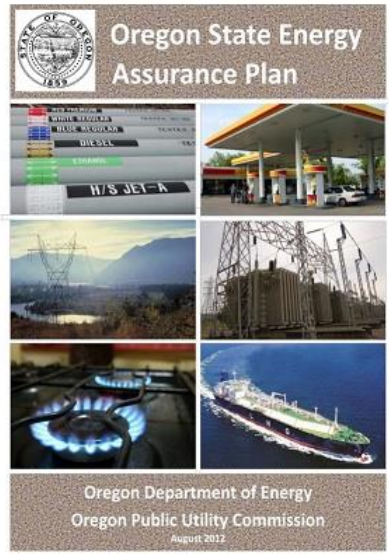
Deep Dive

State Energy Resilience Planning

Energy Assurance Plan



Supported by federal stimulus funding in 2009, the Oregon Department of Energy and the Oregon Public Utility Commission developed an Energy Assurance Plan (EAP).[1] The plan provides:

(i) An overview of the state's energy infrastructure and overall energy profile.

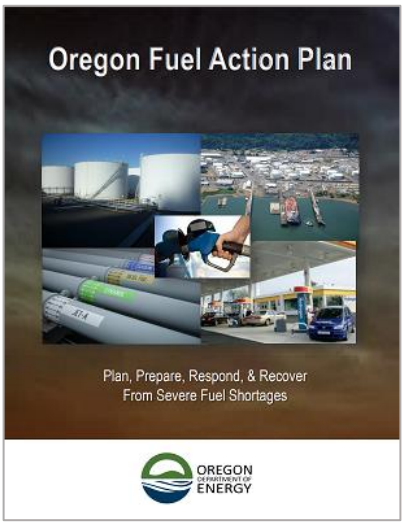
(ii) An evaluation of the role of renewables and smart grid technologies, at a high-level, in energy assurance planning.

(iii) A description of different types of energy emergencies that could occur in Oregon.

(iv) An explanation of how the state would respond to energy emergencies.

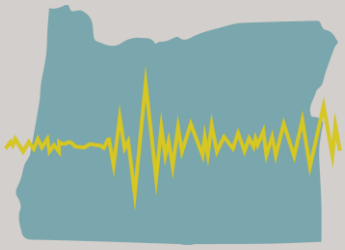
ODOE and OPUC are designated as the primary state agencies for planning, preparedness, response, and recovery to energy emergencies with potential effects on Oregonians. OPUC is responsible for developing and maintaining emergency response plans for electricity and natural gas emergencies, while ODOE is responsible for developing and maintaining an emergency response plan for the liquid fuels sector.

Oregon Fuel Action Plan



In 2017, ODOE released the Oregon Fuel Action Plan, which details how the state will respond to an event that causes severe shortages of liquid fuels.[2] ODOE developed the plan pursuant to ORS 175.750-785 to ensure that adequate fuel supplies will be provided to the state's emergency and essential service providers in the event of a severe or long-term fuel disruption or shortage. The plan, the first of its kind in the nation, identifies nine priority actions ODOE would take to arrange acquisition and delivery of fuel in support of the state's response and recovery efforts in times of crisis. The plan is a working document and will be updated as needed to ensure that all response strategies remain current and sync with those of our federal, tribal, military, state, local, and industry partners.

Oregon Fuel Action Plan… In Action



While the Oregon Fuel Action Plan is designed to address even the region's worst-case disaster — a 9.0 Cascadia Subduction Zone earthquake and tsunami, which would devastate the region's fuel infrastructure — all strategies in the plan are flexible and can be scaled down in response to a wide range of events:

August 2017 Solar Eclipse

ODOE activated the Fuel Action Plan in preparation for an influx of visitors to Oregon to view the first total solar eclipse in the United States in 38 years. ODOE worked with the petroleum industry leading up to the August event to maximize fuel volumes to meet the anticipated increase in demand. The agency worked with the industry to add fuel deliveries, and to schedule them at strategic times to avoid heavy traffic congestion. ODOE also successfully secured a temporary waiver from the Oregon Department of Transportation to lift "Hours of Service" restrictions, which ensured fuel haulers would not be fined if they exceeded the 11.5 hour limit to complete deliveries.

2017 Wildfire Season

Oregon battled as many as 17 fires simultaneously during summer 2017, wreaking havoc on fuel deliveries and stressing the supply of aviation fuel, unleaded gasoline, and diesel. In particular, the Eagle Creek Fire closed vehicle traffic on Interstate 84 and barge traffic on the Columbia River in September. ODOE implemented the Fuel Action Plan and worked with the petroleum industry and ODOT to ensure fuel haulers had viable alternate routes to complete deliveries. ODOE also worked with the U.S. Coast Guard to ensure fuel barges were vetted and given priority passage despite USCG's Shutdown Order of the Columbia River. As a result, three fuel barges were cleared for passage, delivering 420,000 gallons of ethanol, 900,000 gallons of aviation fuel, and 1,596,000 gallons of diesel with only minimal delay.

December 2016 Winter Storms

Snow and icy conditions caused wide-spread power outages, including some operations at the CEI Hub. Without power, Kinder Morgan was unable to transport jet fuel by pipeline to the Portland International Airport, which had less than two days' supply of jet fuel. ODOE implemented strategies from the Fuel Action Plan and worked with Portland General Electric to ensure the utility prioritized restoring power to the Hub. Despite treacherous conditions, PGE crews navigated safely through black ice and downed power lines to get power restored, and Kinder Morgan was able to deliver jet fuel to PDX before the airport ran out.

There is no single Oregon state agency with regulatory authority over the petroleum terminals located within the Critical Energy Infrastructure (CEI) Hub northwest of Portland. These terminals are expected to be severely damaged by a CSZ earthquake,[3] yet no single state agency can require these facilities to invest in seismic upgrades to their aging tanks, pipeline systems, and other facilities. The Oregon Department of Environmental Quality, meanwhile, is responsible for working with industry to develop and maintain the Oil Spill Prevention Program to reduce the risk of spills and minimize damage to human health and the environment when responding to spills.[4] DEQ's authority for developing this program is based on legislation adopted in 1991 that did not address seismic resilience, and its authority is limited to marine oil transfer facilities, which is a subset of the facilities located within the CEI Hub.[5]

Critical Energy Infrastructure Hub

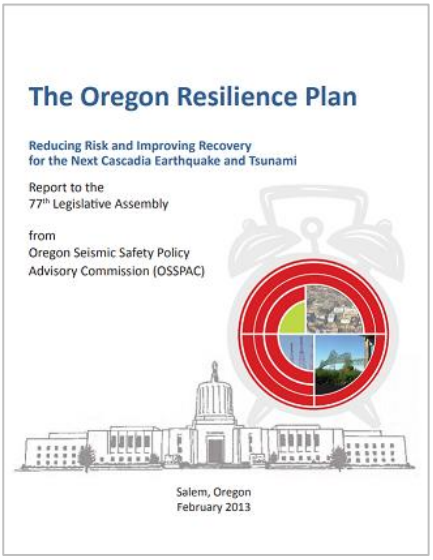
The CEI Hub is located along a six-mile stretch of the Willamette River in northwest Portland. The CEI Hub includes all of Oregon's major liquid fuel port terminals, liquid fuel transmission pipelines and transfer stations, natural gas transmission pipelines, a liquefied natural gas storage facility, high voltage electric substations and transmission lines, and electric substations for local distribution.

Nearly all of Oregon's refined petroleum products are imported by pipeline or marine vessels through the CEI Hub before being distributed throughout the state to end-use customers. A portion of the state's natural gas fuel supply also passes through the CEI Hub. The CEI Hub is vulnerable to a CSZ earthquake, according to the Oregon Resilience Plan:

- The CEI Hub is constructed on soils susceptible to major movement after an earthquake, including liquefaction — where solid earth behaves like liquid or quicksand.
- The 1960s-designed pipeline was not built to withstand ground movements from earthquakes.
- Fuel spills could affect the navigable waterway, impeding marine traffic and emergency response.
- Substations, transmission lines, and other infrastructure are vulnerable; severe damage could result in an electricity blackout.

The ORP recommends a number of actions to strengthen the CEI Hub, including working with energy sector companies to improve the resilience of their infrastructure located at the CEI Hub.[5]

Oregon Resilience Plan



The Oregon Resilience Plan was developed in 2013 by the Oregon Seismic Safety Policy Advisory Commission at the direction of the Oregon Legislature. The ORP evaluates the expected effects of a CSZ earthquake and tsunami to different sectors and regions of Oregon, with recommendations to reduce risk and improve recovery. These recommendations were formulated with the intention that, if implemented over the next 50 years, the state could achieve resilience targets as identified by the ORP to reduce timelines for the restoration of certain services following a CSZ earthquake. Chapter 6 of the ORP is focused on the state's energy sector, and identifies ten recommendations for the state to improve its resiliency.

The ORP also recommended that the state Legislature create a new position in state government—a State Resilience Officer—to "provide leadership, resources, advocacy, and expertise in implementing a statewide resilience plan." The Legislature followed this recommendation, creating the position with the passage of House Bill 2270 in 2015. With the subsequent appointment and confirmation of the state's first Resilience Officer in 2016, Oregon became one of the first states in the nation with a cabinet-level position in state government charged with coordinating resilience efforts.[6]

References

[1] Oregon Department of Energy and Oregon Public Utility Commission. Oregon State Energy Assurance Plan. 2012. Salem, OR. https://www.oregon.gov/energy/Data-and-Reports/Documents/2012%20Oregon%20State%20Energy%20Assurance%20Plan.pdf

[2] Oregon Department of Energy. Oregon Fuel Action Plan: Plan, Prepare, Respond, & Recover from Severe Fuel Shortages. 2017. Salem, OR. https://www.oregon.gov/energy/safety-resiliency/Documents/OregonFuel-Action-Plan.pdf

[3] Oregon Seismic Safety Policy Advisory Commission, 2013, Oregon Resilience Plan: Reducing Risk and Improving Recovery for the Next Cascadia Earthquake and Tsunami. https://www.oregon.gov/oem/Documents/Oregon_Resilience_Plan_Final.pdf

[4] Oregon Revised Statutes 468B.340 – 468B.415

[5] *Oregon Resilience Plan*, p. 164-72.

[6] Office of Governor Kate Brown. (2016, May 25). Senate Confirms Oregon's First Resilience Officer [Press release]. https://www.oregon.gov/newsroom/Pages/NewsDetail.aspx?newsid=1122

OREGON DEPARTMENT OF ENERGY

This Deep Dive is part of the *Oregon Guidebook for Local Energy Resilience: For Small and Medium Utilities*, first published in June 2019.

www.oregon.gov/energy | askenergy@oregon.gov | 503-378-4040