Oregon

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Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mail Code 28221T
Attention Docket ID No. EPA-HQ-OAR-2017-0355
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Administrator Pruitt:

The Oregon Department of Environmental Quality (DEQ) appreciates the opportunity to provide comment to the U.S. Environmental Protection Agency (EPA) on the proposal to repeal the Clean Power Plan (CPP). I provided verbal comments to EPA on this proposal at the public hearing in San Francisco on February 28th of this year. DEQ's comments have been developed through close collaboration with the Oregon Department of Energy (ODOE), and the Public Utility Commission of Oregon (PUC).

Oregon DEQ, strongly opposes the proposed repeal. Our opposition is rooted both in the urgency that we take serious steps at the national level to reduce greenhouse gas emissions, and the opportunity that the CPP provides for states to work cooperatively to accomplish emissions reductions in a cost-effective manner.

The Effects of Climate Change in Oregon

Climate change is already resulting in significant impacts in the Pacific Northwest, including: (1) decreased snow pack and resulting changes in stream flows, water temperature, and hydrology that in turn affect hydropower generation, fish habitat, and availability of drinking water; (2) rising coastal sea levels; and (3) increases in the frequency and size of forest and range wildfire.[1]

Ongoing research on the regional implications of climate change confirms observations, projections, and analyses made over the last decade.[2] Oregon and the surrounding region are experiencing the impacts of climate change now. August 2017 was the hottest August on record in Portland and Salem, Oregon.[3] In addition to increased heat-related emergency-room hospital visits during August

[1] *See, generally*, Oregon Climate Change Research Institute, Northwest Climate Assessment Report, 2013 (*available at* http://occri.net/wp-content/uploads/2013/11/ClimateChangeInTheNorthwest.pdf).
[2] Oregon Climate Change Research Institute, Northwest Climate Assessment Report – Two Page Summary, 2013 (*available at* http://occri.net/wp-content/uploads/2013/11/ClimateChangeNW_2pgSummary.pdf).
[3] Oregon Public Broadcasting, 2017 Hottest August on Record in Portland, Salem And It Ain't Over, Sept. 1, 2017, (*available at* https://www.opb.org/news/article/portland-salem-hottest-record-august-2017/)

of 2017,[4] the state's largest utility, Portland General Electric, broke records for the highest electricity use in a single hour using 3,976 megawatts.[5]

Forest fires continue to break records in the region and nationally. In 2017, the U.S. Forest Service announced record spending nationally on fighting wildfires with the cost topping more than $2 billion.[6] In 2017, the Eagle Creek Fire burned more than 48,000 acres in the Columbia River Gorge National Scenic Area,[7] closing the iconic Multnomah Falls to visitors, the most visited natural recreation site in the Pacific Northwest.[8] During the peak day of wildfire season in 2017, Oregon saw 586 emergency department visits related to asthma and respiratory-related issues, a jump from 428 visits the previous day and a 39 percent increase over the number expected for that day.[9]

Oregon's commercial fisheries also are being damaged by climate change; Oregon State University research published in 2017 found that spots along the West Coast had some of the highest levels of ocean acidification in the world.[10] Declining fishery catches impact coastal communities where local economies are heavily reliant on fisheries and fishery-related tourism.[11]

The CPP appropriately builds on the states' clean energy experiences

The CPP is designed to accelerate the ongoing shift of the electricity sector to cleaner energy sources. This builds upon current economic trends and the policy experiences of states that have already begun enacting clean energy policies. Oregon has a long history of enacting such policies, including:

- Since 1989, the PUC has required the state's electric utilities to perform integrated resource planning through a "least-cost and least-risk" approach. In 1993, the PUC required that the state's utilities include an analysis of risk of future costs of potential greenhouse gas regulation in their integrated resource plans.
- In 2010, the state's stakeholders reached agreement to close the state's only coal-fired power plant by 2020. This closure will happen a full 20 years prior to the plant's original retirement schedule.
- In 1999, Oregon created an independent nonprofit, the Energy Trust of Oregon, to deliver cost-effective energy efficiency and market transformation funded through a public purpose charge collected from ratepayers of electric investor owned utilities. From 2002-2016, the Energy Trust of Oregon has saved more than five million megawatt hours of electricity through investments in energy efficiency.

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[4] Oregon ESSENCE (Oregon's Syndromic Surveillance Project) Hazard Report, Summer 2017
[5] Willamette Week, PGE customers broke records in Portland heat eave, using enough energy on air conditioning to power nearly four cities the size of Seattle," Aug. 5, 2017, (*available at* http://www.wweek.com/news/2017/08/05/pge-customers-broke-records-in-portland-heat-wave-using-enough-energy-on-air-conditioning-to-power-nearly-four-cities-the-size-of-seattle/)
[6] The Oregonian, Wildfires cost record $2 billion to fight, Forest Service says, Sept. 14, 2017, (*available at* http://www.oregonlive.com/wildfires/index.ssf/2017/09/wildfires_cost_record_2_billio.html)
[7] Oregon Public Broadcasting, Eagle Creek fire 100 percent contained, Nov. 30, 2017, (*available at* https://www.opb.org/news/series/wildfires/eagle-creek-fire-100-percent-contained/)
[8] U.S. Forest Service, Multnomah Falls, (*available at* https://www.fs.usda.gov/recarea/crgnsa/recarea/?recid=30026)
[9] Oregon Syndromic Surveillance Project (ESSENCE), Acute and Communicable Disease Prevention Section, Public Health Division, Oregon Health Authority. September 5, 2017 data retrieved January 11, 2018
[10] Oregon Public Broadcasting, West coast ocean acidification rates among highest in the world", June 2, 2017, (*available at* https://www.opb.org/news/article/west-coast-ocean-acidification-rates-among-highest-in-world/
[11] Dalton, M.M., K.D. Dello, L. Hawkins, P.W. Mote, and D.E. Rupp (2017) The Third Oregon Climate Assessment Report, Oregon Climate Change Research Institute

- In 2007, the state enacted a Renewable Portfolio Standard, mandating that the state's largest utilities generate or obtain a portion of the electricity they provide from renewable sources. In 2016, the state increased the requirements of the state's largest, investor owned utilities to require 50 percent of their electric load be provided by qualifying renewable energy.
- In 2016, Oregon became the first state to prohibit the inclusion of coal-fired energy in the electric rates of the state's ratepayers through the state's Coal-to-Clean law.

If states collaborate and cooperate, the CPP offers the United States a path to reduce greenhouse gas emissions through an integrated approach.

With the CPP, EPA has adopted a standard that provides the flexibility states need to develop and implement strategies that make sense for their individual economic and environmental conditions. The CPP encourages states to work together to reduce emissions, reflecting the regional nature of our electricity grid. It is *not* a one-size-fits-all approach, contrary to a recent EPA press release.[12] The CPP recognizes that energy efficiency and renewable energy can be cost-effective mechanisms for reducing greenhouse gas emissions (GHGs) from electricity generation. As designed, the CPP would allow states to determine how best to leverage these opportunities to collectively achieve the overall standard developed by EPA. This is exactly the type of cooperative federalism approach that is a guiding principle for EPA.[13] These factors taken together mean that the CPP provides a cost-effective economic opportunity for states and utilities to work together to reduce emissions.

The CPP does not pose an economic risk

In its proposed repeal of the CPP, EPA argues that the CPP's inclusion of generation-shifting and fuel-switching in its design would have "potentially serious economic and political implications." However, the experience of Oregon indicates otherwise. Compliance with the CPP would involve actions of the same nature as changes already occurring in the electricity sector. While the CPP will accelerate shifts to low-carbon sources of electricity generation, the CPP is by no means the only or even the primary driver of these shifts in the Pacific Northwest.

The electricity sector is already undergoing significant changes nationwide. The combination of low-cost, abundant natural gas, an aging coal plant fleet, and the declining cost of renewable energy technologies have shifted electricity markets toward low- and zero-emission sources. Decarbonisation of the electricity supply becomes even more important for reducing greenhouse gas emissions as more and more electric vehicles take to the roads nationally and in the Pacific Northwest. As an example, in Oregon Governor Brown's Executive Order 17-21 sets a target for an accelerating shift to electrify our transportation sector -- 50,000 registered electric vehicles by 2020.[14]

Oregon's non-hydropower renewable energy increased by more than 700 percent from 2005 to 2014 (0.94 to 6.76 percent of the total).[15] Chief among these resources are wind facilities developed along the Columbia River near our legacy hydropower resources. With excellent wind resources, Oregon

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[12] U.S. EPA (2018). Latest Inventory of U.S. Greenhouse Gas Emissions and Sinks Shows Continued Progress. https://www.epa.gov/newsreleases/latest-inventory-us-greenhouse-gas-emissions-and-sinks-shows-continued-progress
[13]U.S. EPA (2018). Cooperative Federalism at EPA. https://www.epa.gov/home/cooperative-federalism-epa.
[14] http://www.oregon.gov/gov/Documents/executive_orders/eo_17-21.pdf
[15] Oregon Department of Energy (ODOE) (2017). 2005 and 2014 Electricity Resource Mix. Current year data available at: http://www.oregon.gov/energy/energy-oregon/Pages/Electricity-Mix-in-Oregon.aspx. Historical data available upon request.

has more than 3,200 MW of wind energy facilities have been installed since 1998.[16] Oregon is ranked eighth in the nation for installed wind capacity, and wind energy provided about 12 percent of all in-state electricity production in 2016.[17] Other renewables make up a smaller share of our resource mix, but are growing:

- Oregon has about 300 MW of solar installed across the state; more than half was installed in the last two years.[18]
- Solar energy systems are installed on more than 11,000 homes throughout Oregon. Oregon businesses have solar installations, and standalone solar energy systems provide energy directly to Oregon utilities.[19]
- In 2016, Oregon took steps to develop a community solar program – and our utilities' green energy programs boast some of the highest participation rates in the U.S.[20]
- This fall, a 56 MW solar facility, developed in partnership with an Apple data center in Central Oregon, became the first utility-scale project in the state to exceed 10 MW in capacity.[21]
- The state's Energy Facility Siting Council is currently reviewing a 75 MW solar project, and several hundred megawatts of additional solar projects are planned.[22]
- We also have more than 40 MW of low-impact hydropower projects.

Oregon is ranked fifth in the nation for geothermal electricity generation.

- The state's first geothermal power plant began operating in 2010 at the Oregon Institute of Technology with an initial electricity-generating capacity of 280 kilowatts (kW).[23]
- In 2012, a 22 MW facility went online in eastern Oregon.[24]
- Geothermal energy is also used for direct space heating applications in Oregon schools, hospitals, prisons, and homes, offsetting electricity consumptions and traditional combustion heating devices.[25]
- By 2015, we had 35 MW of installed capacity, plus another 99 MW planned.[26]

The territorial sea off our coast offers one of the best offshore wind and wave resources in the country. The southern Oregon coast has the best wind resource on the west coast. Oregon has taken a lead among the western states with the Northwest National Marine Renewable Energy Center at

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[16] U.S. Energy Information Administration (U.S. EIA) (2017). https://www.eia.gov/state/print.php?sid=OR
[17] American Wind Energy Association (2017). State Wind Energy Facts: Oregon. http://awea.files.cms-plus.com/FileDownloads/pdfs/Oregon.pdf
[18] Oregon Solar Energy Industries Association "The Oregon Solar Plan, March 2017" http://oseia.org/rw_common/plugins/stacks/armadillo/media/OregonSolarPlanFINAL3202017.pdf and Business Oregon Solar Development Incentive Program, http://www.oregon4biz.com/Oregon-Business/Tax-Incentives/Solar-Incentive-Program/projects.php and Portland Business Journal, https://www.bizjournals.com/portland/news/2017/10/30/apple-solar-farm-oregons-biggest-goes-live.html
[19] Oregon Department of Energy Residential Energy Tax Credit database
[20] National Renewable Energy Laboratory "Status and Trends in the U.S. Voluntary Green Power Market". https://www.nrel.gov/docs/fy18osti/70174.pdf
[21] Portland Business Journal https://www.bizjournals.com/portland/news/2017/10/30/apple-solar-farm-oregons-biggest-goes-live.html
[22] Energy Facility Siting Council, Oregon Department of Energy
[23] Oregon Department of Energy, http://www.oregon.gov/energy/energy-oregon/Pages/Geothermal.aspx
[24] Ibid.
[25] Ibid.
[26] NREL Geothermal Power Generation Map https://www.nrel.gov/gis/images/2015-04-17_Geothermal_Capacity.jpg

Oregon State University. The project includes a wave test facility on campus and test buoys deployed off the Coast.

As renewable resources continue to rise in Oregon, we're developing strategies to improve the resilience of energy systems and minimize integration challenges. Energy storage is at the heart of this effort. Several energy storage pilot and research projects are underway, and we expect to see more as costs come down.

Energy efficiency is our second largest carbon-free energy resource in the Pacific Northwest, after hydropower. We've met increased demand for electricity by tapping efficiency strategies as a least-cost resource instead of building new power plants. The Northwest Power and Conservation Council reports that since 1978:

- Our region has produced nearly 6,000 average megawatts of savings through efficiency program improvements.[27]
- Just over the past six years, the Pacific Northwest saved enough electricity to avoid the need to build four new natural gas-fired power plants.[28]

Over the past decade, Oregon reduced energy use across our residential, commercial, and industrial sectors whiles our state population and GDP grew. In 2016, Oregon's GDP was 39 percent higher than in 2006 while total statewide greenhouse gas emissions were ~9 percent lower.[29] Additionally, Oregon's carbon intensity in emissions per GDP reduced by roughly 35 percent during the same time period.[30] Our experience demonstrates that increasing the share of clean, carbon-free electricity generation does not require sacrificing economic growth, and we therefore disagree with EPA's simplified and overgeneralized conclusions regarding CPP's "potentially serious economic and political implications."

The proposed changes to the RIA are not based on science

Executive Order (E.O.) 12866, Regulatory Planning and Review, and E.O. 13563, Improving Regulation and Regulatory Review, requires federal agencies to conduct a regulatory impact analysis (RIA) for significant regulatory actions; both the CPP and its proposed repeal require such analysis. E.O. 13563 requires federal agencies in their RIAs to quantify anticipated benefits and costs of proposed rulemakings as accurately as possible using the best available techniques, and to ensure that any scientific and technological information or processes used to support their regulatory actions are objective.

EPA has asked for comment on the "modeling assumptions, uncertainties, and other relevant matters" related to the RIA. Oregon DEQ does not agree with several proposed changes to the RIA from the

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[27] Northwest Power and Conservation Council (2016). Seventh Northwest Conservation and Electric Power Plan. https://www.nwcouncil.org/energy/powerplan/7/plan/
[28] Ibid.
[29] U.S. Bureau of Economic Analysis (2018). Interactive Data Application for Gross Domestic Product by State. https://www.bea.gov/iTable/, and Regional BEARFacts, https://www.bea.gov/regional/bearfacts/ with data from the Oregon Department of Environmental Quality's Greenhouse Gas Reporting Program, http://www.oregon.gov/deq/aq/programs/Pages/GHG.aspx
[30] Ibid.

original CPP RIA. The changes do not represent the best available techniques or objective scientific and technological information as required by the E.O.

Specifically, we object to EPA's changes to its 1) approach to calculating the social cost of carbon, 2) assumptions regarding the health benefits of PM2.5 reductions, 3) assessment of environmental justice impacts related to the CPP, and 4) consideration of the co-benefits of regulation in its cost benefit analysis. There is a well-documented link between exposure to air pollutants common to fossil-fuel power plants and risk of heart attacks and strokes,[31,32] These health impacts have real economic consequences. In 2011, medical costs associated with heart attacks and strokes in Oregon were over $1.1 billion and $250 million, respectively.[33] EPA's changes do not have a basis in the peer-reviewed scientific literature and ignore the direct health and environmental impacts of exposure to pollution from power plants that have been studied and documented by scientists and public health practitioners for decades, including EPA's own scientists in its Integrated Science Assessment for Particulate Matter.[34]

The CPP is well balanced between the need for significant reductions of GHGs from the power sector and the flexibility to accommodate states with different electricity resource mixes and reduction opportunities. As such, I strongly urge EPA to reject the proposed repeal of the CPP.

April 26, 2018

Richard Whitman, Director
Oregon Department of Environmental Quality

Date

Cc:
Janine Benner, Director, Oregon Department of Energy
Jason Eisdorfer, Utility Program Director, Public Utility Commission of Oregon
Lillian Shirley, Public Health Director, Oregon Health Authority

[31] Luo, C., Zhu, X., Hou, L., Zhang, J., Cao, J., & Wang, A. (2015). Short-term exposure to particulate air pollution and risk of myocardial infarction: a systematic review and meta-analysis. Environ Sci Pollut Res Int., 14651-62. doi:10.1007/s11356-015-5188-x

[32] Cesaroni, G., F, F., M, S., ZJ, A., C, B., R, B., . . . Leander, K. (2014). Long term exposure to ambient air pollution and incidence of acute coronary events: prospective cohort study and meta-analysis in 11 European cohorts from the ESCAPE Project. BMJ, 348. doi:10.1136/bmj.f7412

[33] Oregon Health Authority. (2013). Retrieved from Heart Disease and Stroke Prevention Data and Publications: https://public.health.oregon.gov/DiseasesConditions/ChronicDisease/Documents/OHA8582_AllVolumes.pdf

[34]U.S. EPA. Integrated Science Assessment (ISA) for Particulate Matter (Final Report, Dec 2009). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F, 2009. https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=216546