

Millennium Bulk Terminals - Longview EIS, c/o ICF International  
c/o Landowners and Citizens for a Safe Community  
PO Box 2484  
Longview, WA 98632

November 13, 2013

Dear Department of Ecology, the Army Corps of Engineers, and Cowlitz County:

As the Department of Ecology, the Army Corps of Engineers, and the County wrestle with their choice of scope of the environmental impact of coal transportation through Washington State, it is important to remember that the negative impact of coal is felt at all levels of abstraction. From the dismay of an individual who is hindered in their daily commute to work by an unsecured, open-topped coal train or a hiker who encounters coal beside or in our lakes and streams under train bridges, to the fallout of coal use in the form of atmospheric mercury pollution in Washington State waterways and the worldwide environmental impacts of global warming, the consequential use of coal is currently in high circulation with regard to news coverage, scientific studies and governmental policymaking. In a plea to broaden Environmental Impact Statements (EIS) of both Ecology and the Army Corps regarding the environmental impact of coal, and in the request to ban “all things coal” in Washington State, this letter addresses the coal use at the state and world level.

**1. WASHINGTON IS IMPACTED TWICE, NOT ONLY THROUGH THE TRANSPORT OF COAL THROUGH THE STATE, BUT ALSO BY ASIAN COAL BURNING IMPACTS ON WASHINGTON'S WATERWAYS AND FOOD CHAIN THROUGH THE EMISSION OF DANGEROUS LEVELS OF MERCURY**

China's hunger for energy is coming at a cost to Washingtonians. Traveling across the Pacific Ocean via the jet stream, China's pollution has been identified along the western states of America.<sup>1</sup> One of the greatest concerns from China's traveling toxins is mercury, which is emitted into the atmosphere from coal use. In a publication issued by Ecology and the Department of Health in 2003, the negative impacts of coal use and its contribution to highly-damaging mercury in Washington State's waterways was clearly and concisely expressed:

All forms of mercury are toxic to humans and other animals, depending on the route and amount of exposure . . . . Human beings can be exposed through . . . [e]ating certain fish that are long-lived or are predators that have accumulated mercury in their tissues through the food web . . . . The most common source of exposure to mercury for most people is eating of fish that contain methylmercury, a carbon-containing (organic) compound of mercury . . . (that are found in coal, for instance) [which] undergo chemical reaction during combustion and release elemental mercury to the air . . . . Most elemental mercury released into the air is circulated worldwide at high atmospheric levels. It may react with other chemicals, especially chlorine compounds, in the atmosphere and be deposited

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<sup>1</sup> See *China's Rise Creates Clouds of U.S. Pollution* at <http://aliciapatterson.org/stories/china%E2%80%99s-rise-creates-clouds-us-pollution> for an example of such findings.

through rain or snow precipitation anywhere worldwide . . . . Once it reacts and precipitates to soil or sediment, its compounds can enter the food web.

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Mercury gets into fish through a complex process that involves many steps (see Figure 1). First, mercury in the form of mercuric chloride from combustion of mercury-containing materials enters bodies of water by being deposited directly on water, or on land that drains into the water. The combustion process causes chemical reactions between other substances and mercury, forming fine particles in air that can be caught up in water droplets that later fall to earth as rain or snow. Run-off from land puts the inorganic mercury into streams and lakes throughout their watershed. Once in sediments of streams and lakes, bacteria can take up the deposited mercury, and change it chemically to the organic form (methylmercury), which does not readily leave the bacteria.

Animals that eat the bacteria accumulate the mercury compounds within the bacteria. Because most living things are not very efficient at extracting energy from food, they must eat many times their own weight to sustain their life. Mercury in food is excreted very slowly and is left largely bound up in cells. Because of these qualities, it increases in amount over time within individual living things if they are continually exposed to mercury. Invertebrate organisms eat bacteria and other mercury-containing microorganisms in large amounts. Large fish eat many times their weight in small fish and invertebrates. At each step of this food chain, the amount of mercury left behind in tissues increases. Predatory fish that are long-lived can accumulate hundreds of thousands to millions of times the concentration of mercury that entered the water as precipitation or run-off. Human beings can be exposed to mercury when they eat fish that have high mercury concentrations. The amount of mercury that human beings get depends on the amount of fish they eat, and the concentrations in the fish species they choose to eat.<sup>2</sup>

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<sup>2</sup> *Washington State Department of Ecology and Washington State Department of Health, Washington State Mercury Chemical Action Plan*, Department of Ecology Publication No. 03-03-001, pp. 2-4 (January, 2003).  
<https://fortress.wa.gov/ecy/publications/publications/0303001.pdf>.

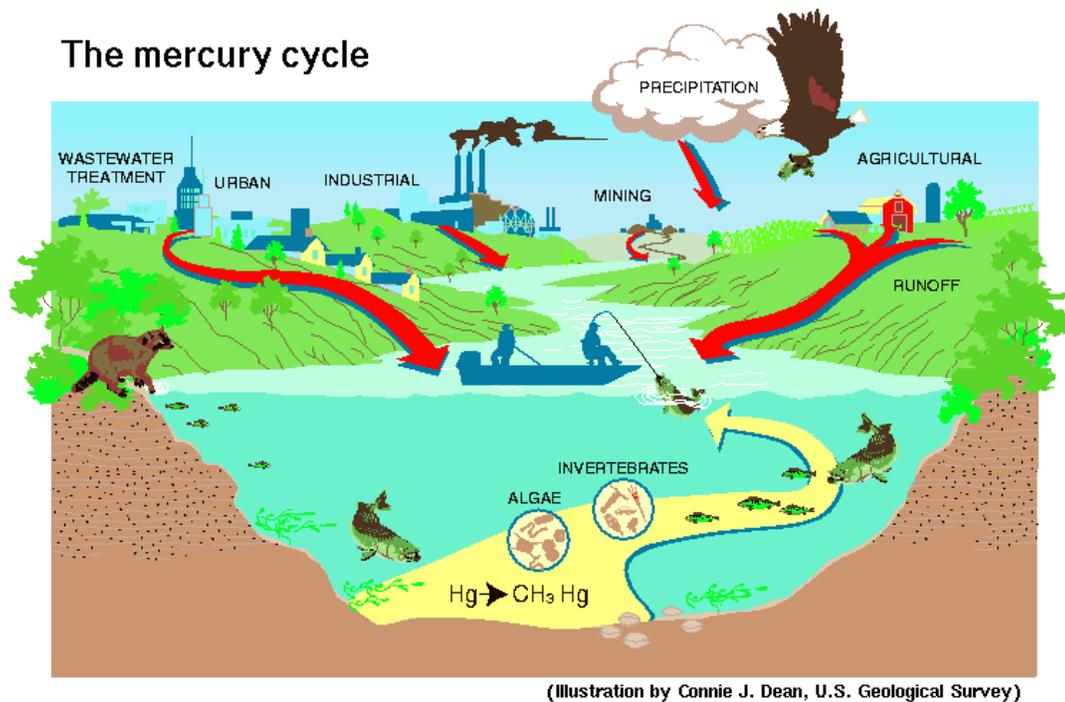


Figure 1: Mercury Transport Cycle.<sup>3</sup>

Ecology and DOH's findings go on to say that "[l]imiting mercury releases into the atmosphere from burning coal and waste and from other industrial processes will reduce fall-out of mercury to water bodies and watersheds, and ultimately will reduce mercury concentrations in fish . . . . Reducing mercury in fish will reduce exposure for most people." With regard to the sources, the 2003 study stated that:

[w]inds and weather systems entering Washington carry mercury associated with the global cycle. Wet deposition (in rain and other precipitation) and dry deposition (in dust and aerosols) transport mercury from global and local atmospheric sources to land, water, and vegetation. While assertions have been made about specific percentages of Washington's mercury load that is transported from specific geographical areas (e.g., Asia, East Asia, China), these assertions could not be verified.<sup>4</sup>

However, from 2003 to 2013, further studies have conclusively shown that coal use is impacting the Pacific Ocean, the United States, and Washington State waterways in the form of toxic mercury accumulation in fish originating from coal-fired power plant emissions in Asia.<sup>5</sup> Another Washington State Department of Ecology study from 2009 focused on the trans-Asian

<sup>3</sup> *Id.* at 3.

<sup>4</sup> *Id.* at 12.

<sup>5</sup> Methylmercury production below the mixed layer in the North Pacific Ocean. *Nature Geoscience*, 6, 879-884 (2013). doi 10.1038/ngeo1918; Sources of Mercury Exposure for U.S. Seafood Consumers: Implications for Policy. *Environmental Health Perspectives*, 118 (1), pp. 137-43 (2009) retrieved from: <http://dx.doi.org/10.1289/ehp.0900811>; Mercury sources, distribution, and bioavailability in the North Pacific Ocean: Insights from data and models. *Global Biogeochemical Cycles*, 23 (2), published online (8 pages) (2009) DOI: 10.1029/2008GB003425.

impact of mercury on Washington State waters, finding that "[t]he high levels of [mercury] contamination found in fish tissue at the [Washington State] lakes [studied] have occurred under atmospheric conditions near the global background."<sup>6</sup>

How much impact does China's coal pollution have on Washington State? This is precisely the type question that deserves to be answered within the scope of the Environmental Impact Statement. To do otherwise is to ignore the obvious need for such an issue to be included in the EIS. In support of identifying and mitigating the pollution that is affecting Washington, Governor Jay Inslee has joined the Climate Legislative and Executive Workgroup, which was created under Engrossed Second Substitute Senate Bill 5802 (E2SSB 5802) and whose goal is to create and implement strategies to limit greenhouse gas emissions per RCW 70.235.<sup>7</sup> There is no doubt that China's coal pollution will be identified as a significant contributor to Washington's overall greenhouse gas measurements, likely in the millions of tons of CO<sub>2</sub> emissions into the atmosphere; it is vital that Ecology takes into consideration the broad and long-term impacts that the approval of coal transportation through Washington will have.

## 2. CHINA'S NEW SYNTHETIC NATURAL GAS PRODUCTION USES COAL, AND WILL RESULT IN SEVEN TIMES THE POLLUTION AND A TRIPLING OF CHINA'S GREENHOUSE EMISSIONS

While China's consumption of coal as a source of energy may be dropping, it is not without an alternative consequence. A recent study conducted at Duke University<sup>8</sup> has reported that China intends to create up to 40 plants to synthesize natural gas from coal. This process produces seven times the greenhouse gas emissions than burning natural gas, 82% more carbon than a coal burning power plant, and estimates that such production will triple China's already world-leading greenhouse gas emissions. This action by China may likely compound the aforementioned mercury concerns as well as the threat of increased global warming. Ecology and the Corps's EISs are precisely on point with regard to determining what "seven times the greenhouse emissions of natural gas," "82% more carbon than coal-burning," and "triple China's overall emissions" mean to Washington State as a result of providing China with the coal to effectuate its goals.

## CONCLUSION

With such a threat of significantly-increased coal-originated emissions on the western horizon, the only logical step the United States at large and Washington State in specific can do is to prohibit the transportation and export of coal to Asian markets. This summer, President Obama spoke out strongly about global warming, stating that "[n]inety-seven percent of scientists . . . [have] acknowledged the planet is warming and human activity is contributing to it . . . As a President, as a father, and as an American, I'm here to say we need to act."<sup>9</sup> This fact

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<sup>6</sup> *Mercury Sources to Lake Ozette and Lake Dickey: Highly Contaminated Remote Coastal Lakes*, Washington State USA. Washington State Department of Ecology, p. 8 (2009).

<sup>7</sup> See <http://www.governor.wa.gov/issues/economy/climateWorkgroup/default.aspx> for details on the Climate Legislative and Executive Workgroup.

<sup>8</sup> China's synthetic natural gas revolution. *Nature Climate Change*, 3, 852-854 (2013). doi: 10.1038/nclimate1988.

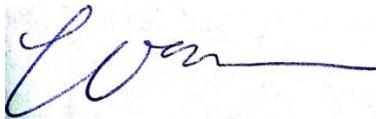
<sup>9</sup> President Barack Obama's speech on climate change, June 25, 2013. <http://www.bloomberg.com/news/2013-06-25/-we-need-to-act-transcript-of-obama-s-climate-change-speech.html>.

was validated by the Intergovernmental Panel on Climate Change, who said in their 2013 findings that:

it is extremely likely (indicating a 95% or greater likelihood<sup>10</sup>) that human influence has been the dominant cause of observed warming since the mid-20th century . . . . Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system. Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions. "<sup>11</sup>

Given the near-unanimous scientific consensus about the human causation of global warming, the breadth of the local and global impacts identified through coal, and the heightening governmental efforts to implement a policy to mitigate global warming sources, the Department of Ecology and Army Corps of Engineer's scope within their Environmental Impact Statements should be as broad as possible to encompass these concerns, and the heavy burden of such Statements should be felt by those who are held responsible by the public, for the public, to make them. Washington State has a golden opportunity to set the bar for itself and for other coastal states with regard to what will and will not be allowed to travel through its borders. I genuinely hope that the Washington State governmental agencies in charge of a decision that will impact seven million Washingtonian lives do so with the greater good of not just our population in mind, but with clarity of conscience toward the over seven billion people on our planet as well. Please bar the transportation of coal trains through Washington State and prohibit the export of coal from Washington State.

Sincerely,



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<sup>10</sup> *Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties*, Intergovernmental Panel on Climate Change, p. 3 (July, 2010).

<sup>11</sup> *Climate Change 2013: The Physical Science Basis Summary for Policymakers*, Intergovernmental Panel on Climate Change, p. SMP-12, 14 (September 27, 2013).