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Washington Department of Ecology
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Submitted via the Washington State Department of Ecology's KMMEF DSSEIS web portal

I am submitting these comments in response to the release of the Washington State Department of Ecology's publication of the Draft Second Supplemental Environmental Impact Statement (DSSEIS) for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011).

The results of the Department's DSSEIS analysis, "indicate that the KMMEF would slow the global increase in emissions arising from methanol production and use."[i] The analysis performed by the Department is complex with many variables. I am specifically focusing these comments on the use of coal to methanol manufacture in China.

As the DSSEIS explains, China is the world's largest methanol market, accounting for 60% of the entire globe's use and production.[ii] While the largest consumer, China is not the only factor in the increase in supply and demand for methanol. As the DSSEIS notes, global methanol use increased by 24% between 2015 – 2020.[iii] And as the DSSEIS delineates, a large driver in the increase in demand is associated with increased use of methanol to produce olefins, which increased by 58% over this same time period.[iv]

Nowhere is this trend more readily observable than in China where over half of the methanol consumed is done so for the purpose of producing olefins[v], where 76% of domestically produced methanol is derived from coal.[vi]

The DSSEIS does a thorough job analyzing and delineating the market forces driving this development, noting that of the three feedstocks Chinese producers primarily employ to produce methanol, that the use of coal as a feedstock is the most profitable for them.[vii] While market forces are undoubtedly a primary factor in understanding methanol production trends in China, Chinese government policy plays an important role as well.

Chinese President Xi's latest remarks to the United Nations General Assembly included a commitment on his part to have China achieve carbon neutrality by 2060. While some might debate the merits of Xi's articulated timeframe, it's what else he has committed to with regard to Chinese emissions that is really worth paying attention to in the near term, namely, that China has a goal of hitting peak carbon emissions in 2030 – ten years from now. And they have not committed to what level of emissions that peak will be. In the meantime, China's emissions continue to grow.

What is a large factor in driving this increase in emissions? China's continued *growth* in its use of coal. Despite China's commitment to the Paris Climate Accord and Chinese government leaders articulation of efforts to combat climate change, China's use of coal continues to rise.

To be sure, as Columbia University's Center on Global Energy Policy's "2019 Guide to Chinese Climate Policy" ("the Guide") points out, "The Chinese government has adopted short- and medium-term goals for limiting emissions of heat-trapping gases and a wide-ranging set of policies that contribute to

meeting those goals. Those policies are shaped in part by other objectives, including promoting economic growth, cutting local air pollution and developing strategic industries.[viii]"

The "2019 Guide to Chinese Climate Policy" also states that in 2018, China's carbon emissions rose approximately 2.5%, the largest annual increase in five years. This increase was driven, in part, by China bringing 30 GW of new coal-fired power capacity online in 2018. Capacity additions for coal fired power plants continued at the same pace in the first half of 2019 and China continued to lead the world in financing new coal fired power plants around the world.[ix]

That's why one of the conclusions of the report is, "For these reasons and more, stated policies—while important—are just part of the picture when it comes to understanding the Chinese response to climate change.[x]"

China has articulated several broad climate change goals including:

1. achieve the peaking of carbon dioxide emissions around 2030, making best efforts to peak early;
2. lower carbon dioxide emissions per unit of GDP by 60%–65% from the 2005 level by 2030;
3. increase the share of non-fossil fuels in primary energy to around 20% by 2030[xi]

Despite these goals, China's reliance on coal continues to be unshaken. The Columbia Center's Guide details how China continues to use more coal than the rest of the world combined, with just over half of global consumption.[xii] In 2018, approximately 20% of all global CO2 emissions were from Chinese combustion of coal.[xiii] While Chinese coal use declined 2014 – 2016, it rose again in both 2017 and 2018.[xiv]

China's policy landscape regarding coal usage cuts both ways: while decreasing the use of coal is a stated objective of the government, several government policies also promote its use. In particular, the Chinese government continues to develop policies that promote the use of their abundant coal resources for high value industries, most notably, for production of methanol to feed the chemical industry. This policy tension at the national level also operates in an environment where provincial governments remain under tremendous pressure to continue to drive economic growth and productivity. The engine many provinces rely on to help drive that growth is China's abundant coal resource.

The on the ground trends described in the Columbia Center's Guide continue unabated in 2020. According to a recently published report by The Global Energy Monitor, the central government's relaxation of restrictions on new coal plant development has meant huge investments into coal infrastructure. The 249.6 gigawatts of coal-fired capacity currently planned or being constructed in China represents a 21% increase over 2019 and the capacity *under development* is more capacity than is currently online in either the United States (246.2 GW) or India (229.0 GW).[xv] In addition to new plant capacity coming on line, China's coal production has also swelled in 2020 with production increasing to 1.5 billion tonnes, an increase over 2019.[xvi]

All available literature and government policy publications suggests the Chinese government continues to view coal as a valuable asset in producing petrochemicals.

China has moved aggressively to advance its coal-to-chemicals industry, deciding in 2010 to build the world's only significant methanol derived olefins industry – and produce that methanol from coal. In

2010, the production of olefins from coal was near zero. The Chinese Government's 12th Five Year (2011-2015) plan listed coal- to-chemicals productions as a top priority. And China's National Energy Administration's 2015 "Action Plan for Clean and Efficient Use of Coal (2015 – 2020) promotes the coal chemicals industry.[xvii]

The current 5-year plan (2016-2020), China's 13th, continues to call out and highlight the importance and significance of the coal-to-chemical industry in China.

Chapter 6 of the 5-year plan, titled "Ensure Innovation in Science and Technology Takes a Leading Role" contains Box 3 on page 25 – "Program's for Sci-Tech Innovation 2030." This chapter identifies projects that will be "carried out" and includes those related to the "Clean and efficient use of coal.[xviii]"

Later in the document, in Chapter 22, titled "Develop China into a Manufacturing Powerhouse", page 65 contains Box 7 which outlines "A complete set of advanced chemical machinery," including:

> "with the support of projects demonstrating upgrades to the modern coal-to-chemicals industry, work toward the independent design and production of a complete set of advanced chemical machinery, focusing on coal classification, coal gasification, syngas purification, energy utilization, wastewater treatment, and other key areas;[xix]"

For 10 years, Chinese government policy has prioritized the utilization of coal for the purposes of manufacturing methanol and other petrochemicals and that policy has been backed by massive capital investment in expanding physical plants.

As the maps (Figures 1 and 2)contained at the end of these comments make clear, China's coal methanol to olefin industry is not a black box of uncertainty. The industry and its growing use of coal is in fact incredibly clear. Since 2010, coal to methanol production has increased every year by an average of 6.77 million tons per year.[xx] The number of coal methanol to olefins facilities in China also grew from zero that year to 29 today. There are 30 other coal-to-methanol-to-olefin facilities currently at some stage of construction, permitting, or other planning. Five coal-to-methanol-to-olefin facilities were launched in 2019, four were slated to begin operations in 2020, six for 2021, 3 for 2022, and a dozen slated for 2023 – all in China, all making or using coal derived methanol.

A few months ago, it was announced that one of those new facilities just came online with the largest methanol output of any plant in the world at the time.[xxi] As the press release details, the new plant is just the latest development of Ningxia Baofeng Energy and describes the company's business plan and how it fits into the larger economic policy environment:

> The company's production base is located in the national energy & chemical base – Ningdong Energy & Chemical Base in the northwest China and relies on China's energy deployment, which is 'Rich in coal and poor in oil and gas'. The plants are taking full advantage of local coal resources to build a product chain of "coal – coke – methanol – olefins – fine chemicals' in the Ningdong chemical complex of 14,000 acres.

The Chinese Communist Party's Central Committee is now in the process of writing the country's new five year plan. The five year plan is a pretty reliable indicator of what the Chinese government attempts to do. Ten years ago they said they were going to create a coal-chemicals industry, and they did. Every indication suggests China will continue to its investment in the coal-to-chemicals industry.

The Department's focus on alternative methods of methanol production and how methanol produced from KMMEF may substitute for those alternatives is an appropriate and important part of the environmental review. All available data suggests that if KMMEF is not allowed to proceed, that the "business as usual" scenario playing out across the globe as we speak means only one thing: more harmful greenhouse gas emissions affecting our entire global community will be released.

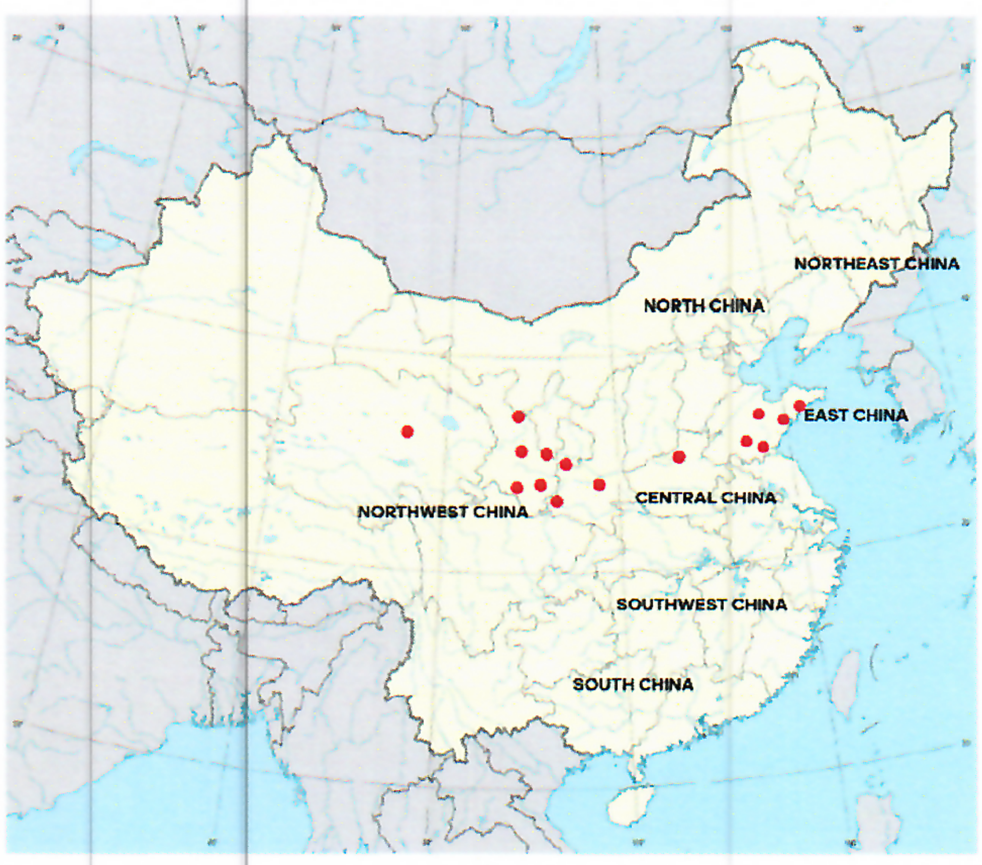
Washington State should be a leader in demonstrating a new level of transparency, accountability, and mitigation when it comes to manufacturing the products every one of us consumes. We should demonstrate what a responsible regulatory environment can produce when it seeks to bend the emissions curve on the foundational underpinnings of our global economy. The Department of Ecology's Draft Second Supplemental Environmental Impact Statement for the Kalama methanol facility accomplishes all of those things. We should proceed with the Kalama methanol facility.

Sincerely,

Richard Desimone

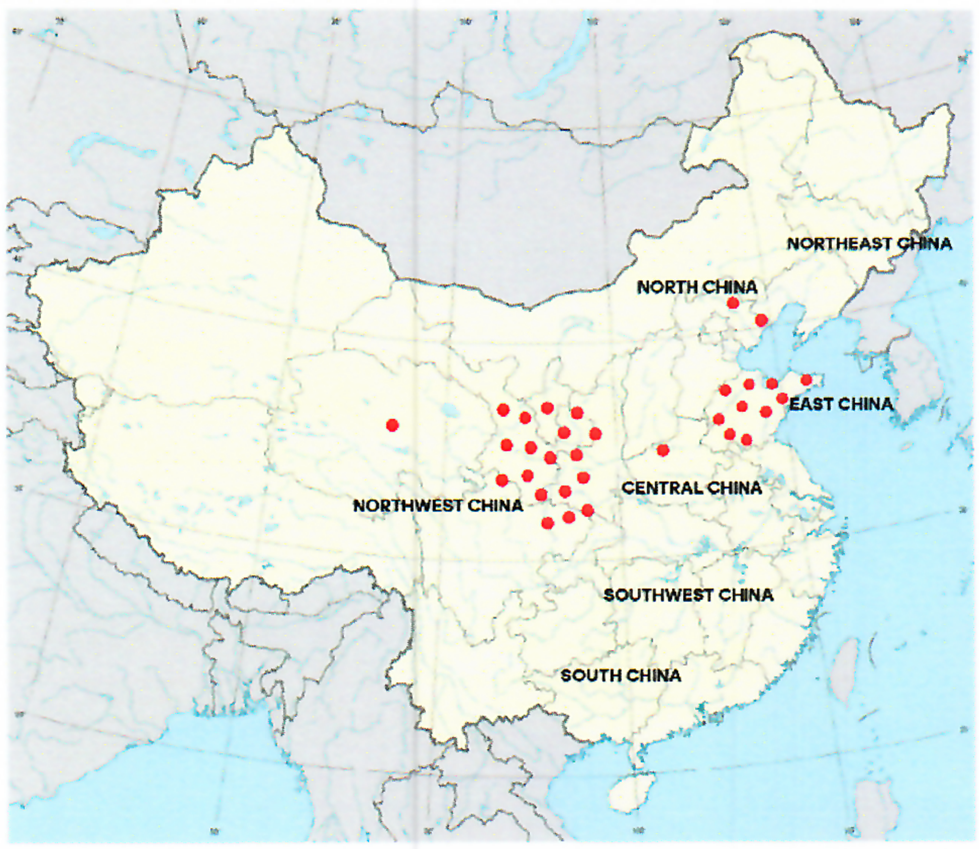
Figure 1
Chinese Coal Methanol to Olefin Facility Growth
2009 - 2015

2009



2010 - 2015

Figure 2
Chinese Coal Methanol to Olefin Facility Growth
2016 – 2020 and Beyond



2016 - 2020

2021 - +

[i] Draft Second Supplemental Environmental Impact Statement for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 104: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[ii] Draft Second Supplemental Environmental Impact Statement for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 68: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[iii] Draft Second Supplemental Environmental Impact Statement for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 65: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[iv] Draft Second Supplemental Environmental Impact Statement for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 65: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[v] Draft Second Supplemental Environmental Impact Statement, Appendix B, for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 8: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[vi] Draft Second Supplemental Environmental Impact Statement for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 58: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[vii] Draft Second Supplemental Environmental Impact Statement for the proposed "Kalama Manufacturing and Marine Export Facility" (Publication 20-06-011), Washington State Department of Ecology, p. 71: https://fortress.wa.gov/ecy/publications/documents/2006011.pdf

[viii] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p.5: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[ix] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p.3: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[x] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p. 6: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[xi] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p. 39: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[xii] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p. 57: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[xiii] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p. 57: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[xiv] "Guide to Chinese Climate Policy 2019" by David Sandilow, Columbia University Center on Global Energy Policy, p. 58: https://energypolicy.columbia.edu/sites/default/files/file-uploads/Guide%20to%20Chinese%20Climate%20Policy_2019.pdf

[xv] "A New Coal Boom in China" by the Global Energy Monitor of the Centre for Research on Energy and Clean Air: https://energyandcleanair.org/wp/wp-content/uploads/2020/06/A-New-Coal-Boom-in-China.pdf. The Global Energy Monitor is a nonprofit research organization developing information on fossil fuel projects worldwide. Through its Global Coal Plant Tracker (GCPT) project, Global Energy Monitor has provided biannual updates on coal-fired generating capacity since 2015. GCPT data is used by the International Energy Agency (IEA), the OECD Environment Directorate, UN Environmental Programme, U.S. Treasury Department, and the World Bank.

[xvi] "China Expands Coal Plant Capacity to Boost Post-Virus Economy," by Thomas Hale, *The Financial Times*, June 25, 2020: https://www.ft.com/content/cdcd8a02-81b5-48f1-a4a5-60a93a6ffa1e

[xvii] "Coal chemicals: China's high-carbon clean coal programme?" published in Climate Policy by Chi-Jen Yang from Duke University's Center on Global Change, 2016

[xviii] https://en.ndrc.gov.cn/newsrelease_8232/201612/P020191101481868235378.pdf

[xix] https://en.ndrc.gov.cn/newsrelease_8232/201612/P020191101481868235378.pdf

[xx] http://www.asiachem.org/en/coalchem

[xxi] Johnson Matthey press release, "Johnson Matthey achieves successful commissioning of largest methanol plant in China;" June 23, 2020: https://matthey.com/-/media/files/press-releases/johnson-matthey-press-release-baofeng-ii-methanol-plantfinal.pdf