

Business Case for Carbon Fee and Dividend (Dec 1, 2020)

Major Point: Climate action and CF&D are gaining momentum (globally and domestically) and Missouri is far from keeping pace with other U.S. States as well as other countries . This shortfall disadvantages Missouri's economy, Missouri's businesses, and Missouri's workers.

Global Picture:

The European Union and Canada—major U.S. trading partners—currently impose carbon fees that will rise yearly, as a way of cutting greenhouse gas emissions. The EU will begin imposing carbon border adjustment fees in 2023 and Canada will probably do so as well, as a means to protect their domestic industries from offshore carbon polluters.¹ This means that the carbon content of U.S. exports to the EU and Canada will be taxed by overseas governments if they aren't taxed in the United States, creating a financial outflow with no economic return. Domestic carbon fees keep the money in the U.S. instead.

On Oct 28 Japan and South Korea pledged to be carbon neutral by 2050. China has pledged carbon neutrality by 2060. In order to meet these goals, carbon border adjustment taxes may well be imposed on U.S. exports to these trading partners as well.

President-elect Biden has pledged to rejoin the Paris agreement and that the U.S. will achieve carbon neutrality by 2050.

Currently, U.S. industries are competitive internationally based on carbon content, about as efficient as the E.U. and much more efficient than China and others.² We would currently benefit from global carbon pricing, but that advantage will erode over time if we fail to match or exceed the greenhouse gas reduction programs of our overseas trading partners.

Missouri Picture:

Missouri substantially lags the nation and our immediate neighboring states in clean, renewable electricity generation (less than 5%) and especially in wind energy, which accounts for less than 3,000 GWh, or about 4% of our electricity mix. Out of step with our neighbors, Missouri generated 73% of its electricity from coal in 2019, compared to a national average of 20%.

Rank	State	Wind and solar generation as percentage of electricity consumption (2019)
1	Kansas	53.7%
2	Iowa	53.4%
3	North Dakota	51.1%
4	Oklahoma	45.4%
5	New Mexico	34.1%
6	Wyoming	25.3%
7	Nebraska	24.9%
8	South Dakota	23.8%
9	California	23.7%
10	Colorado	22.7%

Rank	State	2010 (GWh)	2019 (GWh)	Growth (GWh)
1	Texas	26,251	84,429	58,178
2	Oklahoma	3,808	28,883	25,075
3	Kansas	3,405	21,501	18,096
4	Iowa	9,170	26,558	17,388
5	Illinois	4,454	13,831	9,377
6	California	6,079	14,970	8,891
7	Colorado	3,452	10,926	7,474
8	Nebraska	422	7,414	6,992
9	North Dakota	4,096	10,754	6,658
10	Minnesota	4,792	11,040	6,248

Top 10 states for wind energy generation growth from 2010-2019.

In simple dollars and cents, coal electricity is now more expensive than new wind energy, meaning that Missouri's electricity mix will soon drive up costs for businesses and consumers.⁴

Missouri's persistent reliance on coal costs Missouri jobs and revenue associated with wind power. For instance, Iowa has nearly 10,000 direct wind energy jobs and 11 wind-related manufacturing facilities. Lease payments to Iowa landholders, mainly farmers, totaled \$69 million last year. By contrast, Missouri has barely 1000 wind jobs and only \$10 million in lease payments.⁵ There are no coal mining jobs in Missouri that would be threatened by a change in power sourcing; there is only the opportunity for new jobs as new sources are brought on line.

And businesses making "carbon neutrality" pledges, as nearly all the biggest companies are, become less likely to locate in Missouri due to its dirty electricity. For instance, Ford Motors, which currently employs 7250 workers at its assembly and stamping plants in Claycomo, has pledged to use 100% renewable energy at all of its manufacturing facilities worldwide by 2035.

Missouri does not have the freedom to "opt out" of the international, national, and economic pressures driven by the growing consensus to address the greenhouse emissions problem. We either join in the efforts for solution, or we will have the solutions imposed on us by legal and market realities.

Regulation vs. Market Incentives

There are two general approaches to reducing carbon emissions. The first is detailed regulation, e.g., President Obama's Clean Power Plan which regulates power plant construction and renovation in the United States. The second is "carbon pricing", where governments place fees on fossil fuels to discourage their use and promote alternatives. The two vectors are not mutually exclusive, but the second approach is overwhelmingly favored by the world's economists as the most efficient and effective way to solve the CO₂ emissions problem in the time available. Recent studies of the effect of Carbon Pricing in Europe show the positive impact of carbon taxes on GDP, employment, and wages.⁶

The American economic community has embraced "Carbon Fee and Dividend", as a way of pricing carbon and allowing households to profit by lowering their carbon footprints.⁷ The Energy Innovation and Carbon Dividend (EICD) Act is a bill currently before Congress which would enact carbon pricing and household dividends nationally, and like the E.U., impose border adjustment fees on the carbon content of imports.

Missouri Implications:

Under a global carbon pricing structure, all economic entities will benefit by reducing their carbon footprints or pay a price for their failure to reduce. Based on Missouri's tethering to coal-generated electricity, our carbon footprint is already well above average, so Missouri households will be relatively disadvantaged by carbon pricing relative to their peers in more progressive states and countries. The dividends in the EICD Act will mean that the average Missouri household will still profit initially from Carbon Fee and Dividend, but not to the extent of households in other American states.⁸

Bottom Line:

Missouri's slow reaction so far to climate change will increasingly disadvantage Missouri's economy and households as time progresses. Missouri does not have the option of isolating itself from the international and national trends concerning climate change and its remedies. De-carbonization of Missouri's electricity supply will preserve and promote Missouri's econo-

my, businesses, and jobs by improving the state's competitiveness in a rapidly evolving marketplace.

Notes:

1. EU and Canadian (?) Carbon Border Adjustment fees beginning in 2023. <https://www.spglobal.com/platts/en/market-insights/latest-news/coal/102320-eu-carbon-border-measure-should-cover-power-heavy-industry-ep>.
2. U.S. now has a competitive export/import advantage with CF&D: <https://clcouncil.org/reports/americas-carbon-advantage.pdf>.
3. Charts from: <https://environmentamerica.org/sites/environment/files/reports/AM%20Renewables%20on%20the%20Rise%20-%20Merged.pdf>
4. <https://www.energy.gov/eere/wind/advantages-and-challenges-wind-energy>, <https://www.irena.org/newsroom/pressreleases/2020/Jun/Renewables-Increasingly-Beat-Even-Cheapest-Coal-Competitors-on-Cost>, <https://www.usatoday.com/story/news/2019/06/04/climate-change-coal-now-more-expensive-than-wind-solar-energy/1277637001/>, and <https://www.chicagotribune.com/news/environment/ct-more-illinois-coal-plants-closing-20200930-bl2saewbvha3f52r42fcni53y-story.html>.
5. State data on jobs, investment, rents at: <https://www.awea.org/resources/fact-sheets/state-facts-sheets>.
6. <https://citizensclimatelobby.org/new-studies-carbon-taxes-yield-strong-economy-good-jobs/>
7. Former Fed chiefs and leading U.S. economists support CF&D (WSJ, Jan 16, 2019), Yellen story: <https://www.reuters.com/article/usa-climate-tax-idUSL1N2GY2EI>, and <https://www.businessinsider.com/us-ceo-group-says-it-supports-carbon-pricing-to-fight-climate-change-2020-9>.
8. August 2020 Household Impact Study II, Figure 13.