


# Can Clean Energy Change How The World Works?

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Recent legislation in the two Washingtons — Washington, D.C. and the State of Washington — provide a model on how to accelerate the transformation from fossil fuels to clean energy to generate power, manufacture products, transport people and commodities, and provide food and shelter. Whether the two bold but different approaches to push the transformation will be timely, effective, and compatible is a significant unknown. Politicians, regulators, activists, industry executives, entrepreneurs, financial officers, and private citizens are dedicating their efforts to make the transformation happen and slow down the effects of climate change. Unlike John Mayer’s song, these are the people who are not waiting on the world to change. This article summarizes in broad terms the recent federal and Washington state laws that establish the funding and regulatory mechanisms to accelerate the transition from fossil fuels to clean energy sources and the primary obstacles (permitting and available land) that may inhibit that transition.

### **Changing the Paradigm**

In his 1988 testimony to Congress, James Hansen, then Director of the NASA Goddard Institute for Space Studies, made one of the first emphatic and widely-publicized warnings of future heat waves and droughts associated with the greenhouse effect in the atmosphere.<sup>1</sup> In the several decades that followed, many politicians, economists, and business leaders advised that the most effective regulatory mechanism to reduce emissions of greenhouse gases (GHG) was via a carbon tax. Rather than imposing direct limitations on emissions, a carbon tax adds to each ton of

emitted carbon an amount based on the cost to society of such emission over the long-term. The intent is to make non-carbon sources more cost competitive if not more affordable. In his Nobel prize acceptance speech in 2018, Dr. William Nordhaus, the leading proponent of a carbon tax, asserted that the “optimal” carbon price, i.e., the shared economic burden caused by each ton of emissions, was \$43. Other economists challenged this price as a “woeful underestimate of the true cost.” Regardless, new taxes are unpopular and a nationwide carbon tax was never enacted. Similarly, another approach, a nationwide cap on carbon emissions which would have allowed companies to trade their allotments, failed in the U.S. Senate in 2010.<sup>2</sup>

In the meantime, the relentless march of climate change impacts became more apparent. Floods and fires of historic magnitude are in the news on an almost daily basis. More dramatic action was needed to accelerate the transition to reduce carbon emissions than relying on market forces. The Inflation Reduction Act (IRA) signed by President Biden in August 2022 relies on unprecedented direct investments by the federal government via tax credits, loan guarantees, and grants in many different sectors of the economy to phase out fossil fuels and achieve emission reductions much more rapidly. It may not have been a motivating factor for the U.S. Congress, but the Chinese government demonstrated that huge direct investments can cause the cost of technologies like solar panels and batteries for electric vehicles to fall to within the range that allows them to be deployed at scale.<sup>3</sup>

Prior to the enactment of the IRA, the United States had already made significant investments in clean energy. Since January 2021, companies have invested nearly \$85 billion in manufacturing of electric vehicles, batteries, and E.V. chargers throughout the country. Domestic solar manufacturing capacity is expected to triple by 2024.<sup>4</sup> The IRA will supersize these investments and accelerate growth in clean energy across the board.

The world can change dramatically. It has in the past. Transportation, one of the key economic sectors that essentially requires rapid and wholesale abandonment of the gas-powered engine, is a good example. In the 19th century, ear-shredding noise, toxic air, interminable traffic jams, and chaos and death caused by mechanical failures and spooked animals, were common complaints regarding horse-driven carriages. Some 130,000 horses were in use at one time in New York City alone and predictions were made that by 1930 the city’s streets would be piled three stories high with dung.<sup>5</sup> That apocalyptic scenario did not come to pass. Innovation led to new ways to transport people and goods.

## **Inflation Reduction Act**

The IRA provides nearly \$369 billion in direct investment to ensure energy security, reduce carbon emissions, increase energy innovation, and support environmental justice objectives for underserved communities. It relies heavily on the tax code to promote the deployment of clean energy technologies by establishing new and extending existing investment tax credits. Two values of tax credits are provided: a lower base credit and a bonus rate. The bonus rate is five times the base amount but is available only when requirements related to prevailing wage and apprenticeship are met (which will be described further in future Treasury Department guidance).

An important element of many of the new investment tax credits is that they are available for the next ten years which is intended to provide the business predictability and certainty which is often necessary for companies to procure new clean energy technologies, equipment, and workers. In addition, a significant value of tax credits is that they potentially reduce the amount of financing required to develop new projects.

Examples of tax credits spanning different sectors of the economy are:<sup>6</sup>

- New credits for production of components integral to clean energy such as solar photovoltaic cells, wind energy, and battery cells (\$62.7 billion).
- The advanced energy project credit for the development of new clean energy technologies and equipment in the manufacturing sector (\$37.4 billion).
- The existing renewable energy production tax credit for the production of wind and solar power is extended through the end of 2024 (\$51.1 billion).
- Tax credits for energy-efficient properties, buildings, and homes (\$36.9 billion).
- Tax credits for purchase of new and used electric cars (\$14.2 billion). The tax credit for purchase of a new clean car is up to \$7,500 but (1) a certain percentage of critical materials in the battery must be extracted or processed in the U.S., a country with a U.S. free trade agreement, or recycled in North America; and (2) a certain percentage of the battery must be manufactured or assembled in North America. In addition, the tax credit is not available for cars exceeding \$55,000 and trucks, vans, and SUVs exceeding \$80,000. Further, the tax credit is not available for taxpayers with modified adjusted gross income of more than \$300,000 for taxpayers married filing jointly, \$225,000 for head of household, and \$150,000 for single taxpayers.
- Tax credits for clean hydrogen production (\$13.2 billion).

- New tax credits for low-carbon car and airplane fuels, and extension of credits for biodiesel and other renewable fuels (\$8.6 billion).

Many of these tax credits are “uncapped,” meaning that as long as the applicant meets the criteria the government will award the tax credit. The Congressional Budget Office estimated spending under the IRA to fight climate change will be about \$374 billion. But that number is based on assumptions on how much the tax credits will be used. Credit Suisse published an independent analysis that estimated the money spent could be double the CBO estimate, largely because of the “uncapped” tax credits. Credit Suisse concluded the IRA “will have a profound effect across industries in the next decade and beyond.”<sup>7</sup>

In addition to tax credits, the IRA’s authorization of substantial financing by federal agencies include the following programs:<sup>8</sup>

- The Environmental Protection Agency’s (EPA) “Green Bank” for investments in clean energy projects, particularly in low income communities (\$20 billion).
- The U.S. Department of Agriculture’s investment in conservation programs, including improving potential for natural carbon sequestration in forests, reducing nitrogen losses, and reducing the risk from wildfires (\$20 billion).
- Investments in clean energy technology in rural areas (\$13.2 billion).
- The U.S. Department of Energy’s investments in building efficiency via funding to states, local governments, and tribes (\$10 billion).
- Loans and grants for production of hybrid, electric, and hydrogen fuel cell cars (\$2.9 billion).
- Grants and rebates for the purchase and installation of zero-emission equipment and technology at Ports to reduce air pollution (\$3 billion).
- Financial incentives (i.e., grants, rebates, contracts, and loans) to monitor and reduce methane emissions from petroleum and natural gas systems (\$1.55 billion). In addition, EPA is authorized to impose and charge an increasing fee for facilities that emit methane (e.g., \$900 per ton of methane in 2024, \$1,200 per ton in 2025, and \$1,500 per ton in 2026).

Tens of billions more dollars are allocated for drought resilience, monitoring and reducing pollution, reducing emissions in energy-intensive industries (e.g., cement), improvements to federal buildings and highways, zero-emission U.S. Postal Service trucks, and other programs.

The dollar amounts are staggering but individuals can better relate to the potential benefits to their bottom line. In addition to the credits for new and used electric vehicles, an existing credit is extended until 2032 for homeowners to claim credits on their tax return of \$600 per purchase up to \$1,200 per year for the purchase of energy-efficient windows and insulation. Homeowners can also continue to claim a credit of up to 30 percent off renewable energy investments, such as rooftop solar panels and geothermal heat pumps. There is also a new credit for purchase of batteries intended to store electricity from renewable sources.<sup>9</sup>

The United States' commitment in the 2015 Paris Agreement is to cut emissions by 50 to 52 percent below 2005 levels by 2030. The Biden Administration claims the federal investment authorized by the IRA will by 2030 reduce GHG emissions by 40 percent compared to 2005 levels.<sup>10</sup> It's an estimate based on modeling, not scientific certainty. The actual reduction, which will likely be significant, will depend on car buyers buying electric vehicles, breakthroughs in carbon capture, battery storage, and other clean technologies, and design and construction of large renewable energy projects and transmission lines. Some of the obstacles are described in more detail below.

For purposes of funding, grants, reporting, monitoring, permitting, and other regulatory programs, several sections of the IRA expressly define "greenhouse gas" as including the "air pollutants carbon dioxide, hydrofluorocarbons, methane, nitrous oxide, perfluorocarbons, and sulfur hexafluoride."<sup>11</sup> The intent of the definition appears to respond to the Supreme Court's recent decision in *West Virginia v. EPA* which mandated that EPA point to "clear congressional authorization" when seeking to devise emission limits for power plants.<sup>12</sup>

The new definitions in the IRA could be helpful in withstanding future challenges to EPA's regulatory authority as EPA is in the process of rulemaking regarding highly potent global warming chemicals (e.g., hydrofluorocarbons used in air conditioning, refrigeration), fuel standards for new light-duty and heavy-duty trucks, CO<sub>2</sub> emissions standards for aircraft, and emission reductions for the oil and gas industry, power plants, new and existing electric utility generators, and new and existing municipal solid waste landfills.<sup>13</sup>

Apart from EPA's rulemaking, the IRA authorizes prodigious spending on clean energy throughout the country. Many companies and individuals will seek to take advantage of the money flow for business and personal reasons. In Washington State, many companies and

individuals will likely seek federal funding in order to comply with a recently enacted comprehensive regulatory program that seeks to achieve substantial emissions reduction goals in the state by mid-century.

### **Climate Commitment Act**

In May 2021, the Washington Legislature enacted the Climate Commitment Act (CCA), an aggressive “cap and invest” program similar to California’s program to reduce over time the emissions of carbon dioxide (CO<sub>2</sub>) by the largest generators of CO<sub>2</sub>.<sup>14</sup> Starting in January 2023, the program requires companies that emit more than 25,000 metric tons of CO<sub>2</sub> per year to purchase or receive emissions allowances. The companies regulated include electricity generators and importers and natural gas suppliers and distributors. Agricultural and forestry operations are not covered by the CCA.

Allowances cover emissions that can be generated over a four-year period (e.g., an emission allowance purchased in 2023 is in effect through 2026). The amount of the emissions allowance purchased or secured every four years decreases which will require businesses to intentionally plan for emissions reductions in order to keep on operating. The allowance decreases by seven percent each year in the first four-year period. Reporting of annual emissions must be certified by an authorized third-party. The overarching objective of the program is to reduce statewide emissions to 45 percent below 1990 levels by 2030, 70 percent below 1990 levels by 2040, and 95 percent reduction below 1990 levels by 2050. The CCA authorizes fines of up to \$50,000 per day for failure to comply with emissions limits.

Each participant in the auction process submits a single bid for the number of allowances they want and how much they are willing to pay. The bids are automatically sorted in order of bid price, starting with the highest bid, and allocated to each bidder in that order. Once all the allowances are accounted for, the lowest bid that successfully won allowances is the price that all bidders pay. Participants who bid below that threshold will need to purchase their allowances from other businesses and individuals on the trading market, like buying stocks.<sup>15</sup>

The CCA, however, also incorporates flexibility into its program in order to mitigate potential financial impacts on many Washington businesses. First, businesses that use large amounts of energy and face global competition are considered Emissions-Intensive, Trade-Exposed Industries (EITEs). Such entities, primarily manufacturers, receive emissions allowances at no cost, but the emissions allowed and the number of no-cost allowances decrease over time, which means businesses will still need to make investments in new equipment and infrastructure to achieve compliance.

Second, businesses may invest in offset projects as credits to cover a small portion of their emissions allowance (e.g., up to five percent of their emissions in the first compliance period 2023–2026). Offset projects include reforestation, planting trees in urban areas, and removing ozone from the atmosphere. The offset projects must result in greenhouse gas reductions that are real, permanent, quantifiable, verifiable, and enforceable. Verification must be by a third-party registry authorized to certify the reductions achieved by the project.

Most covered businesses other than EITEs will need to purchase emissions allowances at auctions conducted by Ecology. Ecology estimates the revenues generated by the auctions could be as high as \$400 million a year. Ecology has created three funding accounts to receive the revenues:

- Carbon Emissions Reduction Account (primarily used for reducing emissions in the transportation sector, including freight, ferries, and ports).
- Climate Investment Account (used for projects to transition to clean energy, build ecosystem resilience, and sequester carbon).
- Air Quality & Health Disparities Improvement Account (used for addressing health disparities in communities heavily affected by air pollution).

The Washington Legislature will direct via appropriations how revenue generated by the purchase of emissions allowances will be used in each of the above accounts.

The CCA will be a complicated program to implement and oversee. Ecology's regulation for the program is 147 pages.<sup>16</sup> The key will be finding the balance between observable emissions reductions, cost to achieve such reductions, and the need for businesses to remain competitive with companies outside the state (and the country) not subject to the requirements of the CCA.

In its comments on Ecology's proposed rulemaking under the CCA, industry representatives cautioned that the seven percent decrease in emissions called for under the first two compliance periods was an extremely steep drop. The Association of Washington Business commented:

“Without the benefit of a gradual ramp up in program stringency that the California program enjoyed, companies risk facing extremely high costs to buy the necessary credits to comply with this program while also having to invest in expensive upgrades to lessen their exposure to future costs. Without any flexibility to allow for facility upgrade costs or efforts, the CCA could be a strong detriment to the state manufacturing sector.”<sup>17</sup>

Ecology's benchmarks for emissions reduction are aggressive in order to achieve the overarching goal of a 95 percent reduction below 1990 levels by 2050. Manufacturers and other regulated businesses will likely not be shy about continuing to express concerns about emissions reductions if it significantly affects their competitive edge.

### **Clean Energy Transformation Act**

A counterpart to CCA, with a significant overlap on electric utilities, is the Washington Clean Energy Transformation Act (CETA), which was enacted in 2019, and is implemented by the state Utilities and Transportation Commission (UTC) and the Department of Commerce (Commerce).<sup>18</sup> The overarching goal of CETA is a state-wide electricity supply free of greenhouse emissions by 2045.

Under CETA, interim milestones are established to reach the 2045 goal. By 2025, both investor-owned and consumer-owned utilities must phase out coal-fired electricity facilities. By 2030, the electric utilities' portfolios must be greenhouse gas emissions neutral, which means the electric utilities may use limited amounts of electricity generated from natural gas if offset by other actions. The electric utilities are also subject to the CCA emission reduction requirements summarized above.

The Centralia Steam Plant is the only commercial coal-fired electricity facility in Washington. It is already slated to be shut down by 2025. The requirement for Washington electric utilities to phase out reliance on coal-fired plants for electricity supply may also curtail their use of the Colstrip Plant in Montana and several coal plants in other Western states.<sup>19</sup>

CETA authorizes Commerce to change the paradigm for how utilities are regulated in order to facilitate the transition to clean energy. To date, utilities make money for their shareholders through guaranteed return on investments in capital projects — “steel in the ground.” So they invest in capital projects such as upgrading, replacing and installing new pipes, wires and new technology equipment. If their customers use less energy, or generate and share more of their energy from distributed renewable energy sources, there is less need for new electricity infrastructure, and thus lower utility profits.<sup>20</sup>

Under CETA, however, the UTC is authorized to shift utilities from a “return-on-capital” model to “performance-based regulation.” The “performance-based” model is an alternative process that evaluates utility performance against metrics



determined by the UTC, such as reliability of utility service for different communities to identify service and equity gaps, how utilities prepare for and respond to major weather events, and investments in clean energy in meeting state goals and requirements.

In another important shift, CETA requires utilities to take into account the “social cost of carbon” (SOC) in making planning decisions. SOC refers to an estimate by economists of the total damages, economic, environmental, and otherwise, imposed by a ton of carbon emissions. The UTC adopted the SOC metric produced by the Interagency Working Group on Social Cost of Greenhouse Gases. For example, in 2025, the adjusted SOC in 2021 dollars is \$87 per metric ton. The net effect of inserting SOC into decision-making is that it defines carbon reduction as in the public interest and a core part of the regulatory compact. Washington utilities will be required by law to take carbon into account.<sup>21</sup>

Utilities are provided protection against increasing costs of compliance with clean energy standards. CETA includes a rolling cost cap for costs directly attributable to the clean energy requirement. The incremental costs of compliance cannot exceed two percent of the previous year’s electricity revenue. The advantage of the rolling cost cap is that every year resources must be devoted to compliance, i.e., the cost cap will not function as an excuse to not invest in the transition to clean energy.

In an important safeguard to utilities and their customers, utilities can obtain relief if compliance threatens to create a violation of reliability of service standards established by a national organization or if access to renewable or clean energy sources is unavailable due to transmission, mechanical failure, third-party supplier failures, or similar forces beyond the control of the utility.<sup>22</sup>

## **Transportation**

By far, the largest emitter of CO<sub>2</sub> in Washington is the transportation sector. An estimated 45 percent of the state’s 2018 emissions were from passenger, truck, and freight vehicles. Multiple laws and programs will contribute to reducing emissions in this sector.

Washington’s Clean Fuel Standard requires fuel suppliers to reduce the carbon intensity of transportation fuels to 20 percent below 2017 levels by 2038.<sup>23</sup> Reductions can be achieved by improving the efficiency of fuel production processes, producing and/or blending low-carbon biofuels into the fuel that is sold, and purchasing credits generated by low-carbon fuel providers, including electric vehicle charging providers.

Electrification of vehicles is also a priority in Washington. In March 2020, Washington enacted a law directing adoption of California's vehicle emission standards.<sup>24</sup> Ecology is in charge of implementing the program for requiring the sale of an increasing number of zero-emission vehicles (ZEV) and low-emission vehicles (LEV) starting with model year 2025.<sup>25</sup> ZEVs are either vehicles that run on batteries recharged with electricity or that run on electricity from a fuel cell using compressed hydrogen. In August 2022, Governor Inslee announced that Washington will follow California and prohibit the sale of new gas-powered vehicles by 2035.<sup>26</sup>

Incentives courtesy of the federal government will significantly encourage car buyers to purchase ZEVs in Washington. As noted above, the 2022 IRA includes substantial tax credits for purchasers of electric vehicles. In addition, the Infrastructure Investment and Jobs Act signed in 2021 provides an annual investment of \$5 billion, from 2022 through 2026, in state-administered grants for electric vehicle charging stations. The law provides funding to states for electric vehicle charging infrastructure and to establish an interconnected network for data collection, access, and reliability. The federal grants will cover 80% of the cost of eligible charging station projects.<sup>27</sup> Washington has applied to participate in the federal grant program.

The federal funding covers the charging station itself, not the broader electric infrastructure to connect the stations to the electricity source. Under the Clean Fuel Act, electric utilities can generate credits against their compliance obligations by providing for transportation electrification projects within their utility service area, including in underserved communities, and for projects designated by Ecology and the Department of Transportation.

In addition, the state will be spending considerable sums on the transportation sector. As noted above, revenue from the CCA's Carbon Emissions Reduction Account will be used to reduce emissions by freight vehicles, ferries, and ports.

For several years, ports in Washington have been coordinating with each other voluntarily to reduce emissions. The Ports of Seattle, Tacoma, and Vancouver, British Columbia have combined to implement the Northwest Ports Clean Air Strategy (Strategy) which seeks to phase out emissions completely from seaport-related activities by 2050. The objectives of the Strategy include establishing metrics against which the Ports will monitor and report on emissions reductions, implementing programs to increase efficiency, phase-out old high-emitting equipment, and using lower-emission fuels while sustaining commercial competitiveness.<sup>28</sup>

## **Buildings**

In tandem with its growing population, Washington is constructing more new homes and office spaces. According to the Governor's office, building-related emissions are the state's fastest growing source of greenhouse gases and account for 27 percent of the carbon pollution in Washington.<sup>29</sup> In 2019, the Governor signed a Clean Buildings Act which establishes an energy performance standard for existing and new commercial buildings, hotels, motels, nursing homes, and dormitory buildings 50,000 square feet in size and larger.<sup>30</sup> The standard is based on an "energy utility index," (i.e., a measure of energy use per square foot). Building owners can achieve compliance via lighting, energy management systems, or updating the building envelope. Mandatory compliance begins in 2026 for buildings larger than 220,000 square feet.

The Clean Buildings Act was expanded in 2022 to cover buildings 20,000 square feet or larger, including multifamily buildings. Reporting and compliance for these buildings starts in 2027.

Commerce will make grant funds available for qualified retrofit projects. Grant funds from \$50,000 up to a maximum of \$1 million can be awarded. Grants will be administered in partnership with utilities and may be combined with incentives to lower capital costs and reduce payback periods.<sup>31</sup>

In April 2022, the Washington State Building Code Council adopted revisions to the state's energy code which become effective on July 1, 2023. The revisions restrict the use of natural gas in future commercial building heating systems and will generally require the use of heat pumps to warm air and water.<sup>32</sup>

Washington also adopted into law energy efficiency standards for 17 product categories, including lighting, computers/monitors, and plumbing equipment.<sup>33</sup>

### **Money Is the Fuel for the Transition**

Through the efforts of Governor Inslee and many others over several years, Washington has enacted an integrated program for reducing greenhouse gas emissions. The program establishes a "deep carbonization pathway" by imposing statutory and regulatory mandates on emissions by utilities, transportation sources, and building owners. The pathway requires substantial investments to achieve compliance. Although the upfront cost will result in a payoff in later years in reduced purchases of fossil fuels, money needs to be invested now and over the next few years on equipment and infrastructure.<sup>34</sup>

Washington has built funding resources and incentives (including refunds of sales tax for large clean energy generation projects) into its programs to assist companies and owners to make the necessary investments. Revenues from the CCA auction program described above will be a significant asset to achieving compliance with regulatory benchmarks. The Legislature has reserved appropriations authority over CCA revenues and needs to make good decisions on how revenue will be spent.

Tax credits, grants, and other monetary incentives under the federal IRA should be an enormous boost to the Washington companies and owners making the necessary investments. Substantial amounts of money (i.e., hundreds of billions of dollars for the United States as a whole) are available to car buyers, purchasers of residential heat pumps (potential \$2,000 tax credit) and other energy efficient appliances, producers of clean energy technologies and equipment for manufacturers, producers of wind and solar power, building owners, producers of low-carbon fuels and clean hydrogen, and others.

It is in the interests of companies, owners, and car buyers in Washington to take advantage of the federal generosity and apply for available funding. But, as we saw with Covid relief funds, this massive amount of money is susceptible to widespread fraud and abuse. The agencies providing the funds must be careful that the distribution of hundreds of billions of dollars is consistent with the objectives of the IRA but not overly burdensome to apply for and receive in hand. The fact that the money will be distributed over a number of years via existing programs with safeguards already in place, as compared to Covid funds which were handed out in very short time frames directly to companies and individuals, may significantly reduce the potential for fraud. Regardless, the capacity of government agencies to effectively administer the programs will be challenging.

### **But Money Isn't Everything**

Money will certainly support the drive to a clean energy future. But various obstacles may hinder the journey. The major uncertainties come from permitting and other regulatory hurdles. For clean energy tax credits and funding to translate into a demonstrable shift towards renewable energy in the broader economy, several different levels of government need to authorize companies to build power plants, among other things. Permitting has been a major impediment to low- or no-emission energy facilities, including offshore wind facilities, hydropower, solar farms, geothermal plants, and nuclear facilities. Transmission lines connecting these facilities to where the energy is used are often the subject of lengthy land use and environmental disputes, particularly when the lines run across more than one state.

At the federal level, it was unfortunate that Congress was unable to pass Senator Joe Manchin's so-called "permitting reform." Although the reform would benefit oil and gas projects, it would have also been invaluable for expediting the federal government's authority to approve electricity transmission lines. A study by ZERO Lab, a Princeton entity that models energy policies, predicts the nationwide climate efforts will fail if the country is unable to speed transmission line buildout. ZERO lab concluded that 80 percent of the promised emissions benefits this decade from the IRA will not occur if new transmission lines are built at the current slow pace.<sup>35</sup>

Another significant obstacle is where to locate potentially large wind and solar farms. Converting forests and farms to such facilities is not necessarily result in net environmental benefits. Forests absorb carbon dioxide, support wildlife, and absorb storm water which reduces impacts from floods.<sup>36</sup> As an alternative, researchers and developers are exploring conversion of old fossil fuel plants into clean energy facilities. It could involve using old oil and gas wells for geothermal power, old coal power plants as sites for large batteries, and old coal mines for solar farms.<sup>37</sup>

## **Jobs and Equity**

The critical measure of success in the programs summarized above is reductions in emissions of greenhouse gases. The programs are designed, however, to achieve important ancillary objectives as well. One objective is the creation of new, well-paid jobs. Clean energy investments in houses, factories, the electric grid, and the transportation system is expected to create demand for skilled workers and managers. Research shows investments in renewable and energy efficient infrastructure create three times more jobs than investments in fossil-fuel infrastructure.<sup>38</sup>

Living wages go hand-in-hand with new jobs. Tax incentives for clean energy projects under the IRA include new labor mandates on payment of prevailing wages (Davis-Bacon wage rates) and registered apprenticeship requirements. For example, the IRA requires that at least 15 percent of total labor hours on a project must be performed by a registered apprentice by 2024.<sup>39</sup>

A leading current example of job creation within the state is Group14 Technologies (Group14) which opened a facility in Maltby dedicated to improving the lithium-ion battery, a critical component of electric cars. Group14 is focused on using silicon to improve the amount of energy stored in a battery, allowing electric cars to travel farther between plug-ins, recharge more quickly, and cost less. Group14 and Sila Nanotechnologies, a California company, have announced plans to open large-scale plants for the production of battery components in Moses Lake.<sup>40</sup> The U.S. Department of Energy (Energy) recently announced it would provide \$100 million to each company to build the new plants. In total, Energy awarded \$2.8 billion to 20 companies in 12 states to foster the development of battery technology.<sup>41</sup> The plants will likely employ highly-

skilled technical jobs such as research and development project managers, mechanical engineers, electrical engineers, battery engineers, senior plant engineers, software developers, presumably together with bookkeepers, accountants, and others to operate the facilities.

The breadth of job opportunities extends well beyond Maltby and Moses Lake. Clean energy investments in buildings, factories, the power grid, and the transportation system will create demand for a wide variety of skilled workers and managers.<sup>42</sup>

Equity is an important theme in the new clean energy programs. Both federal and state programs authorize substantial investments in low income communities with disproportional impacts from air pollution. The IRA authorizes a \$20 billion “green bank” for investments in clean energy projects, particularly in low income communities. In addition, the IRA authorizes nearly \$15 billion in funding and grants for monitoring and reducing pollution in disadvantaged communities.<sup>43</sup>

The Air Quality & Health Disparities Improvement Account described above will invest revenues generated by emission allowances under the state CCA to address health disparities in communities heavily affected by air pollution. An environmental justice council, established under Washington’s Healthy Environment for All Act, will make recommendations on projects and priorities for funding.<sup>44</sup> Similar to the IRA, the council will also focus on air quality monitoring and air pollution reduction in overburdened communities.

## **Politics**

The IRA passed without a single Republican vote in either the U.S. House of Representatives or Senate. Yet much of the billions of dollars and associated job development will flow to red states. The Energy grants in the amount of \$2.8 billion referenced above were awarded to companies in 12 states, eight of which voted for Donald Trump in 2020. On behalf of their constituents, their elected representatives are not declining the money. In Senator Mitch McConnell’s Kentucky, battery factories will soon employ more people than the coal industry. Ford is spending \$5.8 billion to build a battery factory in Glendale, Kentucky. A Japanese company will invest \$2 billion in a battery factory in Bowling Green, Kentucky.<sup>45</sup>

South Carolina is one of 17 states suing EPA to prevent it from allowing California to set more stringent standards for GHG emissions for cars and trucks than national regulations. Without nothing the apparent irony, several South Carolina Republicans, including Governor Henry McMaster, recently celebrated BMW’s announced plans to upgrade a factory in the state to produce electric vehicles, and to build a new plant nearby to assemble batteries.<sup>46</sup>

Billions of dollars in climate change investments, and the creation of thousands of new jobs and increased tax revenues, may not change current opposition in much of the country to toward fighting climate change, but it may allow the transformation to less carbon emissions to proceed “under the radar” of the political gamesmanship.

## Changing the World

Will Washington’s drive to decarbonize its economy change the world and lead to significant reductions in global greenhouse gas emissions? On its own, no chance. But if Washington is successful in significantly reducing emissions while at the same time generating economic growth, creating well-paying jobs, and reducing health impacts from air pollution in low income communities, it will be a model for how the seemingly impossible can be accomplished.

If efforts by California, Washington, and other progressive states are perceived as successful, the combination of funding and regulatory pressure will need to be replicated across the country in order to achieve the necessary emission reductions in the short time frame necessary to avoid cataclysmic impacts. It’s a tall order. Governor Inslee staked his Presidential campaign on environmental issues. Although he withdrew, his message that climate change must be confronted now was not lost among the Democrats and fortunately became an integral element of President Biden’s governing strategy. As Governor Inslee wrote in his book *Apollo’s Fire*:

[W]e have seen the power and ingenuity of the American people to innovate and give form to revolutionary ideas when challenged to come together in building a future worthy of our best traditions. We have done it before. It is time to do it again.<sup>47</sup>

Yes, it’s time. Thousands of politicians, regulators, activists, industry executives, entrepreneurs, financial officers, project managers, engineers, attorneys, private citizens, and others are dedicating their time, money, companies, and careers to replicate the success of the Apollo mission to the moon and do it again. Changing the world.

*1 Phillip Shabecoff, Global Warming Has Begun, Expert Tells Senate, New York Times, June 24, 1988, at A1.*

*2 Lydia DePillis, Recalculating on Climate, New York Times, August 26, 2022, at A1.*

*3 Id.*

4 *Gina McCarthy, Climate Change is Attracting Innovation, Not Killing Jobs, New York Times, September 20, 2022, at A1.*

5 *Jonathan Kellerman, How the Car Created the Modern World, New York Times Book Review, September 25, 2022, at BR11.*

6 *Francesca Paris, et al., A Closer Look at What's Inside the Inflation Reduction Act, New York Times, August 17, 2022, at A16; The Inflation Reduction Act: Summary of Budget Reconciliation Legislation, Holland & Knight, 2022.*

7 *Robinson Meyer, The Climate Economy Is About To Explode, The Atlantic, October 5, 2022.*

8 *Paris, supra note 6; Summary of Budget Reconciliation Legislation, supra note 6.*

9 *Coral Davenport, How New Climate Law Can Help Consumers, New York Times, September 14, 2022, at B3.*

10 *Shannon Osaka, Why the Climate Bill's Impact Might Not Match What Many Expect, Washington Post, August 18, 2022.*

11 *Inflation Reduction Act, 42 U.S.C. § 16563, at §§ 60101 through 60201.*

12 *West Virginia v. EPA, 142 S.Ct. 2587 (June 30, 2022).*

13 *Climate Change Regulatory Actions and Initiatives | US EPA*

14 *Chapter 70A.65 RCW.*

15 *Cap-and-invest - Washington State Department of Ecology*

16 *Chapter 173-446 WAC.*

17 *Peter Godlewski, Association of Washington Business Comments on Climate Commitment Act CR-102, July 15, 2022, at Rulemaking - Chapter 173-446 WAC, Climate Commitment Act Program (commentinput.com).*

18 *Chapter 19.405 RCW.*



19 Eric Christensen, *Washington Clean Energy Transformation Act Establishes Aggressive Mandates for Grid Decarbonization and Renewable Energy Production*, Beveridge & Diamond, PC, June 25, 2019, at [www.bdlaw.com](http://www.bdlaw.com).

20 David Roberts, *A closer look at Washington's superb new 100% clean electricity bill*, Vox, April 18, 2019.

21 *Id.*

22 Christensen, *supra* at note 19.

23 Chapter 70A.535 RCW.

24 RCW 70A.30.010.

25 Chapter 173-423 WAC.

26 David Kroman, *WA will ban new gas-powered cars by 2035, following California's lead*, Seattle Times, August 26, 2022.

27 Andrew Hanson, et al., *The Infrastructure Investment and Jobs Act Creates a Network of Electric Vehicle Charging Stations, but Issues Remain*, December 9, 2021, at [perkinscoie.com](http://perkinscoie.com).

28 Clean Air | Northwest Seaport - Port of Tacoma ([nuseaportalliance.com](http://nuseaportalliance.com))

29 Washington Governor Jay Inslee, *Policy Brief*, May 2019, at [www.governor.wa.gov](http://www.governor.wa.gov).

30 Chapter 19.27A RCW.

31 *Policy Brief*, *supra* at note 29.

32 Albert James, *Washington council significantly restricts use of natural gas heating in new commercial buildings*, The Spokesman-Review, April 22, 2022.

33 Chapter 19.260 RCW.

34 Washington State Department of Commerce, *2021 State Energy Strategy, Executive Summary*, at 2021 State Energy Strategy - Washington State Department of Commerce.

35 *Opinion, Without this, the country's climate plans are in danger, Washington Post, September 28, 2022.*

36 *Gabriel Popkin, Are There Better Places to Put Large Solar Farms?, New York Times, September 25, 2022, at A10.*

37 *Ivan Penn, Climate Bill Promises Clean Power Major Loans, New York Times, August 23, 2022, at A1.*

38 *Larry Brown and Scott Farris, Where's the future of clean energy? Right here in Washington, Seattle Times, April 24, 2019.*

39 *Inflation Reduction Act of 2022 - Overview of Labor Requirements - IEC Atlanta & Georgia Chapters (iecatlantaga.org)*

40 *Hal Benton, WA will be a launch pad for silicon technology to boost EV batteries, Seattle Times, September 17, 2022.*

41 *Nicholas Turner, Feds award WA companies \$200 million for new EV battery facilities in Moses Lake, Seattle Times, October 19, 2022.*

42 *2021 State Energy Strategy, Executive Summary, supra at note 34.*

43 *Paris, supra at note 6.*

44 *RCW 70A.02.110.*

45 *Jack Ewing, Red States Are Reaping E.V. Benefits They Fought, New York Times, October 20, 2022, at B1.*

46 *Id.*

47 *Jay Inslee and Bracken Hendricks, Apollo's Fire, Igniting America's Clean Energy Economy, xxiii, 2008 paperback edition.*