

Stopping Climate Change in Maryland

100 percent renewable energy by 2035

Rising global temperatures risk irreversible worldwide ecological and climatic changes, with widespread impacts on human health and ecosystems, resulting in more violent storms, droughts, floods, acidifying and rapidly warming oceans, and altered growing seasons.¹ Climate change has resulted in sea-level rise in Maryland, which has contributed to the disappearance of entire coastal communities in the state.² We must transition away from dirty fossil fuels like coal, oil and natural gas to clean, renewable energy as soon as possible to prevent the worst effects of a warming planet.³ Maryland must — and can — shift to 100 percent renewable energy by 2035.

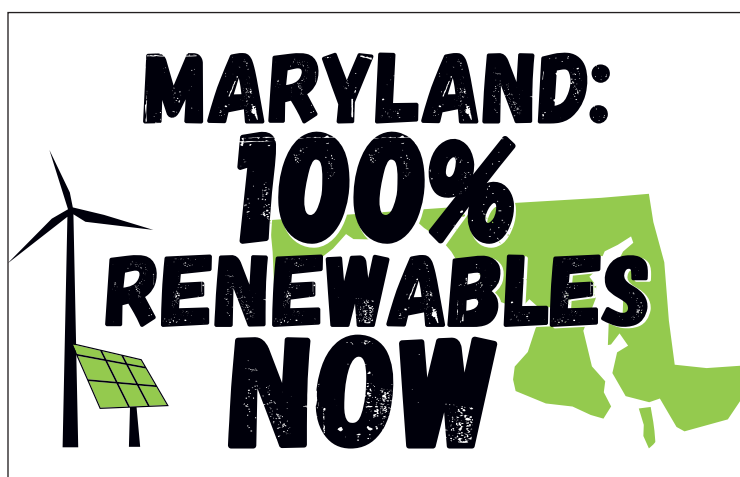
The Urgent Need to Act Now on Climate

The warming of the planet is already causing significant damage that is expected to get worse.⁴ U.S. temperatures have increased dramatically over the past century, and this warming has only accelerated over the past few decades.⁵ Since 1970, average Maryland temperatures have increased by over a half degree Fahrenheit (nearly 0.3 degrees Celsius) per decade.⁶ Maryland's coastal sea levels have risen approximately one foot in the past century, and the equivalent of nearly 440 football fields of land was lost each year due to shore erosion.⁷ More than 400 Chesapeake Bay islands have completely disappeared.⁸

Climate change is swiftly changing Maryland weather patterns. Average annual precipitation in Maryland increased by around 5 percent in the last century, and heavy storm precipitation increased by over 25 percent over the past five decades; both are expected to continue rising.⁹ Increasing temperatures contribute to the threat of more frequent and stronger extreme weather events.¹⁰ In 2003, a storm surge from Hurricane Isabel hit the entire northeastern U.S. coast, causing flooding in downtown Annapolis, North Beach and several communities on Maryland's Eastern Shore.¹¹ The storm damage cost the state over \$400 million.¹²

Climate change impacts will be expensive. Rising sea levels and more storms will likely raise flood and homeowner insurance rates in Maryland.¹³ Maryland's fishing and agriculture industries will also be potentially harmed, with economic losses due to rising air and water temperatures, seawater acidification and changes in precipitation.¹⁴

Detrimental public health impacts on local communities are expected to worsen with rising temperatures.¹⁵ In Maryland, the frequency of extreme heat days, which increase the risk of heart attack and asthma, has more than doubled over the past few decades.¹⁶ Air and water pollution is likely to worsen, along with the risks of



Salmonella infection and vector-borne diseases like Lyme disease.¹⁷ The most vulnerable Maryland residents — including low-income populations and communities of color, who are already suffering from disproportionate environmental exposures and illness — will experience the brunt of these impacts.¹⁸

Maryland's Electricity Mix Needs to Rapidly Shift to Clean, Renewable Energy

Currently, much of Maryland's power comes from greenhouse gas-emitting fossil fuels, while only a small share comes from genuinely clean, renewable energy. In 2016, more than half the state's energy came from coal- and natural gas-fired power plants.¹⁹ Less than 3 percent of Maryland's electricity comes from clean renewables, like wind, solar, tidal or geothermal energy.²⁰

In addition to Maryland's dependence on coal and natural gas, the state's use of waste-to-energy incinerators, which burn trash and other materials, promotes the harmful practice of relying on dirty fuels that threaten human health and pollute the environment.²¹ Garbage incineration may produce more climate-altering emissions per megawatt of energy used than some fossil fuels, and emit nearly 14 times more mercury than coal per megawatt.²² The Baltimore garbage incinerator is a major emitter of smog-producing nitrogen oxides that contribute to health problems.²³

Despite these adverse environmental and health impacts, Maryland classifies power from waste-to-energy incinerators, paper mill waste (known as black liquor) and landfill gas as "renewable" under the state's Renewable Energy Portfolio Standard, encouraging the use of these dirty energy sources.²⁴ In 2015, these so-called renewable energy sources provided 52 percent of Maryland's renewable electricity and received \$65 million in subsidies — money that should be going to the promotion of genuine renewables like wind and solar.²⁵

Maryland Must and Can Shift to Clean Renewables

Maryland's continued reliance on fossil fuels only perpetuates a dirty energy future that threatens our climate. The 100% Clean Renewable Energy and Equity Act (H.B. 878) is the strongest climate bill in history and charts a path

for Maryland to achieve 100 percent renewable energy by 2035. The bill curbs climate change and removes dirty energy from the state renewable program, while emphasizing environmental justice goals by involving stakeholders from communities of color and low-income areas and providing needed funding to address pollution in disadvantaged communities.

The bill calls for a complete and rapid overhaul of the current energy system — a daunting task, but we can and we must do it. As President John F. Kennedy said about the Apollo mission to put a man on the moon, we do it "because that challenge is one that we are willing to accept, one that we are unwilling to postpone, and one which we intend to win."

The 100% Clean Renewable Energy and Equity Act is our best chance at tackling climate change, and the most necessary. It promotes a clean energy system based on wind, solar and other clean sources of renewable energy, energy storage and continued improvements in energy efficiency. We have no time to lose.

Maryland's Untapped Reservoir of Clean Energy

Maryland has made some progress in transitioning to clean renewables like solar and wind, but much more must be done. Maryland solar power generation more than doubled between 2014 and 2016.²⁶ Solar is now the second largest source of renewable energy in Maryland, with over 750 megawatts of solar capacity installed as of 2016, powering 83,000 homes.²⁷

The Institute for Energy and Environmental Research predicts that Maryland's solar capacity could reach 7,000 megawatts by 2030, nine times the 2016 capacity.²⁸ Over 200 megawatts worth of solar capacity is currently in the pipeline for operation within the next few years, not including the rapid adoption of residential rooftop solar.²⁹ The Solar Energy Industries Association estimates that Maryland will add anywhere from approximately 750 megawatts to 1,600 megawatts of solar capacity over the next five years.³⁰

Maryland's wind energy also has seen promising growth, increasing by over 60 percent between 2014 and 2016.³¹ However, wind energy still makes up less than 2 percent of the state's energy production.³² Maryland has significant

wind energy potential. The Institute for Energy and Environmental Research estimates that Maryland's wind capacity could reach up to 4,900 megawatts, 25 times the state's current capacity, by 2030.³³ Already, 100 megawatts of onshore wind and 368 megawatts of offshore wind are expected to become operational over the next few years.³⁴ Emerging and improving battery storage technology is already being deployed to integrate wind and solar power into a reliable and resilient electricity system.³⁵

Conservative estimates suggest that current and emerging solar and wind technologies could provide over half of Maryland's electricity requirements in 2030.³⁶ Renewables are already being deployed at unprecedented rates, exceeding expectations many times over.³⁷ A more rapid shift to genuine renewables under the 100% Clean Renewable Energy and Equity Act would supercharge this shift.

Benefits of Clean and Efficient Power

These changes will protect the planet and strengthen the economy. Increased solar and wind energy will substantially reduce greenhouse gas emissions, lower overall energy costs and improve electric power grid reliability.³⁸ Renewable energy investments could lead the state to a savings of \$5.5 billion per year in energy expenditures by 2050.³⁹ A transition to clean energy also means a better

Maryland economy, with the creation of thousands of new and long-term jobs through climate protection strategies.⁴⁰

Energy efficiency is another key component to reducing consumption and dependence on dirty fuels and is an incredibly cost-effective way to reduce greenhouse gas emissions and toxic pollutants.⁴¹ Maryland's energy efficiency initiative, EmPOWER, will generate billions of dollars of economic benefits to the state through lifetime electricity, fuel and water savings.⁴² In 2015 alone, the program achieved 8 percent in energy efficiency savings.⁴³ And there is plenty of room for improvement — the potential for energy efficiency is "vast and remains largely untapped," according to the Department of Energy, and continued EmPOWER investments could add nearly 70,000 new Maryland jobs through 2026.⁴⁴

Take Action

The 100% Clean Renewable Energy and Equity Act charts the strongest path to tackle climate change by pushing for a 100 percent clean energy economy. Maryland has the potential to achieve this transition and reap the substantial economic benefits. Tell your members of the Maryland legislature to support the 100% Clean Renewable Energy and Equity Act today: fwwat.ch/MD100NOW

Endnotes

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