



## **Boldly Fighting the Threat of Climate Change & Securing Virginia's Clean Energy Future**

Climate change has significantly impacted Virginia and our coastal regions have suffered tremendously. The Commonwealth continues to experience increasingly severe storms, recurrent flooding, and sea-level rise that is especially damaging to our coastal communities. Over the past 70 years, Virginia has faced a 14-inch rise in sea levels, a rate greater than anywhere else on the East Coast.<sup>1</sup> As these climate threats continue to grow, our homes, businesses, food supply, and our very lives are at stake. For every 1°C increase in global temperatures, we can expect to see a 5-15% decline in crop production.<sup>2</sup> Furthermore, economic disparities make Black and Brown communities less able to adapt to climate change and more likely to face higher risks of asset loss, injury, and displacement.<sup>3</sup>

Climate change not only impacts the safety and security of Virginians in these regions but also presents a severe national security threat. The federal government has identified five critical military facilities in Hampton Roads alone as being among the most vulnerable infrastructure due to the threat of flooding.<sup>4</sup> Assets in the Norfolk-Virginia Beach Metropolitan Area rank 10th in the world for potential loss in value due to flooding from sea-level rise.<sup>5</sup> These assets include Naval Station Norfolk (NSN), which is the only station capable of refueling an aircraft carrier and home to the largest naval base in the world. The NSN alone requires \$460 million in repairs

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<sup>1</sup> Virginia's Sea Level is Rising. (n.d.). Retrieved from <https://sealevelrise.org/states/virginia/>

<sup>2</sup> Cho, R. (2018, July 25). How Climate Change Will Alter Our Food. Retrieved from <https://blogs.ei.columbia.edu/2018/07/25/climate-change-food-agriculture/>

<sup>3</sup> Parrella, K. (2020, November 6). Virginia Prioritizes Environmental Justice in its Beginning Phases of Climate Disaster Planning. Retrieved from <https://climate-xchange.org/2020/11/06/virginia-prioritizes-environmental-justice-in-its-beginning-phases-of-climate-disaster-planning/>

<sup>4</sup> Winter, A. (2019, July 24). Climate Change Could Cost Va. Coastal Cities Billions, Experts Warn Congress. Retrieved from <https://www.virginiamercury.com/2019/07/24/climate-change-could-cost-va-coastal-cities-billions-experts-warn-congress/>

<sup>5</sup> Van Houtven, G., Depro, B., Lapidus, D., Allpress, J., & Lord, B. (2016, November). Costs of Doing Nothing: Economic Consequences of Not Adapting to Sea Level Rise in the Hampton Roads Region. Retrieved from <https://law.wm.edu/news/stories/2016/documents/Summary%20Costs%20of%20Doing%20Nothing%20and%20Financial%20Hampton%20Roads%20SLR%20Report.pdf>

to replace old piers degraded by sea-level rise and hundreds of millions more to protect onshore infrastructure critical to the base's maintenance, training, and logistics missions.<sup>6</sup>

The COVID-19 pandemic has shown us that we must always be prepared when an emergency arises, and resilient in our response. We must also implement plans to reduce our climate impact and mitigate existing threats. Unfortunately, for decades, Republicans have not only flat-out ignored climate change, their continued inaction and refusal to address this threat has set our progress back and put Americans and Virginians at risk. After years of failed leadership from President Trump, President Biden has been clear that “climate change is the existential threat to humanity” and “unchecked, it is going to actually bake this planet.”<sup>7</sup> Americans can finally rest assured knowing that the Biden administration will meet this moment head-on, and as our next governor, Terry will partner with his administration to deliver bold and multifaceted solutions that focus on innovation and collaboration.

In 2013, Terry proudly ran as the climate candidate against extreme climate denier Republican Ken Cuccinelli, who made national news for his harassment of a University of Virginia climate scientist. As governor, Terry delivered on his promise to prioritize this issue. Under his leadership, Virginia joined the U.S. Climate Alliance and committed to upholding the Paris Climate Agreement, he appointed Virginia's first Chief Resilience Officer, and he took executive actions that allowed Virginia to be the first southern state to join the Regional Greenhouse Gas Initiative. Terry also established the recently codified Virginia Council on Environmental Justice and secured a \$120 million federal grant to fund the Ohio Creek Watershed project in Norfolk to mitigate flooding in two predominantly Black communities. Additionally, after years of inactivity, Terry's administration secured a \$50 million settlement from DuPont over past mercury spills, the largest natural resources damages settlement in state history, which funded natural resource restoration and environmental protection projects statewide.

Governor Northam has continued these efforts by signing key legislation to mitigate environmental impacts and secure our clean energy future. Recently, he announced a \$500 million plan to mitigate sea-level rise. Virginia's next governor must build on these efforts and take bold action to protect consumers as we strive to meet our 100% clean energy standard by 2050 and hold industries accountable to get it done. As Virginia's next governor, Terry will work to make Virginia a model for the country in combating climate change, secure our clean energy future, and partner closely with the Biden administration to ensure communities have the resources available to tackle the climate crisis. As Virginia's next governor, Terry will:

### **Reduce our Climate Impact Through Clean Energy**

In order to protect Virginians from the long-term threats of climate change, we must secure Virginia's clean energy future. Meeting this challenge will require establishing a clear path to meet our climate goals, improving our energy efficiency, expanding distributed solar, and ensuring that every Virginian can access clean and equitable transportation. If properly implemented, Virginia has the opportunity to be a leader in the fight against climate change,

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<sup>6</sup> Overview: Solutions Can Protect Coastal Communities. (n.d.). Retrieved from <https://sealevelrise.org/solutions/>

<sup>7</sup> Newburger, E. (2020, October 24). Joe Biden Calls Climate Change the ‘Number One Issue Facing Humanity.’ Retrieved from <https://www.cnbc.com/2020/10/24/joe-biden-climate-change-is-number-one-issue-facing-humanity.html>

while creating a robust clean energy economy and lowering the financial burdens placed on our communities from years of inaction. As governor, Terry will:

- **Accelerate Virginia’s path to 100% clean energy by 2035 by partnering with President Biden.** Virginia recently set bold, binding targets for reducing carbon emissions in our transportation and energy sectors, and President Biden recently announced even bolder plans to achieve a 100% clean energy economy by 2035 through a comprehensive climate and infrastructure bill. With massive investments in new clean energy technologies, President Biden will give states the resources and support they need to meet this essential goal. Virginia’s next governor will need to show tremendous leadership and set aggressive benchmarks to ensure the Commonwealth can meet this deadline. As Virginia’s 72nd Governor, Terry grew solar jobs by 65% in 2016, implemented the largest solar farm in the mid-Atlantic, secured what will be the largest offshore wind project in the nation, invested \$14 million in electric vehicle (EV) charging stations,<sup>8</sup> and nearly tripled the budget for the Commonwealth’s Division of Energy, with a strategic vision for driving clean energy industry growth.<sup>9</sup> As Virginia’s next governor, Terry will accelerate the Commonwealth’s path to a clean energy future by aligning Virginia’s mandate with President Biden’s to 2035. In addition to accelerating our path to clean energy, Terry will reduce the cost of the transition by investing federal dollars that will be forthcoming, and requiring that 45% of new clean energy projects be third-party owned and operated, a 10% increase from the current standard.
- **Improve energy efficiency and reduce consumer costs.** Virginia has the 7th highest electric utility bills in the nation, and it’s no surprise considering we are the 5th worst state in the nation for energy efficiency.<sup>10</sup> As Virginia’s 72nd Governor, Terry implemented the VirginiaSAVES program, which helps businesses and other organizations reduce energy consumption and supports alternative fuel projects.<sup>11</sup> We have to build on this progress and reduce consumption, which means investing in energy efficiency for all consumers and requiring our Investor-Owned Utilities (IOUs) to prioritize efficiency. If our IOUs achieve just a 2% improvement in energy efficiency annually over ten years, Virginians could see a 12% reduction in their power bills and a 35% reduction in carbon pollution.<sup>12</sup> Rural communities may access even greater savings through unique loans provided by the USDA for energy efficiency upgrades in rural areas.<sup>13</sup> As Governor, Terry will mandate and hold IOUs accountable to meet a 7% Energy Efficiency Resource Standard (EERS) by 2026, and

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<sup>8</sup> McAuliffe Announces RFP to Deploy \$14 Million for Electric Vehicle Charging Infrastructure. (2017, October 8). Retrieved from <https://augustafreepress.com/mcauliffe-announces-rfp-deploy-14-million-electric-vehicle-charging-infrastructure/>

<sup>9</sup> Update to the 2014 Virginia Energy Plan. (2016). Retrieved from [https://www.dmme.virginia.gov/de/Link/Documents/VEP\\_Update/Update\\_to\\_the\\_2014\\_Virginia\\_Energy\\_Plan.pdf](https://www.dmme.virginia.gov/de/Link/Documents/VEP_Update/Update_to_the_2014_Virginia_Energy_Plan.pdf)

<sup>10</sup> Policy Brief: The Impacts of a Virginia Energy Efficiency Resource Standard. (2020, January). Retrieved from <http://www.optenergy.com/wp-content/uploads/2020/01/FINAL-REPORT-VA-2-ERS-Impacts.pdf>

<sup>11</sup> Sustainable Energy Solutions. (n.d.). Retrieved from <http://www.vasavesgcp.com/>

<sup>12</sup> Policy Brief: The Impacts of a Virginia Energy Efficiency Resource Standard. (2020, January). Retrieved from <http://www.optenergy.com/wp-content/uploads/2020/01/FINAL-REPORT-VA-2-ERS-Impacts.pdf>

<sup>13</sup> Energy Efficiency and Conservation Loan Program. (n.d.). Retrieved from <https://www.rd.usda.gov/programs-services/energy-efficiency-and-conservation-loan-program>

set binding targets every year through 2030. Terry will leverage federal funds proposed by President Biden to rapidly deploy energy-efficient technologies like electric heat pumps, smart thermostats, and LED light bulbs equitably throughout the Commonwealth.<sup>14</sup> He will also work with stakeholders to improve building codes to promote energy-efficient development moving forward. These approaches will improve energy efficiency, lower utility bills, reduce carbon emissions, and provide other health and equity benefits for our most cost-burdened families.<sup>15</sup>

- **Ensure a just transition to clean energy through outcomes-based and more stringent regulation.** Virginia’s current IOU regulatory system was designed decades ago when the number one priority was ensuring that every family had access to electricity, thereby incentivizing companies to invest primarily in new infrastructure. While we must continue to maintain existing infrastructure and modernize it moving forward, we also need to fully invest in our transition to clean energy with a focus on efficiency and lowering utility costs for consumers. If we are going to achieve these goals, we have to rebuild the incentive structures that drive our IOUs. As governor, Terry will spearhead efforts to establish an outcomes-based regulatory structure to bring regulations into the 21st century. Terry will partner with stakeholders and the State Corporation Commission (SCC) to establish metrics around grid reliability, decarbonization, energy efficiency, and lowering cost burdens for consumers. Terry will also ensure the SCC and Office of the Attorney General have the resources they need to measure these outcomes, hold the IOUs accountable to meet them, and aggressively protect consumers. This new system will ensure we are incentivizing the transition to a clean economy without funding the transition on the backs of hardworking Virginia consumers.
- **Expand residential and commercial solar usage.** As Virginia transitions to a clean energy future, we must invest in and leverage solar energy. As Virginia’s 72nd Governor, Terry grew solar energy production in Virginia by nearly 8,000%, from 8 MW at the start of his term to 620 MW at the end of his term in 2017, and that included the first grid-scale solar farm in Virginia, which was also the largest in the Mid-Atlantic.<sup>16</sup> and Governor Northam has continued to make key advancements. As Virginia’s next governor, Terry will continue to unlock solar, including rooftop solar, for residential and commercial property owners. Distributed solar energy resources provide a more cost-effective and environmentally-friendly alternative for residents and business owners and improve resiliency during emergencies.<sup>17</sup> Despite the long-term financial savings and security it can provide, the upfront cost of installation can leave it out of reach to consumers.<sup>18</sup> Power Purchase Agreements (PPAs) eliminate up-front investments while lowering a person’s utility costs

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<sup>14</sup> The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future. (n.d.). Retrieved from <https://joebiden.com/clean-energy/>

<sup>15</sup> Molina, M. (2019, January 31). Electrification and Efficiency: Crafting an Enduring Relationship. Retrieved from <https://www.aceee.org/blog/2019/01/electrification-and-efficiency>

<sup>16</sup> Amazon Solar Farm - Eastern Shore. (n.d.). Retrieved from <https://www.communityenergyinc.com/projects/amazon-solar-farm-us-east>

<sup>17</sup> Net Metering in Virginia. (n.d.). Retrieved from <https://www.solarunitedneighbors.org/virginia/learn-the-issues-in-virginia/net-metering-in-virginia/>

<sup>18</sup> Virginia Solar Panels: Local Pricing and Data. (2021, February 2). Retrieved from <https://www.energysage.com/solar-panels/va/#>

by leasing their roof space for solar projects,<sup>19</sup> but they are not available to most Virginians under current law. As Virginia's next governor, Terry will expand access to PPAs while ensuring that consumers are protected against unscrupulous business practices from fly-by-night operators. He will also expand opportunities for people to benefit from shared solar and cut down on their energy costs.

- **Increase access to clean, equitable transportation.** In Virginia, transportation contributes to 45% of all carbon emissions.<sup>20</sup> Every year, these emissions kill 750 Virginians<sup>21</sup> and cost the state \$750 million in net impacted health,<sup>22</sup> disproportionately burdening communities of color. Black and Brown Americans breathe 66% more hazardous air pollution than white Americans,<sup>23</sup> which has been linked to increased prevalence of certain chronic illnesses, cancers and premature deaths.<sup>24</sup> Virginia recently passed legislation to create strict Clean Car Standards and promote the adoption of EVs and EV infrastructure, but implementation will require strong leadership from Virginia's next governor. As we transition to cleaner technologies, we cannot continue to leave rural, low-income, and communities of color behind. In addition to incentivizing the purchase of EVs, Terry will ensure that EVs and its infrastructure are deployed equitably in all regions of the Commonwealth and not just in wealthy suburbs. He will also prioritize the electrification of Virginia's state fleet of vehicles, as the Commonwealth currently only has one EV in its fleet. Finally, Terry will prioritize access to and the electrification of public transportation, which is critical for lower-income and communities of color that rely on or live near public transportation and breathe dangerous pollutants as a result.

### **Build a Resilient Commonwealth & Combat Climate Change**

Climate resilience—the ability to plan and respond to the effects of climate change—is vital to mitigating the impacts we are already facing and will continue to face in the future. For too long under Republican leadership, Virginia took a reactionary approach to addressing the climate crisis, and that ineffective approach has created long-term challenges for the Commonwealth. As Virginia's 72nd Governor, Terry fought aggressively to combat the effects of climate change, including appointing Virginia's first Chief Resilience Officer and creating the Climate Change and Resiliency Update Commission. We must continue to act boldly to prepare Virginia for both the short- and long-term impacts of climate change, including planning for adapting to a

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<sup>19</sup> Renewable Energy Pilot Program. (n.d.). Retrieved from <https://scc.virginia.gov/pages/Renewable-Energy-Pilot-Program>; Virginia Solar Panels. (2021, March 20). Retrieved from <https://www.energysage.com/solar-panels/va/#>

<sup>20</sup> Lewis, L., Pollard, T., & Penniman, B. (n.d.). Curbing Vehicle Pollution. Retrieved from <http://www.vcnva.org/curbing-vehicle-pollution/>

<sup>21</sup> Paulson, J. (2021, February 10). Cleaning up Virginia's Transportation Pollution Requires an All-Hands-on-Deck Approach. Retrieved from [https://roanoke.com/opinion/columnists/paulson-cleaning-up-virginia-s-transportation-pollution-requires-an-all-hands-on-deck-approach/article\\_3f046338-6277-11eb-b5ed-53a60c9c04fe.html](https://roanoke.com/opinion/columnists/paulson-cleaning-up-virginia-s-transportation-pollution-requires-an-all-hands-on-deck-approach/article_3f046338-6277-11eb-b5ed-53a60c9c04fe.html)

<sup>22</sup> Va. Cities, Counties Sign Letter Seeking Clean Transportation. (2021, February 4). Retrieved from <https://www.whsv.com/2021/02/04/va-cities-counties-sign-letter-seeking-clean-transportation/>

<sup>23</sup> Pinto de Moura, M. & Reichmuth, D. (2019, June 21). Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic. Retrieved from <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles>

<sup>24</sup> In the Northeast, Communities of Color Breathe 66% More Air Pollution from Vehicles. (2019, June 27). Retrieved from <https://www.ucsusa.org/about/news/communities-color-breathe-66-more-air-pollution-vehicles>

changing climate, funding resilience projects for sea-level rise and land subsidence, restoring our vital aquatic ecosystems, modernizing our energy grid and addressing the threat of extreme heat. As governor, Terry will:

- **Provide funding for communities to combat the effects of sea-level rise.** Sea levels in Hampton Roads are rising at some of the highest rates in the world, rising 14 inches since 1950 and are expected to continue rising at a rate of one inch every four years.<sup>25</sup> Further exacerbating this problem, land in the area is also sinking at alarming rates.<sup>26</sup> As a result, Virginians could see up to \$30 billion in property damage by 2100.<sup>27</sup> Black and Brown communities will be hit the hardest by these impacts.<sup>28</sup> As Virginia's 72nd Governor, Terry brokered a deal to save the Hampton Roads aquifer by convincing local industries to reduce water consumption by as much as 52%.<sup>29</sup> As our next governor, Terry will continue fighting the effects of climate change. He will invest in programs like the Clean Water Revolving Loan Fund, which supports innovative local projects like Hampton Roads' "SWIFT" (Sustainable Water Infrastructure for Tomorrow). SWIFT will mitigate the effects of sea-level rise and is projected to save the region an estimated \$2 billion.<sup>30</sup> Terry will also continue to aggressively seek federal funding to support approaches to protect against sea-level rise and land sinkage, which is a clear priority of President Biden's administration.
- **Restore our vital aquatic ecosystems.** Aquatic ecosystems such as wetlands, bays, rivers, and oyster reefs are critically important to the Commonwealth: they support our economy, naturally bind sediments, and reduce wave energy, providing natural protections for Virginians against the increasing impact of weather-related damages from climate change. For every \$1 spent in wetland restoration, Virginia can expect to generate \$8 in savings from flood reduction benefits<sup>31</sup> and more than \$15 in economic outputs.<sup>32</sup> In the Chesapeake Bay, our most important aquatic ecosystem, several states, including Virginia, are working together to meet important pollution reduction targets outlined in

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<sup>25</sup> Virginia's Sea Level is Rising. (n.d.). Retrieved from <https://sealevelrise.org/states/virginia/>; How We Work: Climate Change. (2018, September 15). Retrieved from: <https://www.nature.org/en-us/about-us/where-we-work/united-states/virginia/stories-in-virginia/va-how-we-work-climate-change/>

<sup>26</sup> Overview: Solutions Can Protect Coastal Communities. (n.d.). Retrieved from <https://sealevelrise.org/solutions/>

<sup>27</sup> Underwater: Rising Seas, Chronic Floods, and the Implications for US Coastal Real Estate. (2018, June 18). Retrieved from <https://www.ucsusa.org/resources/underwater#ucs-report-downloads>

<sup>28</sup> Frank, T. (2020, June 2). Flooding Disproportionately Harms Black Neighborhoods. Retrieved from <https://www.scientificamerican.com/article/flooding-disproportionately-harms-black-neighborhoods/>

<sup>29</sup> Zullo, R. (2017, December 15). State Reaches Deals With Large Water Users to Preserve Aquifers. Retrieved from [https://richmond.com/news/virginia/state-reaches-deals-with-large-water-users-to-preserve-aquifers/article\\_c607fb2e-c757-5017-8e6f-de923a456ac4.html](https://richmond.com/news/virginia/state-reaches-deals-with-large-water-users-to-preserve-aquifers/article_c607fb2e-c757-5017-8e6f-de923a456ac4.html)

<sup>30</sup> Lang, J. & Kane, C. (2017, April). A New Approach to Water for Hampton Roads Cities. Retrieved from <https://www.vsb.org/docs/valawyeromagazine/vl0417-water.pdf>

<sup>31</sup> Glynn, P. (2018, April 24). Nature-Based Solutions Offer Best Investment for Flood Protection. Retrieved from <https://www.pewtrusts.org/da/research-and-analysis/articles/2018/04/24/nature-based-solutions-offer-best-investment-for-flood-protection>; Conathan, M., Buchanan, J., & Polefka, S. (2014, April). The Economic Case for Restoring Coastal Ecosystems. Retrieved from [https://www.americanprogress.org/wp-content/uploads/2014/04/Coastal\\_Restoration\\_report.pdf](https://www.americanprogress.org/wp-content/uploads/2014/04/Coastal_Restoration_report.pdf)

<sup>32</sup> Conathan, M., Buchanan, J., & Polefka, S. (2014, April). The Economic Case for Restoring Coastal Ecosystems. Retrieved from [https://cdn.americanprogress.org/wp-content/uploads/2014/04/CoastalRestoration\\_report2.pdf](https://cdn.americanprogress.org/wp-content/uploads/2014/04/CoastalRestoration_report2.pdf)

the Chesapeake Clean Water Blueprint by 2025. As chair of the Executive Council of the Chesapeake Bay Program, Terry announced approximately \$7.4 million in funding to restore the Chesapeake Bay.<sup>33</sup> As Virginia's next governor, Terry will continue to restore our aquatic ecosystems and aggressively seek out federal and private funding to restore our vital aquatic ecosystems. That includes ensuring that every rural community has access to broadband so that we can help our farmers transition to sustainable, innovative farming technologies that reduce nutrient and pollutant runoff into our waterways.

- **Build resilient energy delivery models, modernize our grid, and invest in advanced metering technologies.** When a grid is wholly dependent on centralized production and delivery of the generated energy, a downed power line or failure on one portion of the grid can be catastrophic for entire communities, as we recently saw in Texas. As Virginia moves to a clean energy future, we must prioritize not only modernizing our grid, but also diversifying the energy sources we rely on and supporting localized methods of delivery. By incorporating more renewable sources and implementing more distributed resources like rooftop solar and battery storage, that can be sited close to load centers, we can improve the efficient delivery of energy, protect against potential grid failures or attacks, and continue to deliver energy during an emergency. Additionally, integrating “smart grid” technologies and advanced metering infrastructure will make it easier to restore power after disturbances by enabling quicker identification of outages and the level of damage.<sup>34</sup> These upgrades will produce efficiencies, unlock new opportunities, and build resilience while saving Virginians money in the long-run. As governor, Terry will invest in these critical upgrades and ensure that Virginia consumers are protected during the transition.
- **Address the threat of extreme heat.** The growing threat of extreme heat continues to jeopardize the safety of our communities. Extreme heat often results in the highest number of fatalities of nationwide weather-related hazards annually,<sup>35</sup> and in July 2019 alone, more than 1,000 Virginians had to seek emergency care for heat-related illnesses.<sup>36</sup> These effects are especially devastating to lower-income communities and communities of color that are more likely to live in urban heat islands and have less access to green spaces, in large part due to historically racist urban planning practices like redlining. Nationwide, low-income and communities of color experience between 5-20°F higher temperatures in summers than high-income or whiter communities, which dramatically increases the risk of heat-related illness. We see the impacts of this racist history locally: on average, formerly redlined neighborhoods in Richmond are 5°F hotter than non-redlined areas, and the four hottest zip codes account for the highest rates of emergency

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<sup>33</sup> The Associated Press. (2015, October 20). Virginia Receiving \$3.2M in Bay Conservation Grants. Retrieved from [https://fredericksburg.com/news/state\\_region/virginia-receiving-3-2m-in-bay-conservation-grants/article\\_928cd0fc-7737-11e5-81e8-73e6c40d4b41.html](https://fredericksburg.com/news/state_region/virginia-receiving-3-2m-in-bay-conservation-grants/article_928cd0fc-7737-11e5-81e8-73e6c40d4b41.html)

<sup>34</sup> The Smart Grid. (n.d.). Retrieved from [https://www.smartgrid.gov/the\\_smart\\_grid/smart\\_grid.html](https://www.smartgrid.gov/the_smart_grid/smart_grid.html)

<sup>35</sup> Extreme Heat. (n.d.) Retrieved from <https://www.vaemergency.gov/extreme-heat/>

<sup>36</sup> Balch, B. (2019, July 22). In July, More than 1,000 in Virginia Have Sought Emergency Care for Heat-Related Illness. Retrieved from [https://richmond.com/news/virginia/in-july-more-than-1-000-in-virginia-have-sought-emergency-care-for-heat-related/article\\_3c86c3a0-dc04-5ff6-9aa2-1f70ca4d9936.html](https://richmond.com/news/virginia/in-july-more-than-1-000-in-virginia-have-sought-emergency-care-for-heat-related/article_3c86c3a0-dc04-5ff6-9aa2-1f70ca4d9936.html)

room trips due to heat-related illness.<sup>37</sup> As governor, Terry will make funding available to localities to implement proven, cost-effective solutions to combat extreme heat and protect Virginians. His efforts will focus on building improvements like painting roofs white, lightening black asphalt, expanding access to green spaces, and modifying building codes to increase airflow to reduce or eliminate the danger of heat islands.<sup>38</sup> Terry will also update Virginia's Emergency Operations Plan to include an emergency response plan for extreme heat and work with state agencies to evaluate and implement strategies as part of a comprehensive plan to address heat islands and their harmful effects on public health.

- **Develop climate resilient emergency shelters.** As climate change continues to endanger more and more Virginians, we must ensure we have a strong sheltering system that is focused on resilience, including our ability to continue delivering power during an emergency. As Virginia's next governor, Terry will ensure that Virginia has a comprehensive sheltering plan that can be expeditiously activated and functional. He will also work to improve Virginia's building codes and focus on key improvements to facilities that provide emergency sheltering services, like installing solar panels and investing in other forms of Distributed Generation (DG), so that they can continue to operate during an emergency. These improvements will strengthen our communities and bolster emergency preparedness.
- **Partner with the Biden Administration to conduct a full coastal study.** In order to develop comprehensive plans for the future, we must fully assess and understand the extent of the threats facing our coastal communities. This is especially critical for Hampton Roads, a high-density area that would be difficult to fully evacuate during an extreme weather event like a hurricane. During Terry's administration, the Virginia Department of Emergency Management made tremendous progress in streamlining evacuation processes by implementing the "Know Your Zone" campaign, which targeted evacuation and flood zones,<sup>39</sup> but there is more work to be done to protect our communities and infrastructure. In recent years, Virginia has set aside state matching funds to secure and conduct a Full Coastal Study in partnership with the U.S. Army Corps of Engineers, but approval for the study has been languishing at the federal level for years. As governor, Terry will partner with the Biden administration to ensure this critical study is funded and completed, enabling the Commonwealth to develop and implement short- and long-term solutions that will build resilient communities that are prepared for evacuations and sheltering, and invest in the infrastructure needed to mitigate environmental threats.

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<sup>37</sup> Plumer, B. & Popovich, N. (2020, August 24). How Decades of Racist Housing Policy Left Neighborhoods Sweltering. Retrieved from <https://www.nytimes.com/interactive/2020/08/24/climate/racism-redlining-cities-global-warming.html>; Balch, B. (2019, July 22). In July, More than 1,000 in Virginia Have Sought Emergency Care for Heat-Related Illness. Retrieved from [https://richmond.com/news/virginia/in-july-more-than-1-000-in-virginia-have-sought-emergency-care-for-heat-related/article\\_3c86c3a0-dc04-5ff6-9aa2-1f70ca4d9936.html](https://richmond.com/news/virginia/in-july-more-than-1-000-in-virginia-have-sought-emergency-care-for-heat-related/article_3c86c3a0-dc04-5ff6-9aa2-1f70ca4d9936.html)

<sup>38</sup> Morrison, J. (2019, September 12). Can We Turn Down the Temperature on Urban Heat Islands? Retrieved from <https://e360.yale.edu/features/can-we-turn-down-the-temperature-on-urban-heat-islands>

<sup>39</sup> Canty, M. (2017, September 8). Here are the New Evacuation Zones for Coastal Virginia. See Which Zone Your Region is in. Retrieved from <https://www.dailypress.com/weather/dp-nws-new-hurricane-evacuation-plan-va-0602-20170601-story.html>

## Invest in Clean Energy Jobs and Technologies of the Future

Clean energy was one of the harder-hit sectors by the COVID-19 pandemic.<sup>40</sup> More than 400,000 clean energy workers in the U.S. have lost their jobs, and many of those jobs are not predicted to come back until 2023.<sup>41</sup> Rebuilding our clean energy economy and tackling the most pressing climate issues after the pandemic will require a sustained commitment to the clean energy goals Virginia has established, innovative solutions, and public-private partnerships. Together, we can develop the technologies and train the workforce we need to transition away from fossil fuels, while protecting Virginia's consumers. Through investments in the Commonwealth's oversight bodies, including the SCC, we can ensure they have the resources they need to do their jobs and protect consumers. Terry's plan will:

- **Expand our clean energy workforce.** Although advanced energy sectors currently employ over 100,000 Virginians, 22% of employers state that it is very difficult to find qualified candidates for jobs in advanced energy.<sup>42</sup> As Virginia continues to transition to a clean energy future, we can expect the creation of approximately 13,000 jobs per year thanks to the bold clean energy targets the Commonwealth has established.<sup>43</sup> As Virginia's 72nd Governor, Terry oversaw significant growth in the clean energy sector. He also partnered with the community colleges to increase access to courses on renewable energy, made affordable through programs such as the New Economy Workforce Grant Program, a first-in-the-nation program established by Terry in 2016. As Virginia's next governor, Terry will continue to build the clean energy workforce by collaborating with Virginia's institutions of higher education and clean energy industries to expand capacity for relevant courses, develop a hands-on curriculum, and expand apprenticeship and pre-apprenticeship programs that provide students with the skills required for these well-paying jobs. As governor, Terry will also prioritize re-training for the 24,000 Virginians who currently work in predominantly rural fossil fuel industries so they can access the clean energy jobs of the future. These efforts will be especially critical as Virginia continues to grow its offshore wind projects.<sup>44</sup>
- **Establish Virginia as a leader in environmental technology innovation.** Virginia is home to many top-notch institutions of higher education and should be leading the nation in developing the clean energy technologies that will power our future and drive the Commonwealth to an economy-wide carbon free future. One example of their work is Virginia Tech's Center for Renewable Energy and Aero/Hydrodynamic Technology (CREATE), which has already made advancements in wind energy research<sup>45</sup> and is

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<sup>40</sup> Ricketts, S., Clifton, R. & Oduyeru, L. (2020, April 30). States Are Laying a Road Map for Climate Leadership. Retrieved from <https://www.americanprogress.org/issues/green/reports/2020/04/30/484163/states-laying-road-map-climate-leadership/>

<sup>41</sup> More Than 400,000 U.S. Clean Energy Jobs Have Been Lost So Far During the Pandemic. (2021, January 15). Retrieved from <https://e360.yale.edu/digest/more-than-400-000-u-s-clean-energy-jobs-have-been-lost-so-far-during-the-pandemic>

<sup>42</sup> VA Fact Sheet. (2019). Retrieved from <https://info.aee.net/hubfs/AEE-Jobs-VA-18-%20final.pdf>

<sup>43</sup> Barnes, C., Cromer, M., Town, M., & Shelton R. (n.d.). Building an Equitable Clean Energy Economy for Communities and Workers. Retrieved from <http://www.vcnva.org/building-an-equitable-clean-energy-economy-for-communities-and-workers-2/>

<sup>44</sup> Ibid.

<sup>45</sup> Renewable Energy. (n.d.). Retrieved from <https://create.centers.vt.edu/research/renewable-energy.html>

currently working on developing new battery technologies, which are essential to our transition to clean energy.<sup>46</sup> As governor, Terry will partner with the Biden administration to secure federal funds to create regional ecosystems of clean energy innovation and build capacity to identify and target viable emerging technologies that can be integrated in these renewable energy projects. He will also invest in our institutions of higher education and support research that will establish Virginia as a national leader.

- **Establish Virginia as the national leader in offshore wind.** As Virginia's 72nd Governor, Terry secured the first and only lease in federal waters for wind energy research in Virginia, which was praised by environmental groups, as it positioned Virginia as a national clean energy leader. And building off of this project, Virginia is set to be home to the largest off-shore wind project in the nation.<sup>47</sup> This project will be capable of powering up to 660,000 homes with its 2.64 GW energy generation capacity—equivalent to taking 1 million cars off the road.<sup>48</sup> It is also projected to generate 900 new jobs annually during construction and 1,100 new jobs every year during operation, which will have a tremendous economic impact.<sup>49</sup> Companies are already relocating to Virginia pursuing manufacturing opportunities for offshore wind, and Terry will work aggressively as our next governor to attract more industry to the area.<sup>50</sup> Terry will also promote Virginia's unique port and workforce advantages and support Virginia's Offshore Wind Development Authority that currently does not receive any state funds. As Virginia continues to build its offshore wind capacity, Terry will partner with the Biden administration to identify additional areas off the coast of Virginia that can be used for future wind farms and secure additional lease sites for third-party vendors. Holistically, these efforts will ensure Virginia becomes and remains a national leader on offshore wind.

### **Integrate Clean Energy in Our Education System & Schools**

As we fight to mitigate the effects of climate change, combat dangerous air pollution, and invest in clean energy solutions, we have to invest in our education system and infrastructure. Virginia's school infrastructure is outdated, inefficient and exposes our students to dangerous environmental contaminants. Improving school infrastructure and investing in clean energy technologies and transportation will reduce our schools' carbon footprints, prevent our students from being exposed to environmental contaminants, improve educational outcomes for students

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<sup>46</sup> Ma, L. (n.d.). Alternative and Auxiliary Energy Lab. Retrieved from: <https://create.centers.vt.edu/facilities/alternativeauxenergy.html>

<sup>47</sup> Moriarty, T. (2015, March 24). BOEM Issues First Wind Energy Research Lease In Federal Offshore Waters. Retrieved from <https://www.boem.gov/newsroom/press-releases/boem-issues-first-wind-energy-research-lease-federal-offshore-waters>

<sup>48</sup> Guzman, J. (2020, December 23). Dominion Files Plans For Largest Offshore Wind Project in the US. Retrieved from <https://thehill.com/changing-america/sustainability/energy/531473-dominion-files-plans-for-largest-offshore-wind-project>; Hurdle, J. (2021, February 24). On U.S. East Coast, Has Offshore Wind's Moment Finally Arrived? Retrieved from <https://e360.yale.edu/features/on-u-s-east-coast-has-offshore-winds-moment-finally-arrived>

<sup>49</sup> Guzman, J. (2020, December 23). Dominion Files Plans For Largest Offshore Wind Project in the US. Retrieved from <https://thehill.com/changing-america/sustainability/energy/531473-dominion-files-plans-for-largest-offshore-wind-project>

<sup>50</sup> Vogelsong, S. (2020, November 30). With Offshore Wind, Virginia Hopes a 21st-Century Manufacturing Boom Will Offset a Hefty Price Tag. Retrieved from <https://www.virginiamercury.com/2020/11/30/in-offshore-wind-virginia-hopes-a-21st-century-manufacturing-boom-will-offset-a-hefty-price-tag/>

and provide critical learning opportunities. They will also ultimately save localities money, allowing them to reallocate funds into stocking our classrooms with the necessary resources to ensure an equitable, world-class education for our students. In addition to identifying state funds to support these investments, Terry will work with localities to leverage the more than \$2 billion federal dollars from President Biden’s American Rescue Plan, which can be used to support critical health and safety upgrades for our schools. Terry’s plan will:

- **Improve school infrastructure and invest in green technologies.** Many of Virginia’s schools are in dire need of being repaired or rebuilt due to outdated or crumbling infrastructure, with billions of dollars in needs across the Commonwealth. This results in our students being exposed to potentially dangerous environmental hazards, our local school divisions are losing money because of inefficient and outdated infrastructure, and educational outcomes suffer.<sup>51</sup> In fact, energy consumption represents the second-highest operational expense for schools, with as much as 30% used inefficiently.<sup>52</sup> This creates a cycle by which localities cannot afford to make the necessary repairs, so they continue to overspend on energy costs, all the while exposing our students to contaminants. As Virginia’s 72nd Governor, Terry created the VirginiaSAVES program, which helps localities and school divisions finance energy efficiency measures. For example, the VirginiaSAVES program funded Pittsylvania County schools’ upgrade to energy efficient LED lights, which will result in at least \$220,000 in annual energy savings and \$4.4 million over 15 years.<sup>53</sup> As governor, Terry will build upon this progress, establishing clear benchmarks to track energy use in our schools, identify areas of acute need, and pursue every avenue to invest in school infrastructure, including public-private partnerships for school construction and energy-efficient upgrades like new HVAC systems, light bulbs, electric heat pumps and more. He will also leverage federal and state dollars to support local financing efforts and make funds available to increase energy efficiency.
- **Offer experiential learning opportunities for students during the transition to clean energy.** Clean energy jobs are expected to grow considerably in the Commonwealth as we strive to meet our 100% clean energy standard and we have to ensure our workforce is prepared to meet that demand. Terry released a bold [plan](#) to make Virginia the best state in the nation for STEM-H and computer science education, and as our schools begin to implement new clean energy technologies, we can offer students opportunities to apply classroom lessons and knowledge during hands-on learning experiences. This will not only cultivate interest in clean energy jobs, but it will also prepare students to enter the workforce. Terry will partner with the private sector, community colleges, and institutions of higher education to offer certification programs for students interested in

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<sup>51</sup> Establishing Environmental Public Health Systems for Children at Risk or With Environmental Exposures in Schools. (2017, November 7). Retrieved from <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2018/01/18/establishing-environmental-public-health-systems-for-children>

<sup>52</sup> Schools: An Overview of Energy Use and Energy Efficiency Opportunities. (n.d.) Retrieved from <https://www.energystar.gov/sites/default/files/buildings/tools/SPP%20Sales%20Flyer%20for%20Schools.pdf>

<sup>53</sup> Eco-Friendly Energy Improvements Project Details. (n.d.). Retrieved from [https://www.virginiaresources.gov/portfolio/projects/6/eco\\_friendly-energy-improvements](https://www.virginiaresources.gov/portfolio/projects/6/eco_friendly-energy-improvements)

learning these technologies that can easily translate into employment opportunities upon graduation.

- **Support Green Ribbon Schools.** The U.S. Department of Education has a program that incentivizes local school divisions to reduce their environmental impact, improve students' health and wellness, and provide effective and sustainable education through the Green Ribbon School recognition of achievement. Green Ribbon Schools are selected based on their ability to improve energy efficiency, waste management, environmental quality and offer opportunities for STEM education. In 2020, only one elementary school and one school division out of 132 in Virginia earned the award.<sup>54</sup> As Virginia's next governor, Terry will ensure Virginia provides local school divisions with support and technical guidance in their effort to achieve a Green Ribbon School certification.
- **Expand Virginia's use of electric school buses.** Transportation is the leading source of carbon emissions in Virginia, with nearly a million school-aged children inhaling diesel-powered air pollutants on their daily rides to school.<sup>55</sup> Exposure to pollutants, even on a short-term basis, can be detrimental to our students, leading to lower test scores and increased likelihood of absences or suspension.<sup>56</sup> In 2019, Governor Northam announced a \$20 million initiative to fund electric school buses throughout the Commonwealth's school divisions. In 2021, the General Assembly established an Electric Vehicle Grant Fund and Program focused on expanding financing and access to EV school buses to all Virginia school districts. Each electric school bus equates to taking 5.2 cars off the road,<sup>57</sup> and compared to diesel-fueled school buses, electric buses are about 60% less expensive to operate, saving school divisions nearly \$6,400 per bus on fuel and maintenance.<sup>58</sup> The benefits of electric school buses do not end on the road. Innovative and efficient use of EVs will improve our air, save our tax dollars, and provide surplus energy to our communities. As Virginia's next governor, Terry will work to electrify Virginia's fleet of school buses by leveraging federal and state funds and exploring public-private partnerships that will facilitate the transition without increasing utility costs.

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<sup>54</sup> U.S. Department of Education Green Ribbon Schools Announced. (2020, April 22). Retrieved from <https://www.ed.gov/news/press-releases/us-department-education-green-ribbon-schools-announced-1>

<sup>55</sup> Pupil Transportation. (n.d.). Retrieved from <https://www.doe.virginia.gov/support/transportation/index.shtml>

<sup>56</sup> Persico, C. (2019, November 20). How Exposure to Pollution Affects Educational Outcomes and Inequality. Retrieved from <https://www.brookings.edu/blog/brown-center-chalkboard/2019/11/20/how-exposure-to-pollution-affects-educational-outcomes-and-inequality/>

<sup>57</sup> Dominion Energy Proposes Largest Electric School Bus Initiative in the Country. (2019, August 29). Retrieved from <https://www.13newsnow.com/article/news/local/virginia/dominion-energy-proposes-largest-electric-school-bus-initiative-in-the-country/291-d14c2f21-3bdd-4dbc-9efd-865ab6f38d9a>

<sup>58</sup> Kennedy, M. (2019, September 25). Virginia Announces \$20 Million Electric School Bus Initiative. Retrieved from <https://www.asumag.com/green/sustainability-initiatives/article/20857371/virginia-announces-20-million-electric-school-bus-initiative#:~:text=The%20money%20will%20help%20school,their%20diesel%2Dpowered%20bus%20fleet.&text=Virginia%20says%20it%20will%20spend,school%20buses%20in%20the%20state>