



**VISION FOR REVITALIZING THE U.S. ENERGY SECTOR
&
GROWING THE ECONOMY**

**50% RENEWABLE ENERGY BY 2030
&
100% CLEAN ENERGY BY 2050**

The next four years present an opportunity to revitalize the U.S. energy sector, make the nation the world’s clean energy superpower, grow the economy, bring billions in capital investment and leaseholder payments to rural America, and create thousands of high-quality, middle-class jobs in cities and towns across the United States.¹

This opportunity can be seized by setting an interim target of at least 50 percent renewable energy by 2030 and 100 percent clean energy no later than 2050. Meeting these goals is within reach² and cost-effective.³ Below, AWEA provides recommendations on policies for the electric sector that, if implemented, would achieve those ends.⁴

¹ See, e.g., 2020 U.S. Energy and Employment Report by the Department of Energy (finding the wind industry contributed 114,800 jobs in 2019 and that wind energy employment grew 3.2% since 2018), available at <https://www.usenergyjobs.org/s/USEER-2020-0517.pdf>.

² See, e.g., Projected Effects of the Clean Energy Standard Act of 2019, Resources for the Future, available at https://media.rff.org/documents/RFF-IB-19-03_CES_4.pdf (estimating an increase in generation by renewables from 30% to 56% of total generation in 2035 from a federal Clean Energy Standard, and achieving approximately 96% in 2050). The net benefits of that policy are estimated over the 2020–2035 time period to be a value of \$579 billion. *Id.*

³ EIA’s 2020 Annual Report shows an 80% reduction below 2005 levels is achievable at moderate cost. EIA February 2020 Monthly Energy Review, Table 11.6, at 211, available at <https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>; EIA Annual Energy Outlook 2020, Reference Table #18, https://www.eia.gov/outlooks/aeo/excel/aeotab_18.xlsx, Other Alternative Policies Cases Table #18, https://www.eia.gov/outlooks/aeo/tables_side.php.

⁴ It is important to note that while the views expressed in this document largely represent consensus position of AWEA’s members, they are all not necessarily shared by every one of our members.



INTRODUCTION

Wind energy is now the top source of renewable electricity generation in the country according to the U.S. Energy Information Administration.⁵ In fact, wind projects were able to deliver 7.2 percent of the nation’s electricity in 2019.⁶ That means U.S. wind farms power over 32 million homes from close to 60,000 wind turbines spinning across 41 states.⁷

Because costs for wind energy have fallen by 70 percent over the last decade, it is now one of the least-cost sources of new electricity generation and remains one of the most widely available, fastest, and cheapest ways to cut carbon pollution.⁸ Indeed, even when considering carbon emissions from manufacturing and construction associated with building wind farms, a typical wind turbine repays its “carbon footprint” in six months or less and provides low-cost, carbon-free electricity for the remainder of its 20- to 30-year lifespan.⁹

Although wind power is one of the cheapest sources of new electricity and most effective options for reducing carbon emissions, barriers to deployment still exist—preventing the US from fully realizing the economic investment, job creation, low-cost power, customer savings, and environmental benefits from significant wind deployment. Carbon policies can drive fundamental changes in the generation mix, but they alone are not sufficient to deploy the levels of wind and other renewable energy necessary to achieve 50 percent renewable energy by 2030. To meet this deployment goal and deliver reliable, affordable power, two main barriers must be removed: (1) the existing

⁵ See Richard Bowers, *Wind has Surpassed Hydro as Most-used Renewable Electricity Generation Source in U.S.*, U.S. Energy Information Administration, Feb. 26, 2020, available at <https://www.eia.gov/todayinenergy/detail.php?id=42955>; see also 2019 Clean Jobs America Analysis (finding that wind and solar account for nearly 2 out of every 5 construction jobs in the electric generation sector) available at <https://e2.org/reports/clean-jobs-america-2019/>.

⁶ See *id.* at <https://www.eia.gov/todayinenergy/detail.php?id=42955>.

⁷ *Id.*

⁸ In 2019 alone, wind cut over 42 million cars’ worth of carbon emissions. See *Carbon Policy*, American Wind Energy Ass’n, available at <https://www.awea.org/policy-and-issues/electricity-policy/carbon-policy>.

⁹ *Id.* According to the Department of Energy, wind energy produces 99.8 percent of the carbon emissions savings expected of a zero-emissions resource even when accounting for increased cycling of fossil generation to help integrate variable resources like wind. See D. Lew, *The Western Wind and Solar Integration Study Phase 2*, NREL, Sep. 2013, available at <https://www.nrel.gov/docs/fy13osti/55588.pdf>.

transmission system must be enhanced and expanded, and (2) the permitting process must be sped up and made more certain.

First, expanding the transmission grid will be essential for cost-effectively transforming the U.S. generation mix and allowing customers to access the lowest cost electricity resources. The expansion of transmission infrastructure has declined from nearly 40,000 circuit miles over the last decade to less than 15,000 circuit miles planned over the next six years.¹⁰ This is largely due to present regulatory hurdles—inadequate transmission planning to meet energy policy goals, cost allocation that does not support expansion of the grid, and siting hurdles at the state level that limit interstate transmission development.

While a wind project typically can be designed, built, and commissioned in one to three years, a transmission line project must follow regulations and procedures that can take ten years before the line can be placed in service. Given the long lead-times in transmission planning and development, time is of the essence to ensure that the transmission system can meet the needs of a 21st century U.S. economy and clean energy deployment goals. The encouraging news is that the increased transmission investment needed to support new renewable resources can reduce customer rates, ultimately pays for itself in reliability and economic benefits,¹¹ and would support thousands of jobs.¹²

Another significant barrier to renewable deployment is the time that it takes to secure permits required to build and operate renewables. While wind power has some of the lowest environmental impacts of any source of electricity generation, it still faces an unduly lengthy permitting process that can forestall the nation from realizing these benefits and meeting clean energy goals. For instance, while America's public lands have

¹⁰ See 2019 Long-Term Reliability Assessment, *available at*

https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2019.pdf.

¹¹ Brattle Economists: Additional Transmission Investment Needed to Cost-Effectively Support Growth of Electrification in North America, *available at* <https://www.brattle.com/news-and-knowledge/news/brattle-economists-additional-transmission-investment-needed-to-cost-effectively-support-growth-of-electrification-in-north-america>.

¹² Construction firms employed nearly 499,000 Americans in transmission, distribution, and storage projects, representing a 4% increase since 2018. NASEO, 2020 U.S. Energy & Employment Report, *available at* <https://www.usenergyjobs.org/s/USEER-2020-0517.pdf>.



extraordinary potential for wind energy,¹³ currently, only about five percent of installed wind energy capacity in the U.S. is on federal public lands or waters.¹⁴ This is largely due to the fact that developing on federal lands and waters triggers federal permitting that imposes unnecessary complexity, expense, and time to developing thereon. In addition, even on private lands, obtaining federal permits, such as for wildlife, has often chilled wind energy development due to unduly long timelines and excessive costs related to the permitting review process. These permitting delays can have ripple effects for the development of onshore and offshore wind, as well as transmission development, by disrupting project planning, supply chain, and construction logistics, which can harm project economics and, at times, project viability.

WIND INDUSTRY RECOMMENDATIONS FOR KEY POLICIES NEEDED TO ACHIEVE RENEWABLE AND CLEAN ENERGY TARGETS

As there is no silver bullet for reaching a 50 percent renewable energy goal by 2030 and 100 percent clean energy by 2050, AWEA offers below a suite of key policies, which can be considered, in whole or in part, to achieve those goals. To be clear, the recommendations herein represent a menu of options that could be taken rather than suggesting that all of them be adopted, as some could be conflicting or overlapping. To avoid redundant or patchwork regulation of the electric sector, to the extent these policies are implemented, they should be harmonized to avoid undue burdens being placed on retail electric suppliers and other regulated entities, the creation of conflicting compliance obligations for those entities, and/or double counting. In addition, while we offer high-level recommendations on various policies, we acknowledge that there are many details that will have to be worked out to implement these recommendations.¹⁵

¹³ Key Economic Benefits of Renewable Energy on Public Lands, CBEY, *available at* https://www.wilderness.org/sites/default/files/media/file/CBEY_WILDERNESS_Renewable%20Energy%20Report_0.pdf.

¹⁴ Bureau of Land Management, *available at* <https://www.blm.gov/programs/energy-and-minerals/renewable-energy/wind-energy>.

¹⁵ For example, what would be an appropriate starting price for carbon emissions, as well as many other details.

I. CARBON POLICIES TO ACHIEVE TARGETS

- **FEDERAL CLEAN ENERGY STANDARD OR RENEWABLE ELECTRICITY STANDARD**
 - Congress should set interim clean energy goals that put the country on the path to providing at least 50 percent renewable generation by 2030 and 100 percent clean energy by 2050 in the electric sector.¹⁶
- **NATIONAL PRICE ON CARBON**¹⁷
 - Congress should enact an economy-wide fee or a cap-and-trade regime on GHG emissions.¹⁸
- **TECHNOLOGY NEUTRAL TAX CREDIT**
 - Congress should enact a technology neutral Production Tax Credit/Investment Tax Credit (PTC/ITC), based on carbon emissions, to provide a level playing field among energy generation sources.
 - The credits should have a direct pay option, under which they would be reflected as an overpayment of taxes due, enabling a refund to the taxpayer in that taxable year.

¹⁶ In addition to climate damage mitigation, this clean energy goal has real potential benefits for American workers. Clean energy jobs offer higher and more equitable wages than the national average and are widely available to workers without college degrees. A clean energy job can translate to an 8%-19% increase in income. Mark Muro et al, *Advancing Inclusion Through Clean Energy Jobs*, Brookings Institution (Apr. 18, 2019), available at <https://www.brookings.edu/research/advancing-inclusion-through-clean-energy-jobs/>.

¹⁷ If a federal CES/RES is in place governing the electric sector, decisionmakers will need to determine if a carbon price should be done on a complementary basis in the electric sector or should apply only to sectors other than electricity to avoid double regulation.

¹⁸ A common concern among policymakers regarding carbon pricing is its impact on jobs. Assuaging fears that carbon pricing causes net job losses, new research and modeling provide evidence that carbon pricing causes job reallocation rather than net job loss. Marc Hafstead & Lauren Dunlap, *Carbon Pricing 106: Effects on Employment*, Resources for the Future (May 18, 2020), available at <https://www.rff.org/publications/explainers/carbon-pricing-106-effects-employment/>; Environmental and Energy Study Institute, "Fact Sheet - Jobs in Renewable Energy, Energy Efficiency, and Resilience (2019)," (July, 23, 2019), available at <https://www.eesi.org/papers/view/fact-sheet-jobs-in-renewable-energy-energy-efficiency-and-resilience-2019#3>. In addition, while there is a concern that carbon pricing can be regressive (*i.e.*, raise costs for consumers), the impacts can be positive if offset by various government programs. See *Carbon Pricing 104: Economic Effects across Income Groups*, available at <https://www.rff.org/publications/explainers/carbon-pricing-104-economic-effects-across-income-groups/>.

REMOVING BARRIERS TO ACHIEVE TARGETS

➤ TRANSMISSION AND MARKET REFORMS

• **TRANSMISSION INFRASTRUCTURE DEVELOPMENT**

- The Department of Energy (DOE) should delegate to the Federal Energy Regulatory Commission (FERC) its role in the permitting process for major transmission infrastructure projects.
- DOE/FERC should allow project sponsors to apply for designation of project-specific national transmission corridors.
- Congress should make clear that FERC has "backstop" authority to approve an interstate project if one state rejects a project.
- FERC should be committed to:
 - Strengthening the interregional transmission planning process to identify more efficient or cost-effective solutions.
 - Requiring robust consideration of federal and state public policies regarding GHG and clean energy standards in regional and interregional transmission plans and cost allocation.

• **MARKET REFORMS**

- FERC should be committed to:
 - Respecting state decisions on electricity supply mix and halting efforts to mitigate state-sponsored clean energy resources.
 - Integrating state and regional carbon pricing proposals into organized market rules.
 - Encouraging the expansion of organized markets.

➤ EXPEDITING THE PERMITTING OF RENEWABLES

• **IMPROVING THE EFFICIENCY OF THE NEPA REVIEW PROCESS THROUGH REASONABLE REFORMS**

- The Council for Environmental Quality (CEQ) should address undue delays and complexities in the National Environmental Policy Act (NEPA) review process without sacrificing the environmental integrity of the process.
 - Reform permitting timelines and clarify the roles of lead and cooperating agencies to help move renewable projects forward in a timely manner to meet renewable energy goals.

- **EXPEDITING WILDLIFE PERMITS THROUGH GENERAL PERMIT PROGRAMS FOR LOW IMPACT PROJECTS**
 - The Fish and Wildlife Service (FWS) should expedite a rulemaking process to create a general permit for projects that pose minimal adverse effects to eagles and endangered species and, in turn, expedite the permitting process for such projects.

 - **DEDICATING SUFFICIENT RESOURCES FOR DEPARTMENT OF DEFENSE REVIEW OF PROPOSED WIND ENERGY PROJECTS**
 - Congress should provide funding for the Department of Defense’s Military Aviation and Installation Assurance Siting Clearinghouse and military services/installations involved in energy project reviews to ensure timely processing of proposed projects.

 - **EXPANDING FEDERAL R&D TO ADDRESS WIND TURBINE AND RADAR INTERFERENCE CHALLENGES**
 - Congress should increase funding/resources for DOD, DOE, FAA, and the National Weather Service to fully test, and certify if needed, potential options to reduce impacts from wind turbines on radar (air traffic control, air defense, and weather).
 - While there are technical mitigation methods available for many of these issues, they need additional testing and validation before federal agencies will accept them when evaluating proposed wind farms.

 - **COMMITTING SUFFICIENT RESOURCES FOR FEDERAL AVIATION ADMINISTRATION REVIEW OF PROPOSED WIND ENERGY PROJECTS**
 - The Federal Aviation Authority should increase the staff dedicated to reviewing proposed wind projects to expedite reviews.
- **INCREASING RENEWABLE ENERGY ON PUBLIC LANDS/WATERS**
- **INCREASING OFFSHORE RENEWABLE ENERGY**
 - The Bureau of Ocean Energy Management (BOEM) should provide an opportunity for greater offshore wind development on both the east and west coasts.¹⁹

¹⁹ Already, about 83,000 new jobs will likely be created in the offshore wind industry by 2030, and the industry is committing further resources to prepare new workers. For example, New York state has committed \$15 million toward training its local workforce and building port infrastructure. Increased development and deployment of offshore wind projects will result in these job numbers rising. 2020 Renewable Energy Industry Outlook, Deloitte, available at <https://www2.deloitte.com/us/en/pages/energy->

- BOEM should set a goal of permitting a minimum of 12.5 gigawatts (GW) of offshore wind energy capacity by 2025 and an additional 25 GW total by 2030.
- BOEM should establish more detailed near- and mid-term plans for Wind Energy Area designations, lease identifications, and lease auctions each year over the next three years, with the goal of holding five lease auctions by 2025.
- Additional resources should be provided to BOEM and cooperating agencies, like NOAA, to facilitate timely processing of the 7 offshore wind permits pending at BOEM, the 6 additional plans expected to be submitted over the next year, and the up to 5 additional lease identifications and auctions BOEM may consider over the next several years.
- **ENACTING AN OFFSHORE WIND INVESTMENT TAX CREDIT**
 - Congress should enact a long-term investment tax credit for offshore wind energy that will make this nascent industry more cost-competitive and save money for consumers.
 - Treasury/Internal Revenue Service should make changes to existing start of construction rules for the Production Tax Credit/Investment Tax Credit to better accommodate offshore wind.
- **SITING OF RENEWABLE PROJECTS ON PUBLIC LANDS**
 - The Bureau of Land Management should set a target of permitting 30 GW of non-hydro renewable projects on their lands by 2030.²⁰

➤ INCREASING RENEWABLE ENERGY DEMAND AND LOWERING COSTS

- **SETTING A FEDERAL GOVERNMENT PROCUREMENT GOAL FOR RENEWABLE POWER**
 - Commit the federal government to relying on/purchasing renewable energy for 35 percent of its electricity supply by 2025.

[and-resources/articles/renewable-energy-outlook.html](https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf); see also available at https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf.

²⁰ Increased innovation and heightened collaboration among multiple stakeholders mean renewables are likely “to continue moving into the driver’s seat in electricity markets.” *Id.* Indeed, the U.S. Bureau of Labor Statistics has named solar installers and wind turbine service technicians as the two fastest-growing occupations in the U.S. Bureau of Labor Statistics, available at <https://www.bls.gov/ooh/fastest-growing.htm>.



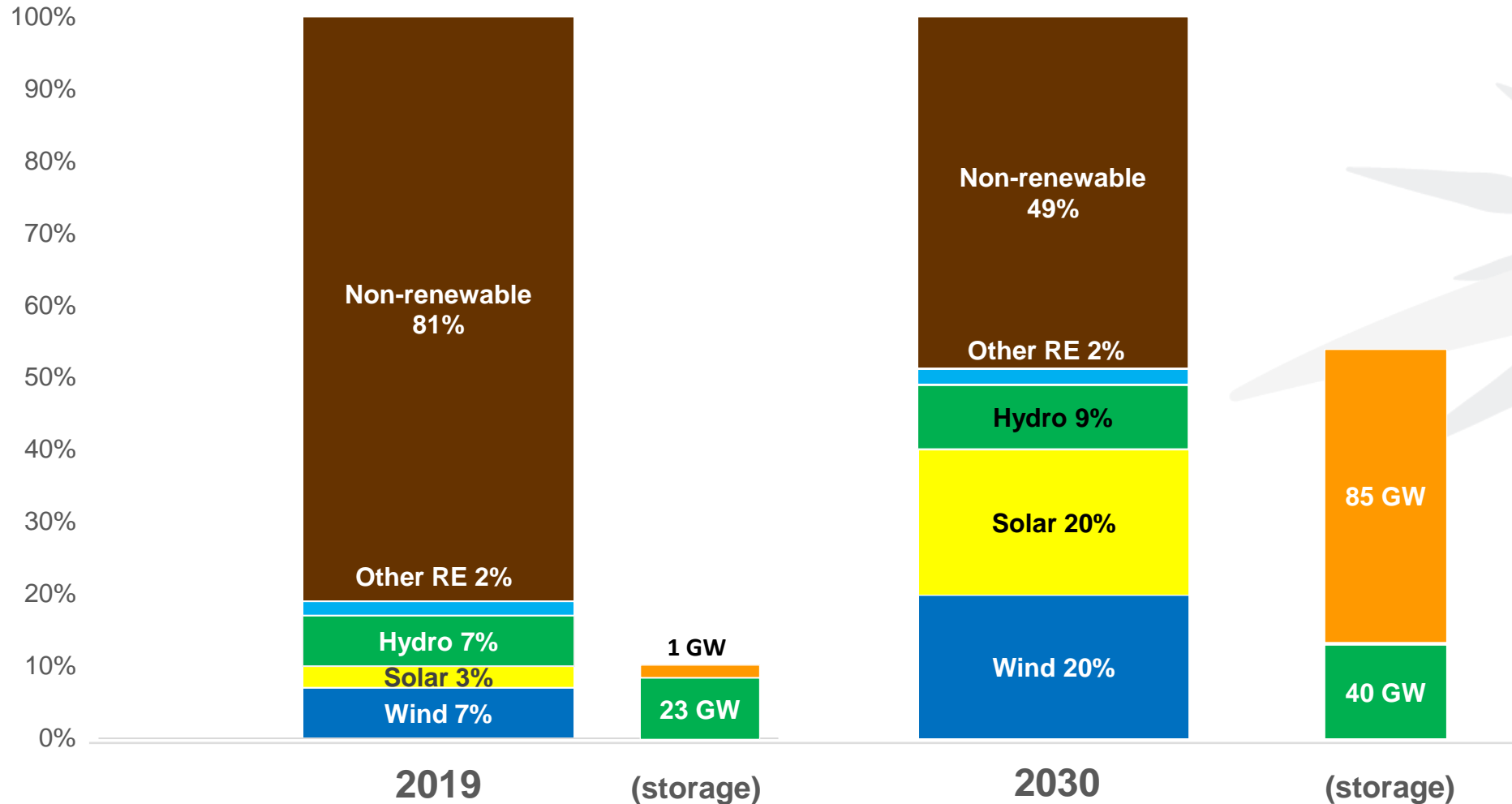
- **REMOVING TRADE BARRIERS THAT IMPEDE DEVELOPMENT OF RENEWABLE POWER**

- Direct the U.S. Trade Representative to remove trade barriers that are substantially increasing costs in the renewable project supply chain and thereby obstructing the development of renewable power.

- **SUPPORTING THE ELECTRIFICATION OF THE TRANSPORTATION, MANUFACTURING & BUILDING SECTORS**

- Congress should:
 - Provide authority to raise Corporate Average Fuel Economy (CAFE) standards so that plug-in electric vehicles will make up a growing proportion of vehicles designed and sold.
 - Enact tax credits designed to provide a larger incentive for investments in a network of direct-current fast charger infrastructure and other charging stations.

Majority Renewables by 2030



*20% wind target based on DOE Wind Vision; 20% solar target based on SEIA Solar Decade+; Hydro target based on DOE Hydrovision; 100 GW energy storage based on ESA 35x25 Vision.

Shared Advocacy Principles

Our associations share the following Advocacy Principles as critical to attaining the vision of a majority renewables by 2030:

- **Carbon: Achieve Significant Carbon Reductions**
- **Grid: Build a More Resilient, Efficient, Sustainable and Affordable Grid**
- **Markets: Advance Greater Competition through Fair Market Rules**
- **Collaboration: Actively Collaborate Across Industry Segments**