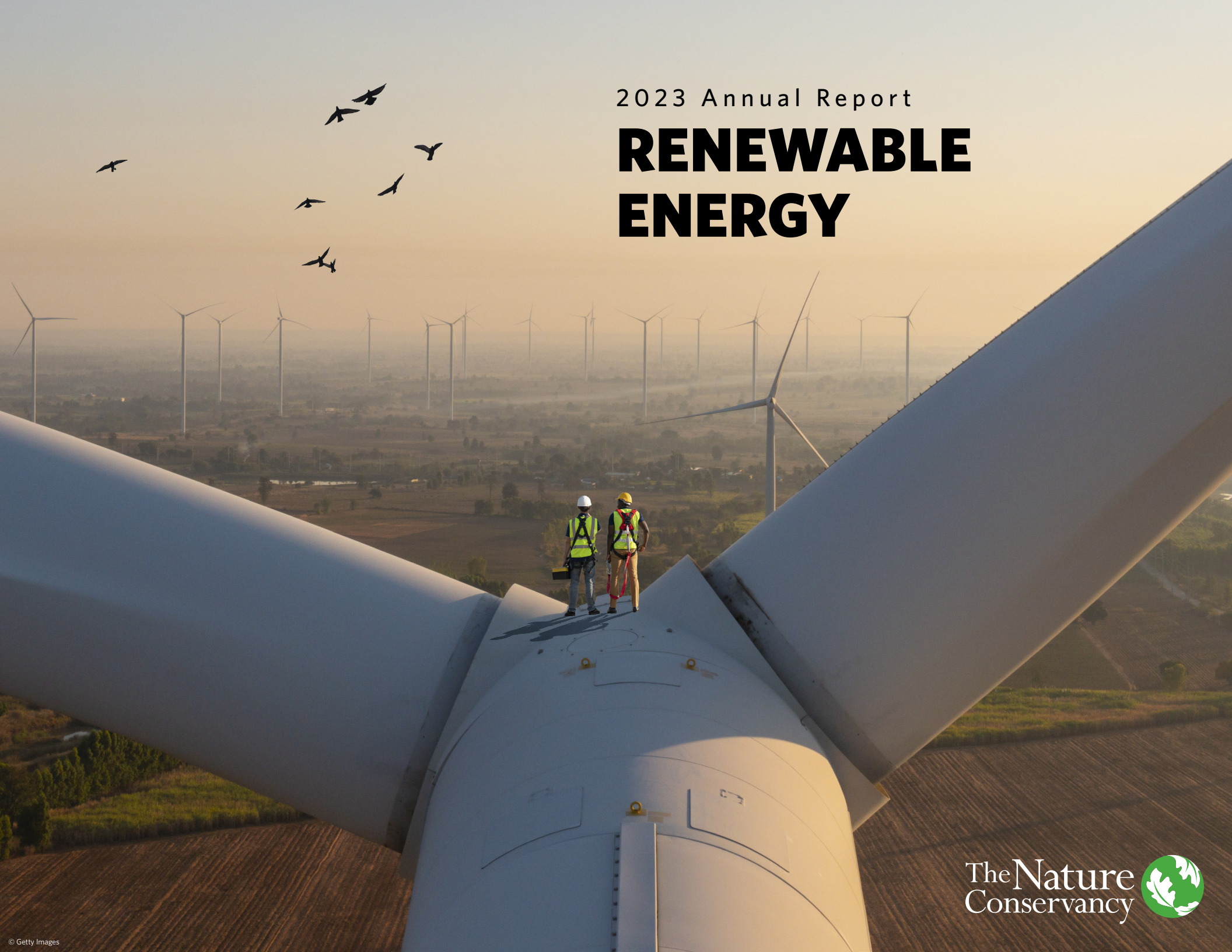


2023 Annual Report

RENEWABLE ENERGY



OUR VISION



To achieve our vision of a world where the diversity of life thrives, The Nature Conservancy (TNC) has a goal to mitigate 3 billion metric tons of carbon annually by 2030. It is lofty but achievable with the hard work of our teams and collaboration with valued partners. Accelerating a clean, green, and equitable renewable energy transition is critical to meeting our goal, which is why we are excited to share highlights of TNC's 2023 renewable energy work in this annual report.

At the heart of our achievements is the unprecedented agreement nations across the world made to [triple the amount of global renewable energy](#) by adding 7,400 GW of renewable capacity by 2030. TNC helped launch a campaign at New York Climate Week to triple global renewables, leading to over 130 countries making the commitment at COP28, the annual United Nations Climate Change Conference. TNC is now partnering with Global Renewables Alliance on an action plan to ensure this renewables deployment supports

a nature-positive and equitable energy transition.

Past policies TNC advocated for, like the Inflation Reduction Act, are starting to drive renewable infrastructure investments in the United States. To build on that momentum, TNC launched the [Power of Place](#) report which provides recommendations for smart renewable energy policies. The key finding from Power of Place offers hope: with coordinated planning and robust community engagement, the U.S. can achieve its carbon reduction goals, avoid most impacts to plants and animals and allow farmers, ranchers and foresters to continue working their land.

Legislation is also creating new opportunities to accelerate renewable energy in Europe. The Renewable Energy Directive, a legal framework that regulates renewable energy policies across European Union member states, increased the target to up to 45% by 2030. The directive also requires member states to designate

Renewable Acceleration Areas (RAAs), suitable places where renewable energy deployment can be fast-tracked due to minimal environmental impacts. TNC is working with national and regional institutions to identify and designate RAAs, including [formalizing these efforts with the Croatian government](#) and publishing a [handbook](#) in collaboration with national experts.

In India, smart renewable energy siting helps minimize conflict and maximize benefits to nature and people. [SiteRight](#) is TNC's renewable energy siting tool in India that brings together nature, social and cultural values. Renewable energy planners and developers can use SiteRight to make decisions about where new projects should go. TNC completed development of SiteRight in nine states and is on the path to going nationwide. We are [formally working with the Uttar Pradesh government](#) to support site selection and help the state meet its target of 14 GW of new renewables capacity by 2027.

These are just a few of the major accomplishments of the year, with so many more in this report. We are grateful for our many partners in these achievements and are optimistic that we can overcome the challenges that lie ahead. Together, we can accelerate the clean energy transition needed to tackle climate change and ensure a future where nature and people thrive.

Sincerely,

- **Bruce McKenney**, Global Director for Renewable Energy
- **Jessica Wilkinson**, North America Renewable Energy Deployment Team Lead
- **Elif Gündüzyeli**, Europe Renewable Energy Programme Director
- **Shivaprakash K Nagaraju**, Senior Applied Scientist, India

About **three-quarters** of global greenhouse gas emissions come from fossil-based energy use, which disproportionately impacts communities of color, low-income communities, and Indigenous Peoples. Under any scenario, renewable energy will be a critical part of the solution. Because wind and solar have a significant footprint on lands and waters, we are seeing growing concerns about environmental and community impacts - conflict that could slow down the transition to clean energy. This is a delay the world cannot afford.

In order to mitigate these conflicts, the Nature Conservancy is working

to drive renewable energy projects that support goals for climate, conservation, and communities while avoiding impacts to natural and working lands.

To accelerate the transition to a clean, green, and equitable energy future, TNC collaborates with partners to integrate climate, conservation, and community goals into energy planning, policies, and markets. We currently focus on the United States, Europe, and India—some of the highest emitting places—and we are exploring opportunities in Africa, Asia, Latin America, and Oceania. This report summarizes some of our 2023 accomplishments.



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OUR GOALS

- Mitigate **1.5 gigatons of CO2e** emissions annually.
- Avoid potential adverse impacts of renewable energy deployment to **25 million hectares** of natural areas like biodiversity-rich forests.
- Promote an **equitable energy transition** by centering local communities and Indigenous Peoples in decision making and benefit-sharing for renewable energy.



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THIS YEAR IN NUMBERS

20

REPORTS &
PUBLICATIONS

TNC released more than **20 reports and publications**.

90

NEWS
ARTICLES

TNC's work on renewable energy was covered in more than **90 news articles**, including the LA Times, The Guardian, Forbes, and more.

16

STAFF

TNC hired **16 new staff** to support TNC's renewable energy work.

200

PEOPLE

TNC grew our internal Renewable Energy Community of Practice to more than **200 people**.

7

MOUS

TNC Europe and India teams signed **7 MOUs** with partners to advance our work.

35

EVENTS

TNC staff presented at more than **35 events** including at COP28, the Annual Meeting of the World Economic Forum, SXSW, EU Sustainable Energy Week, Land Trust Alliance Rally, New York Climate Week, and more.

GLOBAL CROSS-CUTTING INITIATIVES



A Worldwide AI Energy Atlas: Global Renewables Watch

The Nature Conservancy, Microsoft, and Planet have partnered to build Global Renewables Watch (GReW), a high-resolution atlas of the world's utility-scale wind and solar energy projects. GReW aims to increase the transparency and accountability for renewable energy deployment and climate goals worldwide, notably for understanding progress toward the goals of the Paris Climate Agreement. GReW will also support goals for biodiversity and an equitable energy transition by highlighting impacts to natural areas and communities. The resulting insights will be housed on a forthcoming [website](#) and made available to policymakers, researchers, and the public for non-commercial purposes.

Going Global: Tripling Renewable Energy Capacity Campaign

TNC signed on to the [3xRenewables campaign](#), initiated by the Global Renewable Alliance and IRENA, as one of the headline supporting partners of the open letter among more than 250 organizations. The campaign for tripling renewable energy capacity by 2030 is a call addressed to world leaders and Parties to the Paris Agreement to agree on a global target to triple renewable electricity capacity to at least 11,000 GW by 2030 at COP28. This call was a success - at COP28, the final text of the global stocktake included a call on Parties to take actions toward tripling renewable energy capacity and more than 130 countries committed to tripling capacity. Beyond tripling renewable energy, the campaign identifies seven action areas to implement the target, including calls for a nature-positive energy transition. TNC and Global Renewables Alliance [announced a joint declaration](#) to work together to develop, establish, and deliver on a five-point Global Action Plan on Tripling Renewables with a Nature Positive and Just Transition.

Markets that Support Climate, Conservation and Communities

The markets team worked closely with electric vehicle manufacturer Rivian to develop a white paper, titled [Power with Purpose: Driving Change Through Clean Energy Procurement](#), which outlines lessons learned and best practices for applying the 3C framework (climate, conservation, and communities). It provides a market-tested open-source [toolkit](#), including sample Request for Proposals (RFP) content, a scoring template, and other recommendations for developing a purpose-driven procurement process.

TNC, CEBA, and Bain & Company released a white paper titled [Optimizing Impact of Clean Energy Procurement: Growing Demand for Social and Environmental Outcomes](#) that describes how and why buyers and developers consider the societal and environmental outcomes of new clean energy projects. Key findings from the white paper and survey highlight that over 60% of US-based buyers expect projects with social and environmental values built-in to be the new standard in the industry in the next five years!

TNC worked in partnership with Clean Energy Buyer's Institute on their [Beyond the Megawatt Initiative](#), to help draft the Initiative's recently-launched [Principles for Purpose-Driven Energy Procurement](#), which already has 18 signatories, representing nearly \$500B in annual revenues, committed to evaluating project options that maximize clean energy benefits with a dedicated focus on the integration of environmental sustainability, resilience, and equity considerations in procurement decisions. We look forward to more partners signing on.

U.S. CROSS-CUTTING INITIATIVES



“We’re committed to accelerating the renewable energy buildout and have to go smart to go fast. Bringing conservation groups to the table ensures that we strike the right balance, delivering clean energy solutions while safeguarding our precious natural resources and communities.”

- Jennifer Morris, TNC CEO



Leading Voice in Solar Siting Guidance: Co-leading Solar Uncommon Dialogue

TNC, the Solar Energy Industries Association (SEIA), and Stanford University, announced the [Solar Uncommon Dialogue](#) agreement to accelerate the deployment of large-scale solar in ways that advance climate, conservation, and communities. This is the culmination of 20 months of negotiation between individual solar companies, conservation and agricultural groups, environmental justice/climate equity organizations, and tribal groups to develop an agreement to accelerate large-scale U.S. solar development while championing land conservation and supporting local community interests. This has already received great coverage in the [L.A. Times](#), [New York Times](#), [Reuters](#), and [POLITICO](#).

Brownfields over Greenfields: Mining the Sun

[Mining the Sun](#) supports renewable energy development on former mine lands and brownfields. With 10 chapters contributing to the work, we are elevating opportunities across the country. In 2023, TNC released a factsheet, video, and website, and presented at the 2023 Brownfields Conference. On the ground, we advanced catalytic projects on mine lands, including the Cumberland Forest Solar Project (VA) and Starfire (KY). TNC also leads a Mining the Sun initiative in India, and is expanding this initiative to new geographies, and resources in 2024.

Power of Place: Decarbonizing the Lower 48

[Power of Place – National](#) was released this year to help energy planners across the continental U.S. build thoughtful net-zero strategies that maximize benefits for climate, nature, and people. This work builds on [Power of Place – West](#) and [Power of Place – California](#). The report concludes that with coordinated planning and robust community engagement, the U.S. can build the clean energy infrastructure needed for economy-wide, net-zero emissions by 2050 while avoiding most impacts to sensitive natural and working lands. The report has been featured in the [Washington Post](#), [Los Angeles Times](#), on [NPR](#), and more.

LEADING WITH SCIENCE



“With current siting practices, an area the size of Texas is required to accommodate the wind and solar infrastructure we need to reach nationwide net-zero emissions by 2050. By adopting the Power of Place approach, we can significantly lower the land area needed and dramatically reduce environmental impacts on those areas. This methodology shows that we can all win, ensuring a clean energy transition that is resilient, equitable, and better for nature.”

- Katharine Hayhoe, TNC Chief Scientist

7 New Publications Contributing to Peer-Reviewed Renewable Energy Science:

1. Wu, G. C., Jones, R. A., Leslie, E., Williams, J. H., Pascale, A., Brand, E., Parker, S. S., Cohen, B. S., Fargione, J. E., Souder, J., Batres, M., Gleason, M. G., Schindel, M. H., & Stanley, C. K. (2023). **Minimizing habitat conflicts in meeting net-zero energy targets in the Western United States.** Proceedings of the National Academy of Sciences, 120(4). <https://doi.org/10.1073/pnas.2204098120>
2. Holliday, C., Wisby, J. P., Roby, P. L., Samoray, S. T., & Vannatta, J. M. (2023). **Modeling migration and movement of gray bats.** The Journal of Wildlife Management, 87(3). <https://doi.org/10.1002/jwmg.22364>
3. Levin, M. O., Kalies, E. L., Forester, E., Jackson, E. A., Levin, A. H., Markus, C., McKenzie, P., Meek, J. B., & Hernandez, R. R. (2023). **Solar Energy-driven Land-cover Change Could Alter Landscapes Critical to Animal Movement in the Continental United States.** Environmental Science & Technology, 57(31), 11499–11509. <https://doi.org/10.1021/acs.est.3c00578>
4. Ortiz, A., Negandhi, D., Mysorekar, S. R., Nagaraju, S. K., Kiesecker, J., Robinson, C., Bhatia, P., Khurana, A., Wang, J., Oviedo, F., & Ferres, J. L. (2022). **An Artificial Intelligence Dataset for Solar Energy Locations in India.** Scientific Data, 9(1). <https://doi.org/10.1038/s41597-022-01499-9>
5. Feng, X., Li, S., Kalies, E. L., Markus, C., Harrell, P., & Patiño-Echeverri, D. (2023). **Low impact siting for wind power facilities in the Southeast United States.** Wind Energy. <https://doi.org/10.1002/we.2868>
6. Opperman, J. J., Juan Pablo Carvallo, Kelman, R., Schmitt, R., Almeida, R. M., Chapin, E., Flecker, A. S., Goichot, M., Grill, G., Harou, J. J., Hartmann, J., Higgins, J., Kammen, D. M., Martin, E., Martins, T., Newsock, A., Rogéliz, C. A., Justus Raepple, Sada, R., & Thieme, M. (2023). **Balancing renewable energy and river resources by moving from individual assessments of hydropower projects to energy system planning.** Frontiers in Environmental Science, 10. <https://doi.org/10.3389/fenvs.2022.1036653>
7. Kiesecker, J. M., Nagaraju, S. K., Oakleaf, J. R., Ortiz, A., Lavista Ferres, J., Robinson, C., Krishnaswamy, S., Mehta, R., Dodhia, R., Evans, J. S., Heiner, M., Priyadarshini, P., Chandran, P., & Sochi, K. (2023). **The Road to India's Renewable Energy Transition Must Pass through Crowded Lands.** Land, 12(11), 2049. <https://doi.org/10.3390/land12112049>

EUROPE

Policy Action in the United Kingdom

TNC attended the [UK Party Conferences](#) for the first time to host events to raise visibility of TNC's renewables programme and Site Right approach, and advocate for inclusion of TNC's RE principles and priorities in UK policy. See TNC's Recommendations to UK Policymakers [here](#). Throughout the year, the policy team also submitted a policy proposal to the UK Labour Party's National Policy forum, evidence and a response to UK consultations, and more on nature-positive renewables.

MOUs Signed for New Partnerships

TNC signed an MOU in the EU with [Eurelectric](#) to advance renewables while safeguarding nature. TNC also worked closely with Eurelectric on its influential [Power Plant](#) report about tackling the climate and biodiversity crises together and published a [joint statement](#) with Eurelectric in support of the EU's Nature Restoration Law. At COP28, TNC secured agreement from Eurelectric to undertake 'Power Plant 2' to develop joint industry-civil society guidance on best practice siting policy to guide and inform policymakers. TNC also signed an MOU with the [Energy Community Secretariat](#) to expedite renewable energy project planning and permitting processes by supporting the alignment of EU energy policies with non-EU countries, including the Balkans.

Montenegro

TNC signed two MOUs: one with [Eco-team and the Montenegrin Investment Agency](#) to develop and implement a national siting assessment for solar and wind in Montenegro and one with [Eco Team and the national steel company in Nikšić, Montenegro](#) to become a net zero industry hub powered by solar energy, explore storage solutions to support industrial decarbonization, and bring green jobs to Nikšić.

Implementing Policy: Informing Renewables Acceleration Areas

TNC Europe released [Mapping a Sustainable Renewable Energy Transition: Handbook for Practitioners](#), designed to equip practitioners with the knowledge to navigate the complex landscape of low-conflict renewable energy planning. This work is timely in Europe, with the reform of the [EU Renewable Energy Directive](#), which increases the targeted share of renewables in the EU to 42.5% by 2030 and includes provisions to fast track permitting. As part of this, we aim to work with EU Member States to inform Renewables Acceleration Areas (RAA), areas with high renewables potential and low environmental risks, where wait times for permitting will be reduced. TNC helped inform and secure the inclusion of RAA in the policy, and advocated for and secured commitment from the EU Commission for EU-wide guidance on implementation. TNC also joined with more than 50 NGOs across Europe in [calling for a renewables acceleration](#) that is inclusive of nature and communities and released a policy brief titled [Forging a Nature-Positive Energy Transition](#).

Croatia

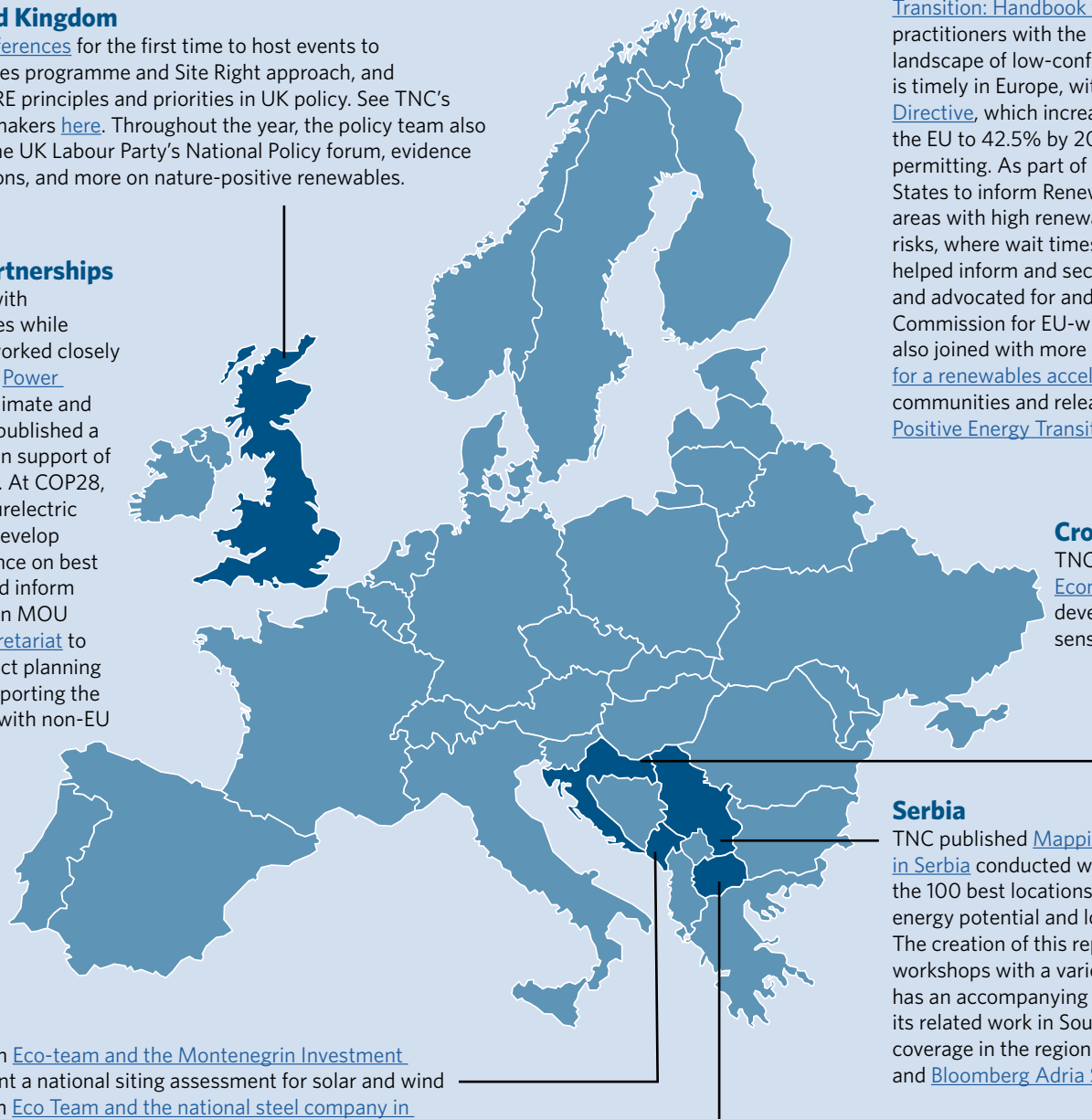
TNC signed an MOU with the [Ministry of Economy and Sustainable Development](#) to develop species distribution models for species sensitive to wind and solar development.

Serbia

TNC published [Mapping 100 Priority Locations for Solar Energy in Serbia](#) conducted with national Serbian experts, to identify the 100 best locations for solar energy development with high energy potential and low environmental and social impact. The creation of this report involved in-depth consultations and workshops with a variety of local stakeholders. This report also has an accompanying [Serbia Solar Siting Map 1.0](#). This report and its related work in Southeast Europe has received widespread coverage in the region, including on [Serbian national TV - RTS1](#) and [Bloomberg Adria Srbija](#).

North Macedonia

TNC released a report titled: [A Renewable Energy Future in North Macedonia: A Blueprint for Accelerating the Transition](#) and the related tool: [North Macedonia Renewable Energy Siting Map](#).



SiteRight: Going National

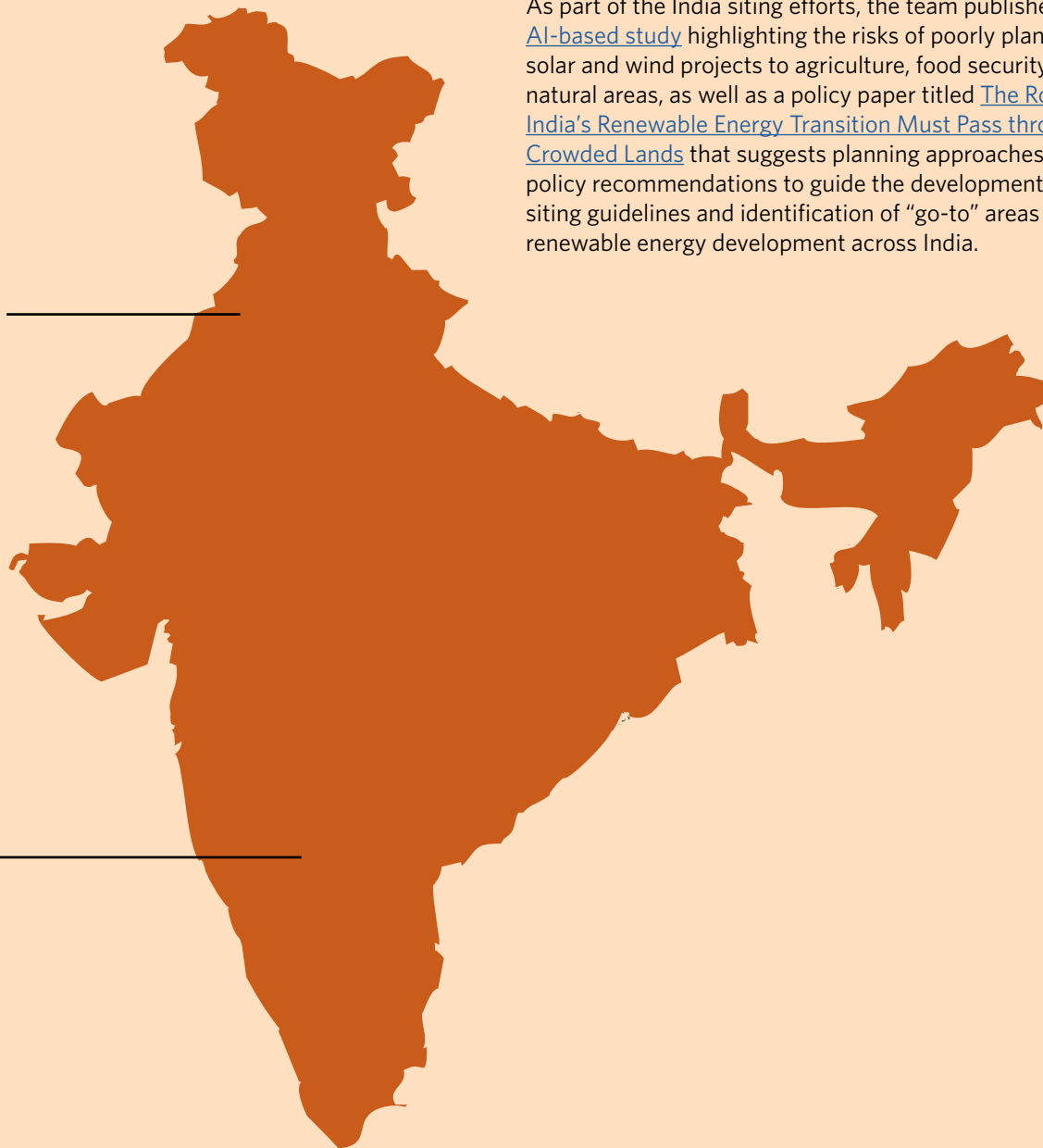
TNC will be expanding India's [SiteRight](#) tool nationally to drive utility scale solar and wind energy development on low impact land parcels. TNC introduced the tool to officials from renewable energy, power, and environment departments, as well as developers and investors; built support for data sharing; and conducted workshops to build government, developer, and investor capacity to use the tool. To support expansion, TNC signed an MOU with the Uttar Pradesh New & Renewable Energy Development Agency to develop a SiteRight tool for the state, which will inform location selection for solar and wind projects to meet the state's 14 GW target by 2027. The signing of this MOU was highlighted in [PV Magazine](#) and [Energetica](#).

TNC is Developing the First 50 MW Solar Project on a Former Coal Mine in India

We are developing the first-ever project on a former mine land in Neyveli, India. Not only will this project demonstrate the benefits of projects on degraded lands, but it also will identify opportunities for former coal mine workers to transition to work in renewable energy – offering economic and community co-benefits. TNC signed an MOU with the [Neyveli Lignite Corporation Limited](#) to spearhead this work for repurposing of closed mines for renewable energy.

Advancing Siting Knowledge

As part of the India siting efforts, the team published an [AI-based study](#) highlighting the risks of poorly planned solar and wind projects to agriculture, food security, and natural areas, as well as a policy paper titled [The Road to India's Renewable Energy Transition Must Pass through Crowded Lands](#) that suggests planning approaches and policy recommendations to guide the development of siting guidelines and identification of “go-to” areas for renewable energy development across India.



UNITED STATES

Cumberland Forest Solar Project

As part of the Cumberland Forest Project, TNC identified about 43,000 acres for solar or storage projects on former surface coal mines. Dominion Energy and Sun Tribe committed to 130 MW of development. The project will utilize Inflation Reduction Act (IRA) tax credits that provide incentives renewable energy development on mine lands and brownfields. The project also centers its community benefits plan as a key element to success. Check out the [Cumberland Forest 2022 Impact Report](#) to learn more.

Pathways for Midwest Businesses to Attain Greenhouse Gas Reduction Targets

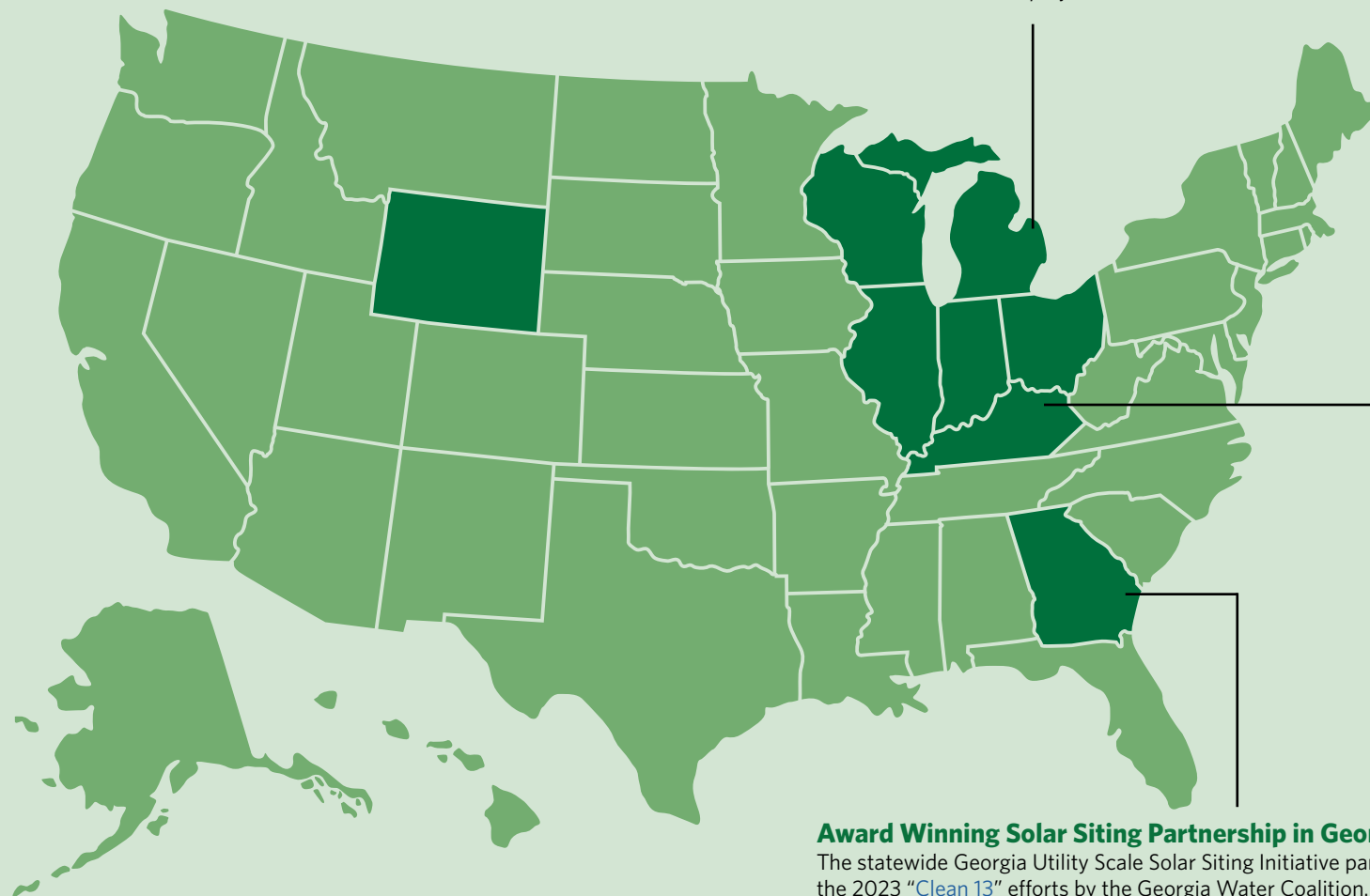
The Midwest Division's report [Charting a Clean Energy Future](#) focuses on five Midwestern states—Illinois, Indiana, Michigan, Ohio, and Wisconsin—to provide valuable insights into the critical business demand for renewables, the progress made in each state, and offers helpful tools to assist a growing number of businesses ensure renewable projects meet environmental and social commitments.

800MW in Renewable Energy Enabled on Former Starfire Coal Mine in Kentucky

The Starfire Mine in Eastern Kentucky, one of the largest coal mines in the United States, will be the new site of a solar energy center thanks to a partnership formed with BrightNight Power, Rivian Automotive, and TNC. Once the 800-megawatt project is completed, it will provide enough renewable energy to power the equivalent of half a million homes. The renewable energy is being built on industrialized lands, avoiding impacts to natural areas and serving as a model for future corporate energy transformation projects nationwide. You can read more [here](#).

Award Winning Solar Siting Partnership in Georgia

The statewide Georgia Utility Scale Solar Siting Initiative partnership was recognized as one of the 2023 "Clean 13" efforts by the Georgia Water Coalition. The partnership is led by the Georgia Wildlife Federation and includes TNC and other conservation non-profits, state and federal natural resource agencies, as well as utility, industry and local government representatives. In 2023, the Georgia Team published [Recommended Practices for the Responsible Siting and Design of Solar Development](#). This work complements the [Georgia Low Impact Solar Siting Tool](#). Check out [this video](#) to learn more!



Explore More:

- [Greening the Clean Energy Transition: Smart Siting and Pollinator-Friendly Solar Energy in Illinois](#)
- [Wyoming Coal Infrastructure Reuse Report Study](#)

7 STATE-LEVEL POLICIES ADVANCED

TNC staff worked to successfully pass seven state policies across the U.S. by convening stakeholders, giving input on bill text, and testifying in support of these bills:

Washington passed [HB1216](#) to support clean energy siting and permitting by establishing a new interagency siting coordinating council and modifying processes for project review.

Minnesota passed [MN Senate File 4](#), requiring 100% clean electricity by 2040.

Illinois passed [IL HB4412](#), which removes county-wide bans and streamlines the permitting process to ensure renewable energy projects can be built responsibly at the necessary scale and pace.

Maine passed [LD1881](#), codifying a mandatory compensation program for renewable energy developers. Revenue from land impact compensatory fees will be used to conserve, restore or protect lands.

Massachusetts Governor Maura Healey appointed TNC to a [Commission on Clean Energy Siting and Permitting](#) that will identify recommendations for how to reduce permitting timelines, ensure communities have input in siting, and ensure that benefits of the clean energy transition are shared equitably.

Rhode Island enacted [S 0684 SUBSTITUTE A](#), expanding the in-state renewables programs while barring use on undisturbed forest land.

Colorado passed [CO SB23-092](#), which creates a property-tax exemption for solar projects that incorporate agrivoltaics or conservation dual use, and stands up a state-level grant program for agrivoltaics research and demonstration projects.

“These new policies will help reduce siting conflicts, accelerate the transition to renewables and make the most out of recently passed national climate and infrastructure legislation.”

- Jessica Wilkinson, Senior Policy Advisor and North America Renewable Energy Team Lead

EXPANDING OUR WORK



Expanding Our Work into New Geographies

TNC is exploring opportunities to scale our renewable energy work in Africa, Asia, Latin America, and Oceania. For example, in Peru we have started to define renewable energy zoning maps. This started in 2022 with the successful pilot in La Libertad and has plans to expand nationally in collaboration with the Ministry of Energy and Mines. This [factsheet](#) and [GIS mapping tool](#) show the results and methodology for identifying renewable energy zones. We will continue to expand this work and further explore strategy development in Peru, China, Australia, and other geographies.

Exploring Offshore Wind

TNC co-hosted a Marine Law Symposium titled [Can Offshore Wind Development Have a Net Positive Impact on Biodiversity? Regulatory and Scientific Perspectives and Considerations](#) with the Roger Williams University Law School, bringing together scientific, regulatory, legal, and industry experts from the United States and Europe. This pathbreaking symposium explored the concept of net positive impact on biodiversity in the ocean and near coastal environment, and whether and how it should be integrated into offshore wind projects in the United States.

TNC Released Two Reports on Offshore Wind this Year. Take a Deeper Dive:

- [Offshore Wind for Nature: Can Offshore Wind Development Have a Net Positive Impact on Biodiversity? Regulatory and Scientific Perspectives and Consideration](#)
- [Using Non-price Criteria in State Offshore Wind Solicitations to Advance Net Positive Biodiversity Goals](#)





WHAT'S NEXT?

We look forward to continuing our renewable energy work in 2024! Next year we will continue to make progress on our 2030 goals by accelerating renewable energy deployment in places that support a nature positive and just energy transition, in international principles, policies, and markets, and scaling our strategy to new geographies and technologies. Stay tuned!

To learn more about The Nature Conservancy's work in 79 countries and territories, and in all 50 U.S. states, visit [nature.org](https://www.nature.org).