

D I A L O G U E

# RENEWABLE ENERGY AND BIODIVERSITY CONSERVATION

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## SUMMARY

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The rapid transition of energy resources from fossil fuels toward renewables has been widely recognized as an essential tool in mitigating climate change. Yet, renewable energy development projects and facilities can be land use-intensive and have the potential to negatively impact conservation areas. To attempt to tackle these issues, President Joseph Biden signed Executive Order No. 14008, *Tackling the Climate Crisis at Home and Abroad*, which (1) outlines a way forward for increasing both renewable energy production and acreage of conservation areas, and (2) pledges a target of conserving 30% of the nation's lands and waters by 2030. On September 28, 2021, the Environmental Law Institute hosted a panel of experts that explored the intersections of climate mitigation, renewable energy development, and biodiversity conservation. Below, we present a transcript of that discussion, which has been edited for style, clarity, and space considerations.

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**James McElfish Jr.** (moderator) is Director of the Sustainable Use of Land Program and a Senior Attorney at the Environmental Law Institute.

**Patrick Donnelly** is the Nevada State Director at the Center for Biological Diversity.

**Margaret Spring** is the Chief Conservation and Science Officer at the Monterey Bay Aquarium.

**Priya Gandbhir** is a Staff Attorney at the Conservation Law Foundation.

**James McElfish:** Welcome to this panel on renewable energy and biodiversity conservation. This is an area where we clearly want both of these things. We want to speed the transition to renewable energy for the benefit of the climate and public health, and we want to conserve biodiversity.

We're confronted with a set of new challenges. In some instances, people have tried to set up the renewable energy transition as an obstacle to biodiversity conservation, but in fact there are ways to accommodate and address both, if we plan ahead. Our panelists are going to talk about some of the approaches to do that.

We have important international responsibilities and local goals for both renewable energy and biodiversity conservation. We have the international Convention on Biological Diversity.<sup>1</sup> We have national commitments to endangered species and migratory birds.<sup>2</sup> Under the Fish and Wildlife Coordination Act<sup>3</sup> and other laws, we have many state requirements and goals. And in many of our local governments, we have a concern for both being

nature-friendly and dealing with climate impacts when considering renewable energy changes.

Our topic today is framed to some degree by the Joseph Biden Administration's announcement of the goal to conserve 30% of our nation's lands and marine waters for conservation purposes by 2030 (the "30 x 30" goal).<sup>4</sup> Our renewable energy goals are stated in various ways by both state and federal governments—sometimes dealing with specific forms of energy, like the 20% by 2030 wind energy goal, which has been around nationally for more than a decade,<sup>5</sup> and also state renewable energy portfolio standards.

Energy, land use, and impacts on biodiversity have always gone hand-in-hand. I started my legal career 40 years ago as a coal mine regulator in the U.S. Department of the Interior (DOI). When it comes to biodiversity effects and coal, we have impacts of the mines themselves. Even if we reclaim, the biodiversity on those mine sites is far diminished from what it had been. There are also the effects from the railroad lines bringing the coal to power plants, the coal ash disposal areas, and so on. We have the same impacts from oil and natural gas—

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1. 1760 U.N.T.S. 79, 143; 31 I.L.M. 818 (1992).

2. 16 U.S.C. §§1531-1544, 16 U.S.C. §§703-712.

3. Pub. L. No. 73-121, 48 Stat. 401 (1934), 16 U.S.C. §§661-666c.

4. Exec. Order No. 14008, 86 Fed. Reg. 7619, 7627 (Feb. 1, 2021).

5. OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY (2008), <https://www.energy.gov/eere/wind/20-wind-energy-2030-increasing-wind-energys-contribution-us-electricity-supply>. In 2021, the Biden Administration also announced a goal of 30 gigawatts of offshore wind energy by 2030. Press Release, Department of Energy, Energy Secretary Granholm Announces Ambitious New 30GW Offshore Wind Deployment Target by 2030 (Mar. 29, 2021), <https://www.energy.gov/articles/energy-secretary-granholm-announces-ambitious-new-30gw-offshore-wind-deployment-target>.

from the drilling sites, development, pipeline networks, and distribution networks.

Renewable energy presents some different challenges. How do we deal with siting and management of utility-scale wind farms or utility-scale solar arrays? Can we deal with things that are smaller than utility-scale, such as distributed energy sources? Every source of energy we have will present a set of potential conflicts and a set of potential opportunities. To help us with these, we have a wonderful panel today to discuss both the conservation and renewable energy sides of this topic.

We have two lawyers and a conservation biologist. Let's start with the biologist, Patrick Donnelly, the Nevada state director at the Center for Biological Diversity, who has deep experience on western lands. He spends a great deal of time leading expeditions and working in the American West. Patrick is going to deal with some of the federal and terrestrial issues involving land-based species that are affected by renewable energy projects and decisions.

He will be followed by Margaret Spring. A lawyer by training, Margaret is the chief conservation and science officer at the Monterey Bay Aquarium in California, which is a terrific national and international educational resource. Before joining the aquarium, Margaret spent years as chief of staff and as deputy undersecretary at the National Oceanic and Atmospheric Administration (NOAA) in Washington, D.C., under the Barack Obama Administration. Margaret is going to focus on state-related goals and issues—in particular, some of the trade offs and opportunities for marine protected areas (MPAs) and conservation.

Our third panelist is Priya Gandbhir with the Conservation Law Foundation (CLF), based in Massachusetts. Priya's work focuses primarily on renewable energy and clean energy opportunities. She has done work on both offshore wind and energy policy at the state and local levels, and has also served as a local government official. Priya will give us the opportunity to look at both terrestrial and marine issues, utility regulation issues, and some local government policies.

**Patrick Donnelly:** Thank you, Jim. I come to you today from the lands of the Southern Paiute in southern Nevada, in the Mojave Desert. I'll highlight some of the impacts of renewable energy to public lands and endangered species in the California and Nevada deserts, and then talk a bit about how planning can avoid those impacts and facilitate a more rapid and environmentally sensitive deployment of renewable energy resources in our transition.

The Center for Biological Diversity is a nationwide §501(c)(3) nonprofit. We're headquartered in Tucson, Arizona, but we operate in every state in the union, as well as Mexico, and we engage with the international community as well. We fight for endangered species and public lands, but we also have our Climate Law Institute and programs in environmental health, sustainability and population, urban wildlands, and other programs.

The take-home message from renewable energy development is that there's no such thing as a free lunch. The desert is an incredibly biodiverse place. In addition to being my

home, the desert Southwest of the United States is a very special and unique ecosystem, rich in biodiversity.

For example, Chicago Valley, which is just outside my back door here in southern Nevada, is full of desert tortoises, desert bighorn sheep, and other important species. It was also the site of a proposed solar development. In general, we support solar energy development. We have a team that spends all day fighting the fossil fuel industry and supporting renewable energy. But this was the wrong place. We fought solar energy development here and we won. Chicago Valley is now protected forever from inappropriate development.

A large-scale solar installation is typically five to 10 acres per megawatt, so it's a significant allocation of land. Because the Mojave Desert has the greatest solar resource in the country, these projects are frequently sited in desert tortoise habitat. The desert tortoise is a landscape-scale endangered species in the Mojave Desert. Its conservation has driven land use policy and management in the Mojave for the 31 years that it's been protected under the Endangered Species Act (ESA).<sup>6</sup>

There have been significant issues with the desert tortoise and utility-scale solar development involving inadequate consultation with the U.S. Fish and Wildlife Service (FWS), which precipitated numerous ESA lawsuits.<sup>7</sup> For example, you might think there are 100 tortoises on a site. You go out and start clearing the tortoises out to build your solar project, but it turns out there's thousands. These animals do not survive translocations well and they don't succeed in reproduction when translocated.<sup>8</sup> So, these projects have had a significant impact on the protected species.

There have been improvements over time. That acres-per-megawatt ratio has come down. As solar panels have become more efficient, modern projects are not graded anymore. In the past, you would need to bulldoze the entire project flat and cover it in gravel with herbicides to keep down the weeds. Now, projects tend to be mowed. The topography is left intact. And, theoretically, if the project is decommissioned, it will more readily return to the original desert habitat.

There's also been an evolution in technology. Solar thermal technology is no longer in fashion. This was a type of technology where mirrors—not solar panels but just mirrors—would reflect sunlight onto a central power tower, heating up a thermal exchange medium like molten salts or pentane to power a turbine. These projects were very speculative. They also required quite a lot of water.

The Ivanpah Solar Electric Generating System on the California-Nevada border south of Las Vegas was kind of

6. U.S. Fish and Wildlife Service, *Mojave Desert Tortoise*, [https://www.fws.gov/nevada/desert\\_tortoise/dt/dt\\_pet.html](https://www.fws.gov/nevada/desert_tortoise/dt/dt_pet.html) (last visited Dec. 20, 2021); 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

7. See, e.g., *Defenders of Wildlife v. Jewell*, No. 2:14-cv-1656 (C.D. Cal. filed Mar. 6, 2014), and *Center for Biological Diversity v. United States Bureau of Land Mgmt.*, No. 1:21-cv-00174 (D.D.C. filed Jan. 19, 2021).

8. Kevin P. Mulder et al., *No Paternal Genetic Integration in Desert Tortoises (*Gopherus Agassizi*) Following Translocation Into an Existing Population*, 210 *BIOLOGICAL CONSERVATION* 318 (2017), <https://www.sciencedirect.com/science/article/abs/S0006320717307127>.

an icon for the problems with these projects. There were many hundreds of tortoises on this site. The Ivanpah Valley is an important tortoise habitat reserve for connectivity across the tortoises' range. Ivanpah was a focus of controversy in the early days of utility-scale solar development. This was about 10 or 11 years ago. Some of the lessons learned from Ivanpah hopefully helped inform future development.

One of the biggest problems of Ivanpah was how it proliferated more development in the area. There's half a dozen solar photovoltaic projects that kind of metastasized across the valley. The Ivanpah Valley was not the right place to put these projects. It was an important tortoise habitat. But due to poor planning, these projects were thrown in willy-nilly in this valley. There could be significant impacts on the long-term viability of the desert tortoise vis-à-vis migration, particularly with regard to climate-vulnerable species that are projected to migrate poleward due to climate change. This is essentially a pinch point in that northward migration. That's now been filled with industrial development. So, it's a good example of poor planning leading to poor outcomes.

Another example is the Battle Born Solar Project, which was proposed in a place called the Lower Mormon Mesa northeast of Las Vegas. The Battle Born Project was sited right next to the communities of Overton and Logandale. Lower Mormon Mesa is a popular recreation area. There's also some landscape art out there like Michael Heizer's famous "Double Negative." It is also high-quality tortoise habitat.

People there got up in arms. They tend to be red voters out there in Logandale and Overton. There was an assumption that a bunch of Donald Trump voters, who like to drive their all-terrain vehicles, killed a renewable energy project because they hate solar. That really wasn't the case. This was high-quality tortoise habitat. This was an important place to a community regardless of who they vote for. I like to say that everyone's a NIMBY ("not in my backyard") when it's their own backyard. We can't dismiss the idea that people don't want industrial development right next to their houses; think about how you'd feel if it was your house.

It's not just solar that impacts biodiversity. Geothermal energy is also a significant source of conflict, especially in Nevada, which has the highest incidence of hot springs in the United States. A hot spring is nothing more than a geothermal reservoir being brought to the surface through faulting. Hot springs are oases of biodiversity. The Great Basin is a cold desert. It's extremely cold in the winter. When cold water springs, it freezes over. But hot springs do not freeze over. As a result, they harbor numerous species that wouldn't survive elsewhere in the desert.

Geothermal energy sited next to hot springs has been found, through extensive documentation and peer-reviewed study, to almost universally affect the springs it is sited next to. With all the pumping of water and recirculation through the aquifers, it can really affect those resources. The U.S. Geological Survey said it should be considered

the rule rather than the exception that geothermal energy impacts the nearby surficial water source.<sup>9</sup>

In Nevada, we have a case study of such an effect on the Dixie Valley toad. This toad was identified as a distinct taxon of toad about five years ago. Nevada is still a biological frontier to Western sciences, and there are still species being described. This species was described from a place called Dixie Meadows, where a hot spring keeps open water through the winter and the toad can survive. Dixie Meadows is also the site of a proposed geothermal energy development. The staging area for the geothermal project is right next to this meadow that protects the species.

We petitioned FWS to protect the Dixie Valley toad under the ESA in 2017,<sup>10</sup> right around the time the project began its permitting process. We got a positive 90-day finding, which is the first step through ESA protection, in 2018. However, FWS delayed the 12-month finding, which is the final step. So, we sued over that in 2019. That litigation was wrapped up with a number of other blown deadlines that the Service had for other species.

We're still in settlement discussions on this case. If the geothermal project proceeds apace—and we have word that the Bureau of Land Management may permit it any day now—then we are strongly considering moving for a preliminary injunction to stop the construction, as the scientists say without a doubt the geothermal project puts these species at risk of extinction.<sup>11</sup>

Lithium production is also something that's very much on our radar. All this renewable energy needs to be stored somehow. Lithium is currently the best technology for energy storage; large-scale battery storage right now needs this. That could change in the future, but there's an acute need for lithium right now for battery storage as well as for electric vehicles.

There are two lithium projects in Nevada that have stirred up controversy. One is the Rhyolite Ridge mine. Rhyolite Ridge is in Esmeralda County, Nevada. It is the site of a plant, Tiehm's buckwheat, which is endemic to soils that contain lithium. So, this wildflower has the unfortunate distinction of being adapted to lithium-rich soils, and only exists on 10 acres of land at the site of this mine.

If this mine were built out, it would drive this species to extinction. The habitat for this plant would be at the bottom of an open pit mine. So, we have petitioned this species for ESA protection and filed numerous lawsuits to

9. Michael L. Sorey, *Geothermal Development and Changes in Surficial Features: Examples From the Western United States*, PROC. WORLD GEOTHERMAL CONG. (2000).

10. Press Release, Center for Biological Diversity, Emergency Endangered Species Protections Sought for Nevada's Dixie Valley Toad (Sept. 18, 2017), [https://www.biologicaldiversity.org/news/press\\_releases/2017/dixie-valley-toad-09-18-2017.php](https://www.biologicaldiversity.org/news/press_releases/2017/dixie-valley-toad-09-18-2017.php).

11. Subsequent to this event, the Center sued over the project's approval. Press Release, Center for Biological Diversity, Lawsuit Filed to Stop Geothermal Project From Destroying Nevada Springs (Dec. 16, 2021), <https://biologicaldiversity.org/w/news/press-releases/lawsuit-filed-to-stop-geothermal-project-from-destroying-nevada-springs-2021-12-16/>.

try to stop the construction of this mine.<sup>12</sup> There's another lithium mine up in northern Nevada at the Oregon border, Thacker Pass, which has engendered significant citizen opposition due to impacts to the traditional homelands of the Fort McDermitt Paiute tribe.

So, what to do? We need renewable energy desperately. There's no such thing as a free lunch, but the impacts can be minimized. First we need to focus on distributed resources. There is no reason we can't have a solar panel on every rooftop in this country. The only obstacle to that is the investor-owned utility (IOU) model of energy production, which is a whole other presentation. But the IOU is what prevents that reality.

The second and most important way we can minimize these impacts is through large-scale geospatial planning. This entails looking at the desert as a whole and figuring out where the best places are to deploy technologies that will minimize environmental impacts. The best example of this is a project in California called the Desert Renewable Energy Conservation Plan (DRECP). It basically took a look at the entire California desert, the 25-million-acre area, to determine the optimal places to site utility-scale solar development while minimizing environmental impacts.

In the very southeast corner of the California desert, development focus areas are places where solar energy development was allocated for intensive use through the DRECP. Meanwhile, areas were also allocated for conservation. So it was sort of a mitigation. We're going to develop these areas for utility-scale solar as sacrifice zones for energy, but in exchange we're going to save all this other land under permanent conservation.

Nobody was entirely happy with it. There's some really nice desert out there in those development-allocated areas, places people love dearly, but no one's sued over the DRECP. It's an example of something that probably struck the right balance. Because, if nothing else, the scene of renewable energy has been a scene of expensive litigation. Thus, the DRECP is generally seen as a success and as a model to be deployed in other places.

There's a number of ways that planning can minimize environmental impacts. In lithium production, there are sustainable technologies, such as direct lithium extraction (DLE). This uses physical, chemical, or electrical methods to extract lithium from lithium-rich groundwater brines. DLE takes out the lithium and reinjects the spent brine. The process is water-neutral and seen as a promising technology for large-scale lithium extraction.

On large-scale solar, we need geospatial planning. We need higher panel efficiencies on these projects. There's other best practices that can be deployed, like mowing. And with geothermal energy, there are many, many places to develop geothermal that don't have endangered species right next to them. Why don't we prioritize those areas?

Why do we need this? Because we need renewable energy desperately. We fight every day for renewable energy. Planning will minimize the environmental impacts. Minimizing those impacts will then avoid litigation and conflict, as we saw in California. That means more and faster renewable energy deployment. Projects we litigate get tied up for years and years. We don't have that luxury. We need planning in order to facilitate this transition as rapidly as possible.

**Margaret Spring:** I'm going to talk about one aspect of renewable energy and the potential conflict with biodiversity or, more likely, hopefully, solutions. As we've just heard, there's a possibility that this could work in the ocean. The potential for establishment of offshore renewable energy sources, especially wind, here in California is an active area of discussion.

The Monterey Bay Aquarium's mission is to inspire conservation of the ocean. The aquarium is a trusted science-based voice with wide public engagement. People turn to us for information. We have a lot of expertise, too, on sustainable fisheries and aquaculture, plastic pollution, ecosystem health, and of course our southern sea otter, which people love to watch on our webcam. We're also closely tracking offshore wind and the momentum toward protecting nature under recent Executive Orders, because we were also very engaged in the establishment of the network of MPAs here in California.

We and our science partner, the Monterey Bay Aquarium Research Institute, conduct research up and down the coast of California. We work with partners to translate information and help people be part of the decisionmaking process.

I know that this whole panel is trying to answer the question, but I'll restate it. How do you advance both the renewable goal—President Biden's target of employing tens of thousands of workers a day and having workers deploy 630 gigawatts of renewable offshore wind power by 2030—and protect nature and preserve biodiversity at a local and global scale? That's the big question.

One of the most beautiful areas off of our coast is our kelp forest. It's an amazing and vibrant place that we want to protect. That brings me to biodiversity and climate change. These are twin environmental crises. We have to act, or there will be implications for ecosystems, biodiversity, ocean functions, as well as people. We really do need to preserve biodiversity both at the global and local scale. That's why the aquarium, which is a rather place-based organization, is keeping an eye on this and trying to help.

Why is California a place to watch? Well, the state has ambitious and meaningful renewable goals. Political and public support for renewable energy here is strong. We even have mandates for us to reach 100% renewables by 2045,<sup>13</sup> which is a very aggressive target. We also have a strong commitment to ocean conservation, and lessons learned on

12. Press Release, Center for Biological Diversity, Lawsuit Seeks Emergency Protections for Rare Nevada Wildflower (Sept. 29, 2020), <https://biologicaldiversity.org/w/ne—ws/press-releases/lawsuit-seeks-emergency-protections-rare-nevada-wildflower-2020-09-29/>.

13. Act of Sept. 10, 2018, ch. 312, §1, 2018 Cal. Legis. Serv. (West).

the process and outreach that we've done in the past that can inform the offshore wind planning process.

The ocean has special challenges and a special role in the context of climate change. The resilient ocean plays an important role in managing carbon, and a healthy ocean is part of the climate solution. But we also have to make sure that we're mitigating emissions, so we're supportive of trying to figure out how to have offshore wind in our ocean environment as a solution.

Renewables come with impacts on ocean users, and pose risks to marine wildlife and the ecosystem, so there's some careful attention needed. The ocean constituency is quite different from the land-based constituency. It's a new area for engagement and scientific attention.

Climate change itself is changing the environment while decisionmakers are evaluating places for siting renewable energy. We see sharks moving northward, kelp declining, and sea temperatures rising. Baseline data and monitoring for change unrelated to the development and outside of management areas is going to be important.

There's also a third crisis, which is inequity. This is called out in the Executive Orders that we'll be talking about. It includes the legacy and harm of inequitable access to the outdoors, whether that's access to America's natural landscapes and seascapes or availability of such areas within certain communities, and especially affects Black, indigenous, and people of color, who disproportionately lack green space in their neighborhoods or access to nearby natural areas.

So, what's happening in California? Driven by the desire to fight climate change and biodiversity loss, California is engaged simultaneously in a number of processes, all of which are converging, which is creating a dynamic environment and a test case for these environmental initiatives. We're ahead of many states on biodiversity protection and renewables, but the ocean and coastal areas are new focus areas that we haven't spent a lot of time with. We're learning as we go.

There are a number of initiatives active in California. The first one to flag is the state's MPA network, one of our first marine biodiversity efforts in California. The establishment of this coastwide MPA network was completed in 2012, and the state is already coming up to a 10-year review. Sixteen percent of our state waters are already in the network of 124 MPAs. Nine percent are no take or highly protected. This process was state- and philanthropically funded, and spanned from 2004 to 2012. The MPA network focused on protections related to fishing issues, which was the major issue at the time. There have been some challenges with outreach around establishing protected areas, and issues with fishing communities that have led to many lessons learned on stakeholder processes and equity.

There are also two 30 x 30 initiatives landing in California at the same time. The first is for state waters. Gov. Gavin Newsom issued an Executive Order<sup>14</sup> to combat

the biodiversity and climate change crises in California using nature-based solutions. The goals of the federal "America the Beautiful" initiative and the state initiative are rather similar, and both require a lot of bottom-up work to happen.

The California Biodiversity Collaborative is elevating the role of natural and working lands, the pillar of the climate change strategy. There's a big equity aspect to this. On the marine side, the first step is the review of the existing MPAs in state waters, which is due in December 2022. Once that is complete, the state will begin pursuing 30 x 30 work on ocean and coastal waters.

Fishermen opposition to these initiatives is strong. We learned this from the Marine Life Protection Act (MLPA) experience. Equity for fishers is also a topic that they'll be exploring. The state is engaging in outreach around land areas, though there is a bit of a pause on the coastal areas. We are assessing the strategies between the two initiatives and looking at how the existing MLPA areas will meet the terms of the state Executive Order.

The federal "America the Beautiful" initiative is still in the process of gathering information. The focus now is to gather and put together an atlas of nature to establish a baseline and evaluate what's actually conserving what and how effective these strategies are. Led by NOAA, the effort builds upon the principles of honoring tribal sovereignty, creating jobs, collaboration, and inclusion. They're also asking the public what criteria should be used to identify places that need more conservation. It's a very bottom-up effort.

One thing to know is that California federal waters are already the site of many existing federal protections. So, you have the state-protected areas and then of course you've got national marine sanctuaries in federal waters, which have zoning requirements of their own. There's also a proposed sanctuary off of Morro Bay, which will be important later because that's the location of one of the potential siting areas for offshore wind. California has a long history of opposing any new offshore oil and gas development. Also, the military has reserved a lot of our offshore areas for security and training purposes. So, there's a very challenging siting mosaic here to consider.

While all this is occurring, we're asking, what actions will count toward protection? Who's going to drive this process, and how will the two federal and state processes work together? How will equity be assured? Also, how do we obtain the scientific information we need? At the same time, there is a very active federal offshore wind proposal process moving quickly off of California. The federal biodiversity effort is led by NOAA, but the offshore wind development process is led by the Bureau of Ocean Energy Management (BOEM). It's going to be interesting to see how this will come together. There's a lot of opportunity for doing this right, of course, so we look forward to seeing that happen.

California has aggressive renewables targets, as I mentioned. Offshore wind is seen as potentially answering some of those needs. There's a lot of information that has to be gathered before we know exactly how much. The

14. California Executive Department, Executive Order N-82-20 (Oct. 7, 2020).

political leadership seems to support moving forward on renewables, which is unusual and encouraging.

One thing to know about federal offshore wind in California is that we're having to work with a very new technology—the floating wind turbine. We've never used those. On the East Coast, they use different technology to generate offshore wind. So, we're in not only an area where we don't know everything we would love to know about the environment, but we also don't know exactly what these wind turbines will look like. We know they will be around 600 feet tall, which is pretty big. They'd be sited in waters that are very deep.

The breadth and the controls around them are still under discussion, as it's not really clear how large a footprint they will have. There's been interest for a long time in using these turbines to generate energy, and finally the federal government issued a request for public input on two "call areas" (potential siting areas identified for public comment in the request for information phase) off of the coast of California in federal waters—one off of Humboldt Bay and another off of Morro Bay. Now, they have refined and designated these "call areas" as "wind energy areas" and are in the environmental assessment stage.

People are mobilizing very quickly to advance research to inform the identification of least-conflict areas, or locations within these areas with the least amount of conflict with a potential offshore wind facility. This is a concept that has worked on land, as demonstrated in Patrick's discussion of the DRECP, in which they were looking for least-conflict areas to characterize. So, we're moving at double time. While the listening process is underway, the state is mobilizing and the federal government is working on this as well. There are a lot of data synthesis tools that have been developed over time by the federal government, so we're looking forward to seeing those help, too.

We also have two offshore wind demonstration projects in state waters moving very quickly through the State Lands Commission's decisionmaking process, with a decision due this fall. These projects are proposed to be sited in very high biodiversity areas and have generated a lot of concern. This process might be a prime example of what happens in the absence of comprehensive planning, and there is a potential collision with biodiversity.

The time line for renewables is quite aggressive, and as of yet there's no comprehensive planning in place. Decisionmakers are basically building the plane while flying it. There are multiple federal agencies that have to be involved. The state has to provide their own comments. At the same time, we have a planning process in place now, and outreach on the "America the Beautiful" initiative. I'm hoping that the science comes together to inform both processes.

There's a lot of user conflict and impact on the particular communities that have to be dealt with in terms of outreach. Already, this time line has shifted a bit, but right now, BOEM is suggesting that it might be issuing leases in the two federal offshore call areas (off Morro Bay and Humboldt Bay) as soon as the end of next year. Meanwhile, industry wants to keep the process moving in order to qualify for some time-limited tax credits, which only

go into effect if the project begins before 2025. So, there's movement in both directions. The outreach is going to take time. The science is going to take time, but there's a lot of need to have more renewables on uncertain deadlines.

With respect to California, some solutions are underway. A bill was just passed to require the California Energy Commission to evaluate and quantify the maximum feasible capacity and establish 2030 and 2045 planning goals for electricity generated by offshore wind in federal waters.<sup>15</sup> It also requires state agencies to develop a strategic plan for offshore wind development in state and federal waters by mid-2023. Again, we're leasing and planning simultaneously. It's quite interesting. But that bill also mandates least-conflict siting, which is really important.

To be successful, responsible offshore renewables will need to employ least-conflict siting. The engagement of stakeholders is also important. Monitoring needs to begin now and we need federal support for that. We don't know a lot about potential impacts. We don't know what the technology will look like, but we also don't know everything we would want to know about the migratory patterns of marine life and the changes that are happening in the ocean already because of climate change.

We've got all sorts of important migratory species here that are converging and passing through the areas under evaluation. Some of them are endangered species. There is strong concern about impacts on those species. Of course, birds are a major issue for lots of people, particularly with wind turbines. That's an area that deserves greater discussion.

The Aquarium joined a group of organizations in filing comments to BOEM to outline, at least with respect to one area, how much information we could give them to help them make these decisions and point out areas of biodiversity.<sup>16</sup> This call for information is certainly going to help. Of course, making sure people are working together toward a common goal is going to be important.

What will it take to avoid conflict between biodiversity and offshore renewables? As a former government employee, I view government leadership, coordination, and oversight as critical to this goal. There's a lot of work to be done to make sure engagement is strong between the state and federal and tribal governments. Science and monitoring are crucial, especially with climate change. We have to build trust and relationships through transparency. We made a lot of progress, but we certainly can do better.

A comprehensive planning process is absolutely essential. We need to make sure that we're looking at the whole picture and not just making single decisions that somehow don't add up to anything. There are some good examples

15. A.B. 525, Stats. 2021, ch. 231, [https://leginfo.ca.gov/faces/bill-NavClient.xhtml?bill\\_id=202120220AB525](https://leginfo.ca.gov/faces/bill-NavClient.xhtml?bill_id=202120220AB525).

16. Letter from Pamela Flick, California Program Director, Defenders of Wildlife et al., to Jean Thurston-Keller, California Intergovernmental Renewable Energy Task Force Coordinator, BOEM Re: Commercial Leasing for Wind Power Development on the Outer Continental Shelf (OCS) Offshore Morro Bay, California, East and West Extensions—Call for Information and Nominations (Call or Notice) [Docket No. BOEM-2021-0044] (Sept. 13, 2021), <https://www.regulations.gov/comment/BOEM-2021-0044-0060>.

of this. One was the San Joaquin Valley least-conflict solar analysis,<sup>17</sup> which was a collaborative and orderly planning process that identified renewable energy development areas. This process has a goal of bringing multiple and diverse parties together to identify least-conflict lands within six months and seems to be an interesting model.<sup>18</sup>

The ecosystem processes have got to be considered broadly. The process can be tied up if you don't have a plan that's looking far enough ahead at potential impacts. In fisheries and in other areas, we've actually had to have multiple-year programmatic approaches that incorporate ecosystemwide information and evaluation of potential impacts over time, as well as plan for future contingencies. I think there are some models for that in both fisheries and offshore oil and gas. While not perfect, the government has been trying to have an ecosystem approach to decisionmaking.

At the local level, you can discuss scientific information and data with people who have identified a specific need for use or protection in an area—for example, the constituencies of national marine sanctuaries, which are multiple-use areas. The national marine sanctuary here in Monterey was able to convene such a discussion, and brought fishermen together to identify ways of changing the boundaries of some of the MPAs. It seemed to work quite well. Of course, science, research, and monitoring are paramount. I can't say that enough.

The fact that we can have a decadal review of an MPA network is incredibly important to building confidence in the management process. Without the monitoring that was put in place, we would have been unable to do a review. So, that's a whirlwind trip through what's happening in California.

**Priya Gandbhir:** Good afternoon from Boston. I'm a staff attorney at CLF. I work entirely in CLF's Clean Energy and Climate Change Program. My work involves advocacy before the state Department of Public Utilities, as well as advocating before the Independent System Operator-New England, which is the entity that runs New England's electric grid.

CLF is a member-supported environmental advocacy organization. We have a strong history of involvement in issues relating to utility regulation. We also use law, policy, and market mechanisms to promote a healthy, sustainable, and equitable New England for all. In addition to clean energy and climate change, our work addresses ocean conservation, clean air and water, environmental justice, and healthy and resilient communities. Depending on your perspective, we're more of a small- to medium-sized organization. We work very closely with other local groups as well as some national groups in accomplishing these goals.

Here in New England, we are already starting to see the impacts of climate change on our communities and on

our natural resources. Examples of this would include the more frequent and severe storms we're experiencing. These storms cause property damage. They cause economic loss. They threaten people's livelihoods. New England has a lot of coastal communities, including Boston as well as Cape Cod. Sea-level rise threatens these communities, and high-heat days impact public health.

There's definitely been a link identified between the communities that are most vulnerable to climate change and those that were hit the hardest by the COVID-19 pandemic. The pollution that is caused by emissions from greenhouse gases also contributes to those health consequences. In addition, changes in weather impact local fishers who depend on a consistent harvest for their livelihoods.

The Biden Administration's 30 x 30 conservation goals present an opportunity to balance conservation of natural resources with our need to move away from fossil fuel resources to clean, sustainable energy options. Although New England is obviously smaller than some states out west where they have larger swaths of land, 30 x 30 conservation goals are definitely relevant to New England in terms of offshore wind. I'll talk about that later.

I'm going to discuss these issues from a local perspective here in New England—and by local, I mean the municipal level—and talk about how we balance the development of renewable energy infrastructure with protecting our vital resources. I will also discuss CLF's work to encourage offshore wind development while protecting our ocean and coastal resources as well as the creatures that inhabit them and the people who depend on these resources for their livelihoods.

Here's a quick overview of municipal permitting. The primary way in which municipalities regulate land use is through planning and zoning bylaws, or ordinances depending on the city. Zoning bylaws ensure that development occurs in a strategic manner. Basically, certain areas are designated for particular land uses, whether that be residential, commercial, industrial, or agricultural. Some spaces are also designated to remain open green conservation space.

Most places have municipal planning and zoning laws. In Massachusetts, we actually have a law protecting wetlands resources. That's the commonwealth's Wetlands Protection Act.<sup>19</sup> That is administered and enforced by municipal conservation commissions for the most part. In a few communities where there isn't a municipal conservation commission, that job is undertaken by the Massachusetts Department of Environmental Protection.

In Massachusetts, it's very important to us to protect our wetland resources. They're vital to climate resilience in terms of their function of storing and providing an outlet for stormwater and preventing or mitigating flooding. As climate change continues to increase, it becomes an increasingly vital resource that we have here.

As Margaret mentioned, it's important to protect these resources for equity considerations. A lot of communities in

17. San Joaquin Valley Gateway, *San Joaquin Valley Least Conflict Solar Analysis—A Path Forward*, <https://sjvp.databasin.org/galleries/3b9ed1d995424b1e94fa4ae3fb2502a6/> (last visited Dec. 20, 2021).

18. *Id.*

19. MASS. GEN. LAWS c. 131, §40 (1972).

Massachusetts are lacking in access to green spaces. Most often, those communities that are lacking in that access are communities of color and/or lower-income communities with language barriers.

Here in Massachusetts, we've actually created the designation of environmental justice communities. Those are based on certain criteria, which include income, English language proficiency, and minority status. We're working hard to make sure that our most vulnerable communities who are most at risk of the detrimental impacts of climate change are as protected as possible.

Some communities in the state have zoning overlays for siting of solar energy. As I mentioned, zoning is a tool that's used to designate certain areas for certain types of land uses. The zoning overlay for siting of solar energy sets standards for facilitating solar development while protecting other considerations like conservation of natural resources.

Massachusetts law prevents municipalities from unreasonably regulating solar energy systems—unless regulation is needed to protect public health, safety, or welfare. But Massachusetts residents, obviously for a very good reason, are concerned about the impacts of solar development on our natural resources. We do have a smaller area to work with, so it's important to protect it as much as possible because we don't have a lot left.

We have a legal mandate of achieving net-zero greenhouse gas emissions by 2050.<sup>20</sup> So, it's vital that we figure out a way to balance growing our renewable energy infrastructure with protecting our natural lands.

Solar energy is going to be a major component of meeting our legal mandate to achieve net-zero greenhouse gas emissions. If we use responsible siting measures—such as rooftops or parking garages to site solar instead of clearcutting forests—we'll come that much closer to being able to achieve our goals without having to unnecessarily jeopardize our natural resources.

I'll transition over from solar resources to offshore wind. The right whale is a critically endangered species that has a home in New England's oceans. So, in addition to protecting our forests and our green space, New Englanders are concerned about protecting our oceanic resources.

Our oceans are home to many vital species. Protecting this habitat is a critical part of CLF's work. Our oceans are also a very important part of our local economy. We have a lot of people who are dependent on New England's natural resources for their livelihoods. There are generations of local fishers who depend on the well-being of our marine systems for their livelihoods. That means that we need to work in a sustainable way with our oceans.

Ocean resources are threatened by climate change. A lot of species are very sensitive to the temperature and chemical composition of the ocean. Climate change impacts both of those. They're also very sensitive to water pollution and overfishing, as well as other hazards. CLF has a

history of working on protecting our ocean resources and continues to do so.

As previously noted, Massachusetts has a legal mandate to achieve net-zero greenhouse gas emissions by 2050. Other New England states have established similar policies or mandates. In order to meet these requirements, development of offshore wind needs to happen—and soon. CLF has been working to promote development of offshore wind using law, policy, and market mechanisms. At the same time, we're working to protect our vital marine resources such as the endangered right whale.

In 2019, we were able to reach an agreement with the local offshore wind developer Vineyard Wind.<sup>21</sup> This agreement protects the endangered right whale by limiting where and when wind turbines can be constructed offshore from New England. These limitations on where wind turbines can be constructed will serve to reduce interference with whale migration, their feeding patterns, and their reproduction, while at the same time allowing Vineyard Wind to move forward. This project will add ultimately 800 megawatts of electricity to New England, which is enough to power 400,000 homes.

We're also supportive of the Biden Administration's 30 x 30 conservation goals. CLF has long fought to protect our coastal land and offshore resources by having certain areas designated as marine monuments. Unfortunately, the Trump Administration reversed some of those protections, but we hope to have those reinstated and to have those areas be counted toward the 30 x 30 conservation goals. We're in favor of areas where broad conservation goals, including protection of biodiversity, count toward those goals, and want to make sure that we're preserving quality lands or resources toward those goals.

That summarizes my perspective, and our work on offshore wind and how municipal issues are dealt with here in terms of growing our renewable energy and balancing that with protecting our resources.

**James McElfish:** A question for all the panelists: Is there some role for renewable energy projects that will result in a take of endangered species? Are there circumstances under which there's predicted take that you're willing to support? How do you make those trade offs? And in cases where habitat conservation plans (HCPs) do apply, do you see a role for HCPs in the renewable energy siting process?

**Patrick Donnelly:** With regard to the desert tortoise and with regard to the greater sage-grouse in northern Nevada, there's proposed development in habitat areas. There's really no compelling reason to site these projects in tortoise or sage-grouse habitats. There are significant areas of land that do not have desert tortoises on it and do not have any endangered species. It doesn't mean there's not biodiversity there, but that's a pill you could swallow.

20. An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy, 2021 Mass. Acts 8.

21. Press Release, Natural Resources Defense Council, Vineyard Wind, Conservation Groups Reach Historic Agreement to Protect Right Whales (Jan. 23, 2019), <https://www.nrdc.org/media/2019/190123>.

Whereas, with the tortoise, frankly in three decades of HCPs, I've seen a catastrophic decline in tortoise populations and habitat loss. So, I would say the HCPs are not working as intended for the desert tortoise. Another factor we haven't even discussed is degraded lands. The U.S. Environmental Protection Agency's RE-Powering America's Land initiative found that there were literally one million acres in Nevada of degraded lands, abandoned mine lands, and so on, where you could site these projects.<sup>22</sup> Those lands definitely do not have endangered species on them. I think there's so many possibilities out there for siting that we don't need to accept significant impacts to endangered species anymore.

**Margaret Spring:** We're very early into this process, but I agree with Patrick's comments that least-conflict siting is a process that's been endorsed by the state. We would look to the state and the federal government to assess the impacts to endangered species and certainly we'll bring that to the table. For projects in the ocean, we're going to lack complete knowledge or have imperfect knowledge and will need to take precautionary approaches, and of course we're seeking mitigation of impacts, as well as learning and adaptation. There is a willingness to take a positive approach, just as Patrick has said.

But the protection of endangered species is the responsibility of the federal government. The agencies have a heavy burden to carry to show a take can be allowed under law, particularly if the species is very, very endangered. We certainly are keeping our eye on threatened sea otters, which are already subject to takes in the environment from a range of sources, and this is hampering recovery. It's something that we have to take very seriously.

**Priya Gandbhir:** I would note that it's a little bit harder here. I would certainly love to be able to take the position of being very aggressive. But here in New England where we have a lot less space, it does become more of a tight-rope scenario where we are balancing the need to quickly and aggressively grow our renewable energy infrastructure and our limited space, but with careful planning. There's no need to be reckless or unnecessarily jeopardize our vital resources.

**James McElfish:** I appreciate your perspectives. I do more work on the terrestrial side and some places where there are a great many listed species. I wonder, Patrick, is your answer at all different in places like parts of southern California not in the desert environment, or in the East? Maybe we can always avoid takes if we work hard enough.

**Patrick Donnelly:** I come from a pretty singular geographic perspective, being in the Mojave Desert and being responsible in my job for Nevada in particular. The tortoise is declining for a whole variety of reasons. Certainly,

the concept of the HCP is not inherently flawed. It has been successful in many places around the western United States. I think the Mojave Desert is seen as a singular resource for solar. It has the highest solar installation rates of any place in the country.

Gov. Arnold Schwarzenegger famously said at the opening of that Ivanpah facility I discussed earlier, "If you can't put a solar project in the Mojave Desert, I don't know where the hell you can put it."<sup>23</sup> In many ways, that represented an early perspective here that the desert is just empty anyway. You know, who cares? It's just a desert. I think the ensuing decade-and-a-half of controversy has shown that deserts are full of life and in some cases contain very vulnerable species. The Mojave Desert has a role to play in the renewable energy future, but we should prioritize proper siting and avoiding harms.

**James McElfish:** A question about National Environmental Policy Act (NEPA)<sup>24</sup> review. There have been some stories in the trade press recently about President Biden's and other renewable energy agendas running into NEPA, and wondering if renewable energy proponents will end up hating NEPA just as much as the fossil fuel industry has over time. What is the panel's perspective? How, if at all, is NEPA an obstacle or opportunity with respect to these objectives in the areas where you work?

**Margaret Spring:** I think of NEPA as a tool that can be used to help make trade off decisions around alternatives if the alternatives are teed up with the right information. I talked about a programmatic approach earlier. At NOAA, we had to make decisions on a timely basis but also meet NEPA time lines and stakeholder input and evaluations. The programmatic approach was one way of framing that conversation where everything is put in a box and NEPA helped summarize where you were.

I'm not saying it's simple, because you have consistency review and other requirements to meet.<sup>25</sup> But there was an attempt to rationalize the use of this tool because it is designed to help you do exactly what we're talking about in this discussion, which is figure out where the impact might be and what our options are. That doesn't mean it can't be frustrating. I do think that the federal agencies and the state agencies have the opportunity to come together to take a joint programmatic approach to siting and permitting. Over time, that serves as a format for adaptive management as new information comes to light.

There may be some other examples in other industries. NEPA reviews have been quite challenging. However, I think there have been some efforts to make it work better to support decisionmaking. In fact, in every administration, there's been an effort to try to figure out how to do it better.

22. U.S. Environmental Protection Agency, *RE-Powering America's Land*, <https://www.epa.gov/re-powering> (last visited Dec. 20, 2021).

23. Todd Woody, *It's Green Against Green In Mojave Desert Solar Battle*, YALE ENV'T 360 (Feb. 1, 2010), [https://e360.yale.edu/features/its\\_green\\_against\\_green\\_in\\_mojave\\_desert\\_solar\\_battle](https://e360.yale.edu/features/its_green_against_green_in_mojave_desert_solar_battle).

24. 42 U.S.C. §§4321-4370h, ELR STAT. NEPA §§2-209.

25. 16 U.S.C. §1456.

**James McElfish:** I'll give the next question to Priya. Patrick mentioned IOUs as an obstacle to distributed energy as an approach. Is that something you also see in New England or is the situation different in the area where you work?

**Priya Gandbhir:** It's definitely an issue here. The hope is that our climate mandate of achieving net-zero greenhouse gas emissions by mid-century will be a factor in stimulating change in that regard. There's an open docket at the Massachusetts Department of Public Utilities, which is an investigation into the future of gas that was requested by the Attorney General's Office. I know California has a similar proceeding and I believe New York does as well. So basically, working toward figuring out what the future of the gas industry here is going to look like.

There's once again a need for balance. There are a lot of people in New England who depend on that industry for jobs and their economic well-being. We have to make sure that people are able to find new opportunities as we move away from consumption of fossil fuel resources. An IOU is definitely a barrier to achievement of our climate goals, but we're working through it.

**James McElfish:** Patrick, do you have anything to add or observations about the distributed energy point?

**Patrick Donnelly:** California has actually done fairly well in promoting distributed generation, although a major issue is that distributed generation does not count toward the state's renewable portfolio standard, which is kind of a disincentive in and of itself for institutional support for the policy.

But in Nevada, our state utility, NV Energy, which is a Warren Buffett Berkshire Hathaway company, has fought tooth and nail against rooftop solar, including convincing the public utilities commission in 2015 to end all state subsidies and state requirements for rooftop solar, effectively killing the program. It was restored by the legislature two years later. The legislature has since taken some action to promote renewables.

But NV Energy, and to be perfectly honest especially through their political influence and campaign donations, has retained the favor of politicians. Politicians have made many decisions to incentivize large-scale development and disincentivize community solar and rooftop, from our perspective largely at the behest of the utility. Because utilities don't make money off solar panels on your roof, they do not have an incentive to help you put solar panels on your roof. We've seen that play out in a pretty significant fashion here.

**James McElfish:** There is a question dealing with the flipside of the difficulty of siting utility, commercial-scale renewables. In parts of the Northeast and in other parts of the country, the siting is primarily up to local governments—counties, townships, cities, or the like. Do you see any way of dealing with renewable energy in places where it's an

intensively local regulatory scheme, as opposed to a state siting board or other kinds of approaches?

**Priya Gandbhir:** Fortunately, a lot of New Englanders are very concerned about the impacts of climate change. Growing our renewable energy infrastructure is supported by New England residents, and, at the municipal level, by the people who are making decisions. I guess a lot of the area where there'll be controversy or difficulty is in the context of NIMBYism. People want to preserve and protect their natural resources, which is understandable.

But typically, the people who are able to attend municipal hearings are retired white people who have time in the evenings. Whereas people in our environmental justice communities are often working two jobs, or have to send their babysitter home, or have a language barrier to participating in a public process. There are a couple of proceedings at the state level here that would help open up the public process, and make it more transparent and more accessible from the state level. We're also trying to work with communities and different organizations that work with municipal boards and agencies to help make the municipal process more open and transparent as well.

**James McElfish:** A question about the role of the military. A number of you mentioned least-conflict siting and the amount of air space that's used for training purposes. I know that offshore wind in the East has seen a lot of issues in terms of naval radar installations and the like. And in the desert of course there's a lot of issues as well. So, is there a role for the military to promote the conservation side or to deal with the renewable energy issue in some meaningful way?

**Margaret Spring:** The U.S. Department of Defense (DOD) wields a lot of power in siting discussions. Always has, probably always will. We'll have to see how this multi-agency presidential priority of climate change and DOD's control of the dialogue will mesh. In general, security issues are usually the winning card in these negotiations. We've had this come up in the context of some efforts to create protected areas. This happens a lot.

Many feel strongly that DOD should not be the sole decider in siting, nor DOI. In fact, I think there should be a balanced portfolio of information that comes to bear, and trade offs should be addressed. Is that realistic? It might be overly optimistic. Maybe Patrick can comment on the desert experience. But I don't underestimate the concern about defense operations in our waters.

**Patrick Donnelly:** DOD owns or manages a large amount of desert in both California and Nevada. They've generally been extremely resistant to renewable energy being built even on the border of DOD facilities. They certainly don't want it on their land because they claim it interferes with aerial training and operations. So, I don't see DOD as having much of a role in the deserts. Perhaps, they could be less intransigent in opposing it outside of their facilities. But that's probably the only role I see them playing.