Uniting action on climate and biodiversity

How the green energy transition can address both crises

Ørsted

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A healthy environment, including its climate and biodiversity, is central to everyone’s wellbeing. We must go beyond business as usual and elevate nature as an important solution to climate change.

Razan Al Mubarak
UN Climate Change High-Level Champion (2023)

Thinking outside of the windfarm

In 2015, the ground-breaking Paris Agreement set out to protect humanity from the existential threat of runaway climate change. Great advances have been made, not least in the energy transition. But further progress through the acceleration of meaningful climate action cannot come fast enough.

Meanwhile, at the end of 2022, the Kunming-Montreal Agreement set out to secure the future of our planetary life-support system: biodiversity. It sets clear goals designed to halt the destruction of our planet's ecosystems by 2030.

Two crises, two global agreements and two huge mountains to climb by 2030 if we're to stay on track to deliver on our goals.

There are also two foundational solutions, respective to each agenda: unprecedented expansion of renewable energy infrastructure; and unprecedented expansion of areas protected for nature.

Here lies potential conflict – a fight for space. Yet biodiversity and climate are not two separate issues. They are two sides of the same coin, deeply interconnected. And so, we have a choice to make between opposition, or opportunity. Do we want action on biodiversity and the energy transition to be mutually supportive, or limiting?

The science is clear: we cannot afford to limit progress on climate or nature. And we cannot solve one crisis without solving the other. If we continue on our current path, humanity and the planet will suffer greatly. It's time to radically shift how we do things.

Ørsted has long been at the forefront of the green energy transition and sustainable ocean stewardship, and we know that integration of action on climate and biodiversity is the next frontier – it's time to bring our sector's proven aptitude for innovation to that end. If done right, the large-scale expansion of renewable energy presents an opportunity for governments to deliver on both crises together, for the societies they serve.

We in the renewable energy industry cannot address all threats to biodiversity – and there are many. From pollution to over-exploitation of natural resources, the key drivers of biodiversity loss are all increasingly compounded by climate change – itself one of the largest direct drivers of biodiversity loss. And so, the renewable energy industry can and must do our part by directly addressing climate change, and by taking great care to minimise risk of negative impact as we deliver the infrastructure that achieves that.

Today, we're going even further. Ørsted is working hard to deliver net-positive biodiversity impact from all new renewable energy projects we commission from 2030, taking action both within and outside the footprint of our renewable energy projects. But we in Ørsted alone can't realise the full and invaluable potential here. Through collective action, we can achieve much more – and faster. That's why we're calling for policymakers to take action to unlock large-scale investment in biodiversity-positive renewable energy.

This is not only the right thing to do for people and the nature we depend upon – it also makes practical sense. Integrating biodiversity measures into renewable energy deployment will be key to ensuring a mandate for the pace and scale of new infrastructure needed to meet net zero carbon emissions.

The crises of biodiversity and climate are a threat to humanity on a planetary scale. Scientists have sounded the alarm. We've entered the planet's sixth mass extinction event – the largest loss of life since the time of the dinosaurs – while the narrative on climate has recently shifted to 'global boiling' as we watch the ramp-up of impacts play out in real time.

Without rapid and vast scale-up of renewable energy, we're set to significantly overshoot 1.5°C of warming – a threshold beyond which millions more people will be at risk of life-threatening heat waves, and the ecosystems our economies and well-being depend upon may be irreversibly lost.

It gives me huge hope to see the energy and ambition at play to forge a new path. But we have a huge amount to achieve in less than seven years to meet our global goals. We must grasp all opportunity for synergies and common solutions, and collectively move from talk of ambition to transformational implementation – now.

Renewable energy and nature protection are the two most powerful tools we have for addressing the climate crisis. If we consider them together, we have a highly potent tool.

Mads Nipper
CEO, Ørsted

Executive summary

There is a new and necessary north star for renewable energy: to be a force for good on both climate and biodiversity. Ørsted is doing our part to deliver on this through our net-positive biodiversity ambition. Only if others act with us can we together deliver what is needed for people and planet.

The primary driver of biodiversity loss is the global food system. It and other human activities are contributing to the devasting loss seen today through direct exploitation of species and habitats, as well as pollution. Climate change is a further large – and growing – cause. Importantly, on top of its direct impact, the changing climate also worsens the other threats to biodiversity.[2]

The case to resign fossil fuels to history and transition to a world run on green energy has been made. Global commitments are clear and represent an unprecedented expansion of new renewable energy infrastructure. The International Energy Agency (IEA) expects that, globally, offshore wind energy alone will need to exceed 2000 GW (compared to around 60 GW today) for a chance of avoiding the worst impacts of runaway climate change. To help meet this, 380 GW of installed capacity is being targeted for 2030 by the Global Offshore Wind Alliance (GOWA).[3]

The case for a step change in nature protection, and the interplay between climate and biodiversity[4], is becoming equally impossible to ignore. As a society, we must respond with a new vision for how we deliver renewable energy.

To do this, renewable energy deployment needs to move beyond reducing environmental impact, and towards direct and active enhancement of biodiversity. In short, leaving nature in better shape than before we started, both within our asset footprint and beyond that in support of wider ecosystem health. This is fundamental to securing a mandate for building the scale of renewable energy needed for people and planet.

In 2021, building on our industry-leading decarbonisation journey, Ørsted set the ambition for all new renewable energy projects we commission from 2030 to deliver net-positive biodiversity impact (NPI). This is core to our business strategy, and we've made meaningful progress already:

Taking action while working out the details

- Integrating our biodiversity ambition into the way we work across our business portfolio.
- Investing in pilot projects to test and develop the best measures to deliver net positive biodiversity impact at scale, both inside and outside of our renewable energy projects. This includes continued investment in research and development to ensure we're using the best methods and technologies to understand and minimise negative impact.
- Engaging with local communities and partnering with experts to ensure we implement the right solutions in the right places.

Making this scalable

- Developing and testing an impact measurement framework that can be applied with respect to NPI across the breadth of our renewable energy assets, and which is aligned to the scientific recommendations available to-date. Our intention is that this can be refined to provide a valuable industry standard for robust positive action on biodiversity.
- Raising finance to further invest in this work offshore by becoming the world's first energy company to issue a blue bond.
- Establishing partnerships with leading academic institutions and environmental NGOs to co-create solutions and advocate for action, including supporting development of science-based targets for nature.

Prioritising sustainable outcomes for people and planet

- Reducing our demand for new metals and minerals with a large focus on resource circularity such as component recycling, as well as driving action on responsible mining.
- Prioritising positive social impact amongst local communities, including working closely with the fishing industry to find sustainable coexistence models.
- Exploring holistic solutions that can improve water quality and availability, such as aquifer replenishment.

But we don't have all the answers, nor all the levers for change. We need a paradigm shift in how all the actors involved come together to solve these two challenges of our time.

1. Our global food system is the primary driver of biodiversity loss (unep.org). 2. Why are we losing biodiversity | WWF (panda.org).
3. Nine New Countries Sign Up for Global Offshore Wind Alliance at COP27 (IRENA). 4. IPBES and IPCC report on climate and biodiversity, 2020.

Our Call to Action

1 The entire energy industry must act now – and in line with science

Science-based decarbonisation is the foundation of credible action on nature. Bold and measurable action on biodiversity must come next, and industry collaboration is needed to achieve the best outcomes.

2 Environmental NGOs and the energy sector must work together

Joining forces on research and development, restoration projects or advocating together for a more integrated policy approach, combining our shared experience, and demonstrating that we are united on a common goal will be a powerful accelerator of success for climate and biodiversity.

3 Policymakers must enable and incentivise a biodiversity-positive energy transition

The starting point must be recognising that nature protection and climate action are intrinsically linked, and so policy approaches must reflect and capitalise on that synergy. While the precise policy response will need to be tailored to local contexts, two overarching principles are necessary to unlock scalable action: aligning measures for implementation of climate and biodiversity goals, and incentivising investment in biodiversity-positive renewable energy, including robust scientific standards that provide the social license for the scale of build-out needed.

This means moving away from a race to the bottom on price when delivering already cost-competitive renewable technologies, and ensuring action on climate and biodiversity remains a priority in times of inflationary pressure. Instead, we must create a race to the top for the best long-term, sustainable societal value we can secure from the energy transition.

This paper sets out why it is essential that we consider biodiversity in the build-out of renewable energy, and what steps we believe are needed to ensure we get this right.

The next frontier: tackling the twin crises

The climate and biodiversity crises are both urgent and deeply interconnected. If done right, the renewable energy transition offers unique potential to be a force for good on both.

Climate change and biodiversity loss are the global challenges of our time. How – and how fast – we address them has profound implications for humanity.

Climate change is a large and growing driver of unprecedented biodiversity loss and ecosystem degradation. This undermines nature's ability to mitigate climate change and support adaptation – something world leaders are depending on to help meet urgent climate goals.

If done right, the energy transition can be a force for good on biodiversity and climate. Shifting to renewable energy will play a vital role in mitigating climate change, which will in turn help halt biodiversity loss. By integrating action on biodiversity into the energy transition, we can also support vital restoration and protection goals. On the other side of this opportunity is the risk of failing on both fronts. To date, climate change and biodiversity loss have largely been approached in silos. Nature protection and new green energy infrastructure are at times seen as conflicting agendas. If we don't address this, the energy transition faces a growing implementation challenge and fossil-fuel driven climate change will continue to drive increasing biodiversity loss.

By 2030 – only seven years away – the world must be well on its way to net zero carbon emissions. In the same timeframe, we need to halt biodiversity loss and be moving to restore the ecosystems upon which life depends. Meeting these goals requires a bold new approach of combined efforts and integrated solutions to solve these deeply interrelated crises.

Biodiversity: our planet's life-support system

Biodiversity refers to the biological diversity of life on earth in all its forms – from microscopic fungi to whales. It is a core element of functional ecosystems and central to sustaining life as we know it.

This life-support system is under extreme threat. The extinction rates of species are unprecedented and accelerating – wildlife populations have shrunk by 69 % since 1970[5] and one million species are under threat today.[6] This is primarily driven by the global food system[7], which contributes to each of the top five drivers: changing use of sea and land, direct exploitation of organisms, climate change, pollution, and invasive non-native species.[8]

Such loss of biodiversity risks causing the collapse of the natural ecosystems that humanity relies on to thrive, and to survive. As the diversity of animals, plants and microorganisms diminishes, we lose the ecosystems that provide us with the air we breathe, the food we eat, medicines and more.

Biodiversity is also fundamental to economic prosperity, as set out in the UK Government commissioned Dasgupta review The Economics of Biodiversity.[9] Half the world's total GDP is moderately or highly dependent on nature, and marine and coastal biodiversity alone provides over three billion people with their livelihoods.

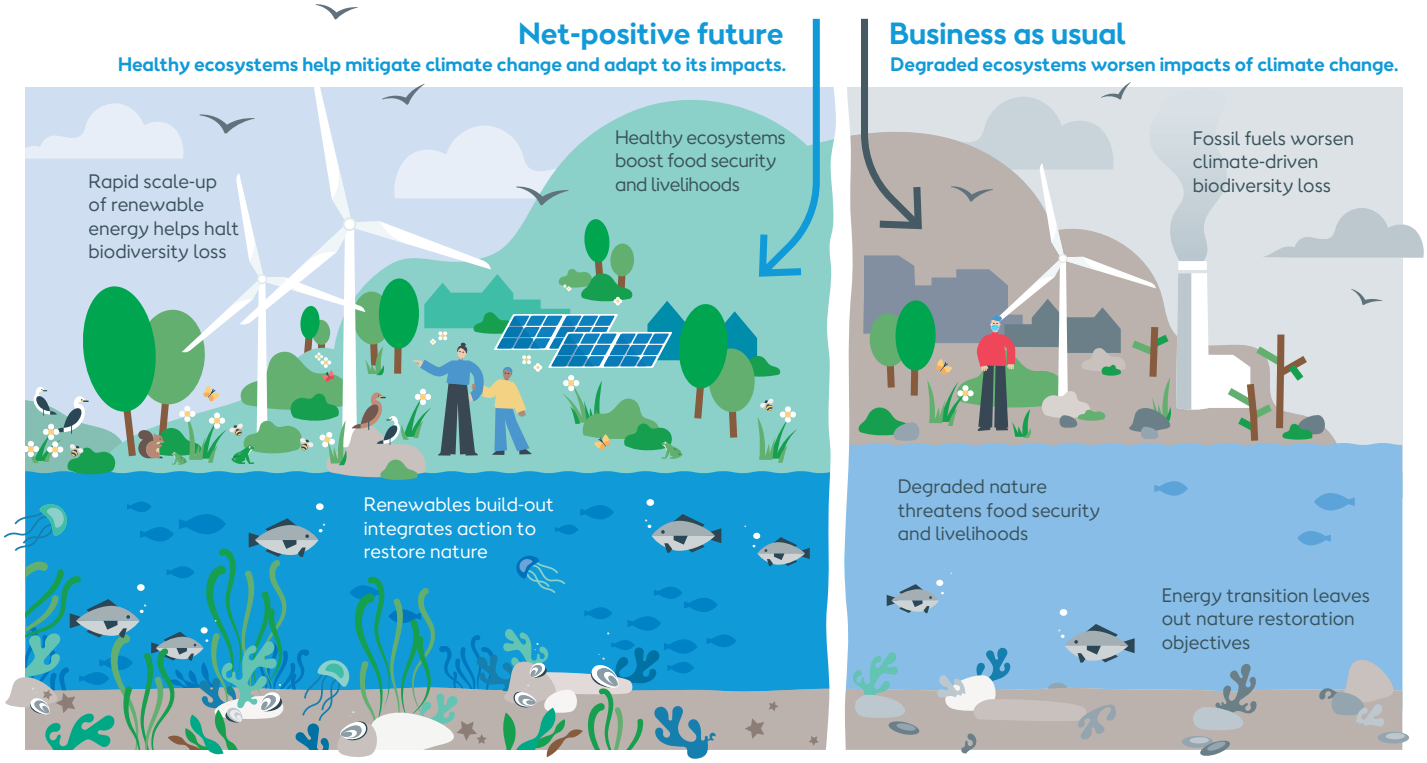
Connected crises need a connected response

While there are multiple drivers of biodiversity loss which the renewable energy sector cannot address, it plays a vital role in addressing climate change. Climate change is not only a direct driver itself, it also worsens each of the others. As climate change progresses, so too will the scale of its impact on nature.

The risk of species extinction increases with every degree of warming. According to the IPCC, the difference between 1.5 and 3°C of warming equates to the difference between 4 % and 41 % of mammals losing half of their habitat. It is worse for other organisms; even at 1.5°C, between 70-90 % of coral reefs are projected to vanish.[10]

> Climate change is a primary driver of biodiversity loss. And climate change depends on biodiversity as part of the solution. So, clearly the two are linked and cannot be separated.
>
> ***Elizabeth Mrema,*** *Executive Secretary, United Nations Convention on Biological Diversity (2022)*

5. Six charts that show the state of global biodiversity loss (World Economic Forum). 6. Nature's Dangerous Decline (UNSDG report).



In turn, biodiversity loss and ecosystem degradation are diminishing the planet's natural capacity for climate regulation, mitigation, and adaptation.

Like renewable energy, biodiversity can play a critical role in addressing the climate crisis. Trees in tropical forests are well known for their role in capturing carbon, as are marine and coastal habitats such as seagrass and saltmarsh. Higher biodiversity overall is shown to lead to higher rates of carbon stored in soil and marine sediment. The more biologically-diverse an ecosystem, the greater the number of ecosystem services it provides, and the more resilient it is to stress. This is critical for climate-vulnerable communities that depend on this natural capital.

The UN considers biodiversity the world's strongest natural defence against climate change.[11] Nature-based climate solutions – actions that protect or restore ecosystems in support of climate goals – hold the potential to deliver an estimated one third of the mitigation needed by 2030 and beyond.[12] In short, it is unlikely that we will reach net zero without halting and reversing the degradation of nature.

The two crises can be seen in a negative feedback cycle where each one exacerbates the other. We can return this to a positive cycle if we ensure that solutions to one crisis also support progress with the other. Limiting and removing atmospheric carbon emissions is necessary to halt biodiversity loss and support sustainable restoration. Restoring ecosystems will in turn help mitigate atmospheric carbon emissions and support adaptation, from coastal resilience from habitat such as salt marshes, to carbon sequestration in prairie ecosystems.

The crucial role of our ocean

Our ocean is known as the lungs of the planet. Covering 71 % of the earth's surface, it provides more than half the oxygen we breathe, and provides food and livelihoods for billions of people worldwide. But our ocean faces major threats – from climate change to habitat destruction and pollution – making ocean health a key priority.

Ocean health is also fundamental in the fight against climate change.[13] Ocean currents play a key role in regulating weather patterns by absorbing heat and distributing it across the planet. Coastal ecosystems offer important protection from storm surges and flooding during increasingly common extreme weather events. Ocean and coastal habitats such as seagrass and mangroves can sequester carbon up to four times the rate of terrestrial forests.[14] And we are relying on the ocean to host at least 380 GW of new offshore wind by 2030, rising to 2000 GW by 2050.

The ocean is often referred to as our largest carbon sink, and since the 1980s has absorbed up to 30 % of CO_2 emissions and over 90 % of excess heat.[15] This has come at a huge cost. It has led to a major crisis in ocean heating and acidification, which, alongside over-exploitation and pollution, is causing the unprecedented loss of marine and coastal biodiversity. Ocean heating also leads to sea level rise.

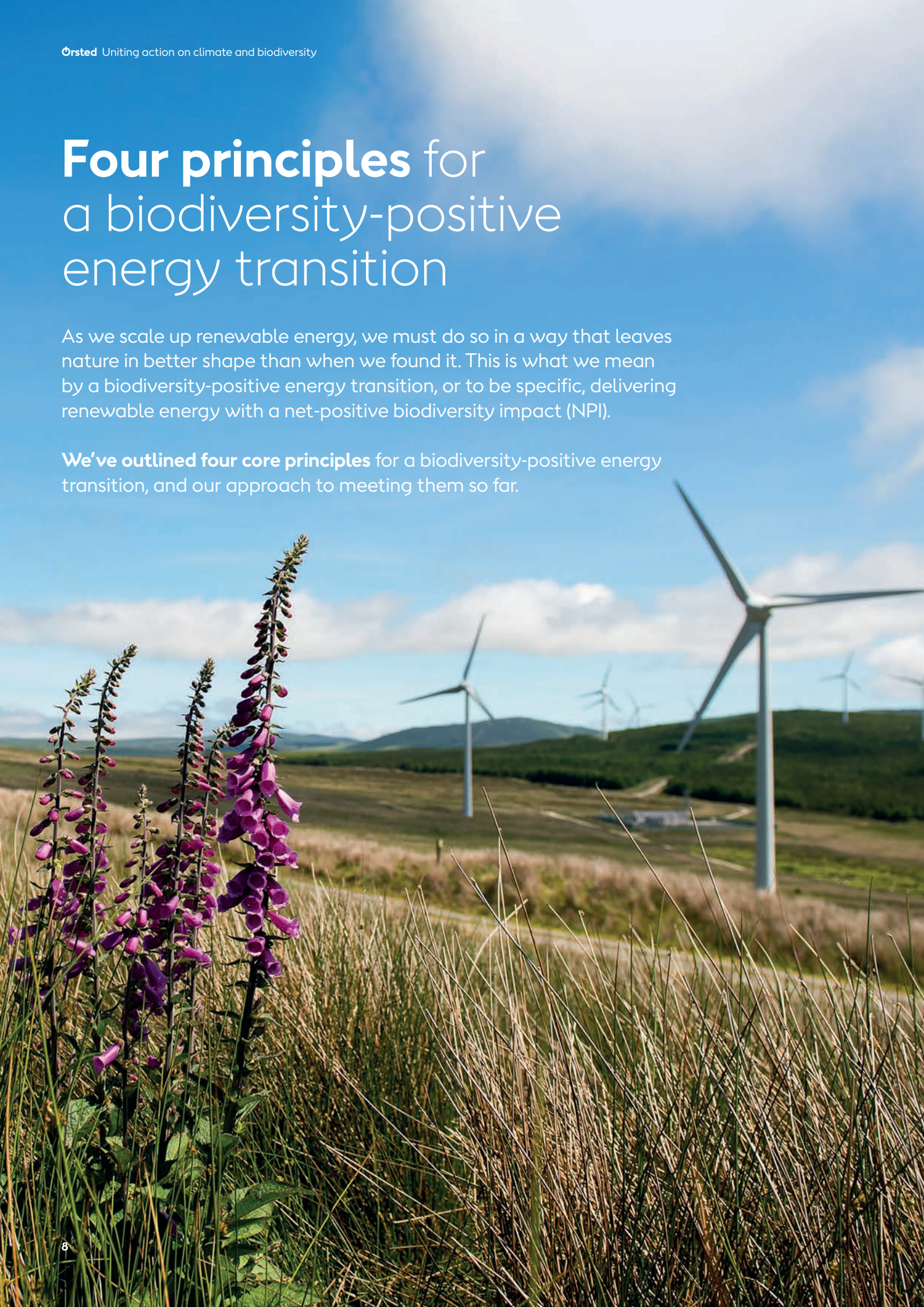
Supporting a healthy and thriving marine environment is the bedrock upon which the ocean's huge potential for climate action rests. This means action on emissions reduction and action to protect and restore marine and coastal ecosystems. Offshore renewables can and must address both.

7. Our global food system is the primary driver of biodiversity loss (UNEP). 8. 5 key drivers of the nature crisis (UNEP). 9. The Economics of Biodiversity: The Dasgupta Review (UK Government). 10. Biodiversity Hotspots (IPCC). 11. Biodiversity – our strongest natural defense against climate change (UN). 12. What are natural climate solutions? (The Nature Conservancy); and, Nature and Net Zero (World Economic Forum). 13. The ocean – the world's greatest ally against climate change (UN). 14. Protecting the ocean is critical for climate action (UNFCC). 15. Special Report on the Ocean and Cryosphere in a Changing Climate (IPCC).

Four principles for a biodiversity-positive energy transition

As we scale up renewable energy, we must do so in a way that leaves nature in better shape than when we found it. This is what we mean by a biodiversity-positive energy transition, or to be specific, delivering renewable energy with a net-positive biodiversity impact (NPI).

We've outlined four core principles for a biodiversity-positive energy transition, and our approach to meeting them so far.



1 Science-based decarbonisation

Biodiversity loss and climate change are interlinked in complex ways. However, one thing is clear: neither crisis can be solved while we continue to invest in fossil fuels. Their extraction, transportation and burning causes disturbance, degradation and pollution of nature. The climate change they drive is a large and growing cause of biodiversity loss and ultimately risks ecosystem collapse. Setting a science-based target for decarbonisation across the value chain – and delivering on it – must be a minimum standard and the basis for a social license to operate for the energy sector, and for claims to nature protection.

Our approach

Ørsted is a renewable energy company through and through – 99 % of our capital expenditure goes towards green energy. In 2021, Ørsted became the first energy company in the world to have our net-zero target validated by the Science-Based Targets initiative. We are on track to become carbon-neutral in energy generation and operations by 2025 and are working hard to reach net-zero across our full value chain by 2040. We have reduced our CO_2 emissions faster than any other energy company and set ambitious targets fully aligned with what climate science demands as our contribution to limiting warming to 1.5°C.

2 Avoid and mitigate negative impacts

The unprecedented expansion of renewable energy infrastructure needed means more interaction with the natural world that we ultimately seek to protect. From siting to installation and operations, it is essential that we continue to robustly follow the mitigation hierarchy using tested methods to prioritise avoidance measures, minimise and mitigate impacts, and restore habitats to achieve no net loss, innovating and improving continuously. Prioritising avoidance and mitigation to achieve no net loss is foundational to achieving net-positive impact (NPI).

Ørsted's industry-leading experience has seen billions of Euros invested in establishing foundational knowledge of how we interact with biodiversity and how to best avoid and mitigate negative impact. From early project development through construction to operations, we adhere to the mitigation hierarchy principles, in line with international standards and country-specific regulations. We do this by deploying best practice that are founded on our substantial and growing evidence base.

3 Set and deliver positive impacts

While there are several developments underway to create frameworks for target-setting, measurement and reporting on biodiversity, we need to do what we can to create positive impact on biodiversity today. Collectively we can then refine and improve our efforts as we gain more understanding and tools to accurately measure progress towards NPI. A starting point is setting clear ambition and being specific and transparent on the terms of our action with clearly defined metrics for success.

In June 2021, Ørsted announced a bold ambition to deliver net-positive biodiversity impact across all new renewable energy projects we commission from 2030, at the latest. This means going beyond no net loss, to enhance biodiversity and restore the ecosystems currently under threat. This ambition is at the core of our business strategy and we are working hard to deliver it in a measurable way.

4 Holistic susainability action

Meaningful and resilient outcomes demand a holistic view of climatic, ecological and social sustainability. This includes: i) taking an ecosystem-wide view of restoration, building on best practice while innovating to meet the challenges faced, ii) reducing the environmental and human impact of extracting resources, while improving resource circularity to minimise new extraction, and iii) supporting a just transition, not only in terms of local community benefit but also doing more to understand and elevate the role of indigenous people as stewards of biodiversity.

Ørsted prioritises finding and delivering value-creating solutions that are scalable and have sustainable outcomes for nature and people. We prioritise solutions tailored to the local ecological context and take an ecosystem-wide view of restoration, including looking beyond our asset footprint where this could have the best outcome for biodiversity. We are working with our supply chain to improve resource circularity, reduce carbon and ensure responsible sourcing.

Action Ørsted is taking on biodiversity

While there is much we don't have control over, there is a great deal we can and are already doing to deliver on our ambition.

Our actions can be divided into three main categories:

1 Working out the details while taking action now

- **Integrating our biodiversity ambition into the way we work.** This includes all assets that we commission from 2030 across onshore and offshore wind, solar power, Power-to-X and energy storage solutions. It applies across the entire project cycle – from pre-feasibility planning to closure – and it concerns all priority biodiversity for which there is a permanent and direct impact within and outside the physical asset boundaries. All the renewable energy asset components we develop and construct, as well as those we own and operate, are part of this work. In the absence of key biodiversity features (for example, if we are building on brownfield sites), we will still deliver biodiversity-positive measures. We will monitor and maintain project-specific targets through the asset lifetime, and beyond that, we will advocate for options that create the best outcomes for biodiversity, where markets require decommissioning.

- **Investing in cutting-edge restoration initiatives.** Our focus is to develop, test, and refine a toolbox of habitat restoration measures that are robust, scalable, and effective in different contexts. Work is well underway, with pilot projects ranging from seascape restoration in the UK, 3D-printed and biogenic reefs in Denmark, and testing of innovative approaches to coral restoration in Taiwan. We're investing on ongoing research and development to ensure that we're using the best methods and technology for understanding and minimising negative impacts. See pages 16-17 for some examples.

- **Partnerships to tackle complex problems.** We understand that we don't have all the answers, and that partnerships are essential to finding them. We work with global, national and local scientific and environmental NGO communities and we prioritise community engagement to help us understand and meet the variety of different stakeholder and ecological needs. We take a long-term view in this work, focusing on developing relationships that can be built upon for future projects, such as in the Offshore Coalition for Energy and Nature (OCEaN) with NGOs, transmission system operators, and other developers. This starts with the next generation of research and projects, like funding Arizona State University's research focused on identifying the overlap between burrowing owl habitats and areas of high solar project potential in the American southwest, and testing relocation strategies with artificial nests.

2 Making this scalable

- **Developing a measurement framework.** Ørsted is developing and testing a science-based framework to measure net-positive biodiversity impact, focusing on both habitats and species, that can be applied to renewable energy assets on and offshore. Our aspiration is that this will become a valuable industry standard.

- **Raising finance to further invest in biodiversity.** We're the world's first energy company to issue a blue bond. The initial EUR 100million issuance builds on our strong track record in green finance. It represents a commitment to help plug the substantial blue finance gap by giving investors a clear path to finance efforts to safeguard and enhance marine biodiversity.

- **Leading the way and advocating for steps we cannot take alone.** We're contributing our knowledge to help solve global challenges through, for example, supporting efforts to create frameworks for setting science-based targets for nature, nature-related financial disclosure, and NPI measurement.

  We're also engaged in a range of multi-stakeholder policy forums, developing evidence-based recommendations for policymakers, such as the UNGC Ocean Stewardship Coalition, where, together with The Nature Conservancy we're leading collective development of a set of principles for delivering offshore renewable energy with NPI. See page 23 for just some of the many leading organisations we are working with on this agenda.

3 Prioritising sustainable outcomes for people and planet

- **Reducing our demand for new metals and minerals and ensuring responsible extraction of virgin resources.** We look for every opportunity to minimise the extraction and processing of new raw materials across our entire value chain, in support of reducing pressure on habitats where extractive industries operate. We have committed to reuse or recycle all solar panels and all wind turbine blades upon decommissioning. Building on our established programme for supply chain decarbonisation, circularity and biodiversity are being integrated into our procurement policy. We are working with our supply chain and industry partners, including the Initiative for Responsible Mining Assurance (IRMA), to improve transparency and advocate for responsible sourcing of new materials.

- **Driving inclusion and positive social impact in local communities.** Key to our holistic approach to sustainability is our aspiration to bring opportunities and benefits to local communities through everything we do. This can be through community engagement, local job creation, skill building or supply chain development and broader benefit sharing. It also includes working closely with the fishing industry to find sustainable models for coexistence.

From no net loss to net-positive impact

To-date, much of what the energy industry promotes as action on nature falls into the category of avoiding and mitigating negative impact, which is often required under regulatory and permitting processes. This is critical work requiring significant investment that helps us reach "no net loss" (NNL) for biodiversity. As such, it forms the foundation for action towards NPI, which today mostly relies upon voluntary industry investment. The degree to which negative impact can be avoided upfront is key to the credibility, feasibility and cost-effectiveness of delivering net-positive biodiversity impact.

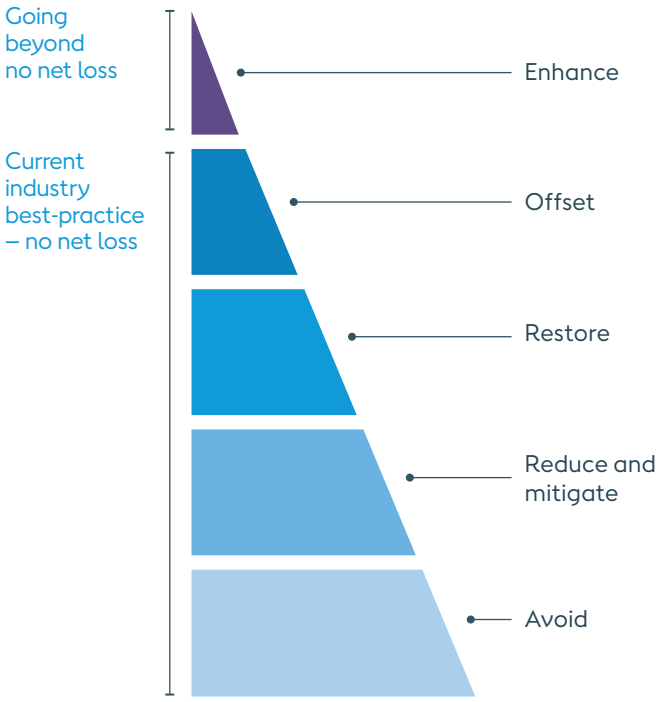
There are four steps in the traditional mitigation hierarchy, which target no net loss. We are adding a fifth step to reach net-positive impact, going beyond what is formally required of us today. As this field is evolving rapidly, terminology is also in flux and varies across regions. For clarity and specificity – important to ensure credibility and consistency – we have provided a glossary of terms at the end of this paper.

1. Avoid

Strive to avoid disturbance of biodiversity from the outset.

To the extent that we as a developer can control, Ørsted's policy is to select sites and cable routes that avoid sensitive biodiversity, through early planning and risk screening. This means that wherever possible we seek to avoid pristine habitats, vulnerable ecosystems, and Key Biodiversity Areas – including those that lie outside of formally designated protected areas.

The mitigation hierarchy



To set a clear and high bar for avoidance of such areas, Ørsted has committed to using the world-leading EU taxonomy for sustainable activities as a baseline for our project siting globally.

2. Reduce and mitigate

Minimise or eliminate impacts that cannot be avoided.

This is key during the installation phase where some of the largest potential negative impacts occur. During all phases of construction, Ørsted utilises a range of protective measures to minimise negative impacts. This includes restricting vessel speed, limiting certain activities to specific times of the year, and using noise reduction technology such as bubble curtains when we install offshore foundations. We also invest in research and development and innovation to continually adapt and improve.

Using tested monitoring technologies like military-grade thermal cameras, radar, and acoustic receivers, we can adjust activities in real time when certain vulnerable species come near our facilities during construction and operation. Adaptive mitigation is one way to ensure that we build efficiently and safely for nearby animals, getting construction assets offsite and solutions online sooner.

3. Restore

Return an adversely impacted biodiversity feature to the condition it was in before we started, where that impact could not be avoided or mitigated.

Where habitats are disturbed by our activity, we undertake work to return them to their baseline condition, for example restoring saltmarsh disturbed by cable installation. It is possible for such measures to also contribute to net-positive impact, in particular where the habitat was degraded before we arrived.

4. Offset

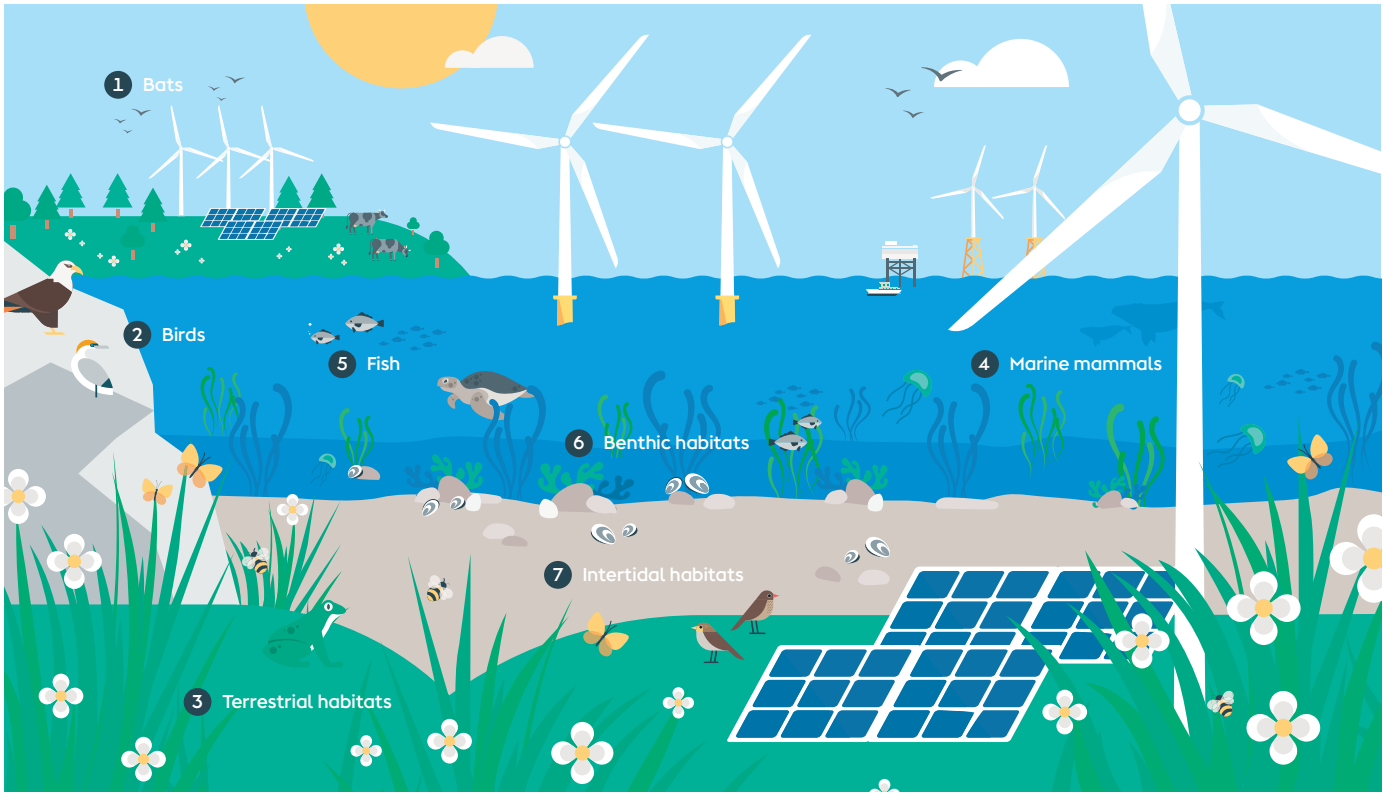
Compensate in ecological terms for unavoidable residual impacts that remain after the previous three steps have been applied.

An example is investment in artificial nesting structures to compensate for potential collision impacts. It is important to note that ecological compensation may also be 'out-of-kind' and away from the location of the impact, rather than like-for-like, where this delivers the best ecological outcomes. In some cases, this step may also contribute towards NPI.

5. Enhance

The goal here is to measurably increase biodiversity beyond the state present before the renewable energy asset was installed. This includes improving habitat condition, restoring high-value biodiversity habitat and supporting key species to enable ecosystem to recover and thrive. This is the focus of our pilot projects summarised on pages 16-17.

Our impacts on biodiversity can largely be grouped in these key biodiversity features



Identifying and prioritising which features to protect and restore

Our approach to delivering NPI builds on existing science-based methods for deploying the mitigation hierarchy, delivering conservation and restoration projects and measuring our impact. These have been refined and enhanced to ensure that we can compare our impacts across different ecosystem types. We work with solutions on a spectrum – from more traditional habitat restoration to innovative methods of species protection and threat reduction. This begins with local assessment of priority habitats and species to ensure that we have the right focus within a given area.

It's important that we don't only consider our biodiversity impact in relation to the abundance of certain key species, as has historically been the default, but also focus on wider ecosystem health, resilience, and connectivity. As a developer, owner, and operator, we cannot always influence the local approach to site prioritisation. However, Ørsted promotes the importance of looking beyond only localised efforts to proactively create ecosystem-level benefits that support long-term and resilient biodiversity restoration. Where possible we support projects designed to have regional or multi-habitat application.

What does it take to make freshwater ecosystems used by both local wildlife and communities healthy, functional and resilient? In Ørsted's case, the restoration of 500 acres of playas – natural high plains wetlands that collect rainwater and create temporary lakes that sustain important populations of native animals and vegetation in arid climates. This includes migrating birds, who use playa lakes as key stopover points. Together with the Playa Lakes Joint Venture, we're restoring several playas near our Texas wind farms, reviving key biodiversity hotspots and replenishing local water supply

This means that we prioritise biodiversity measures that also enhance broad ecosystem health. From that perspective, sometimes the best outcomes will be achieved through actions outside the boundaries of the renewable energy asset, while other times out-of-kind biodiversity measures, such as restoring or protecting different habitats than the ones that our renewable projects are interacting with, will prove more beneficial.

Core to our approach is early and transparent stakeholder engagement. This includes work with local stakeholders to understand their priorities for species and habitat restoration, and to align on how to define and avoid habitats that should not be developed on, to the extent that we can influence.

Understanding our impact

Measuring biodiversity is not a straightforward task. Biodiversity, unlike carbon, does not have a single metric, and a single project may need to consider a breadth of different metrics and indicators at varying spatial scales. This makes it challenging to set targets, establish baselines, and align regulatory requirements such as compensation or Biodiversity Net Gain with voluntary ambitions such as Net Positive Impact, and measure progress over time.

But measuring our impact on biodiversity matters. It allows us to understand whether we are achieving what we set out to, make informed refinements to our approach, and hold ourselves accountable for our biodiversity impact. It is also key to understanding the scope of our ambition and what it will require in terms of financial investment. By demonstrating investment impact, a measurement framework will also prove critical in securing additional investment to scale up this work, for example through blue bond issuances tied to NPI projects.

We need a measurement framework that can be applied across both terrestrial and marine renewable energy assets, and which is recognised internationally. Given the scale of buildout needed, we also need to be able to assess cumulative impacts. This is complex and is likely to require collaboration between developers.

Together with the Biodiversity Consultancy, Ørsted is developing a science-based impact measurement framework, founded in established scientific methodologies but applied by industry and to renewable energy assets for the first time. It will be applicable to our entire renewable energy portfolio spanning offshore wind (fixed bottom and floating), onshore wind, solar power and Power-to-X. It will be broad enough to cater for the diversity of project demands and flexible enough to account for the specific priority biodiversity features in each location, that we decide to focus on. We will work with local delivery partners to ensure a targeted action with the most significant impact for the local environment or wider region.

It is our hope that this framework will become a valuable industry standard and align with emerging frameworks for nature disclosure and science-based targets for nature, supporting our goal of a global energy transition that delivers positive outcomes for biodiversity. Beginning in 2023, we expect to consult with a variety of stakeholders to help ensure our approach is robust as we pilot its application on the ground.

The framework focuses on impacts on priority biodiversity features, comprised of natural habitat and a subset of species, prioritised on the basis of their threat status and potential to be impacted by our renewable energy projects.

More specifically:

- The proposed measurement framework for loss-gain assessment of Ørsted's projects includes two key components: natural habitats; and a prioritised subset of species.

- We will measure both species and habitats to ensure a more holistic assessment than our industry currently uses to deliver no net loss, and to enable the ecosystems approach which we know can deliver the largest and most sustainable positive impact.

- By identifying priority habitats and species that can be used as indicators for the state of biodiversity, we can focus resources and maximise sustainable outcomes. As a starting point, our species prioritisation will evaluate:
  - Critical Habitat qualifying species, identified on the basis of criteria quantitative thresholds defined by the International Finance Corporation's Performance Standard 6 and Guidance Note 6.[16]
  - Species categorised as Critically Endangered, Endangered, or Vulnerable on the IUCN Red List, or equivalent national/regional classification
  - Species at high risk of cumulative population-level impacts
  - Species of high concern to local stakeholders.

- Measurement of impacts to natural habitat will be accounted for using an Extent x Condition metric. This is the international standard for ecosystem accounting and the most commonly used and comparable framework for biodiversity metrics in national biodiversity policies and biodiversity frameworks, including the Taskforce for Nature-related Financial Disclosures (TNFD) and EU ALIGN guidance. Habitat and other proxies that correlate with population measures can also be used as an alternative for species that are difficult to measure in the field.

Leveraging Ørsted's many decades of experience in monitoring biodiversity features, both onshore and offshore, our specialists will determine appropriate future baseline and impact monitoring requirements. Through innovation and our ever-growing partnership base, we will use AI, proxy datasets, and our library of mitigation solutions to help optimise the collection of relevant biodiversity datasets and build potential efficiencies.

Ørsted specialists are also working hard in collaboration with The Taskforce for Nature-Related Financial Disclosure, the Science Based Targets for Network and others to support industry standard development. This includes aligning our approach to data collection to enable timely participation when global frameworks are in place. Developing science-based targets for nature is challenging, not least due to the far greater complexity in measuring nature relative to carbon emissions. However, their establishment will prove extremely important to help companies deliver appropriate, credible, and aligned biodiversity solutions alongside rapid decarbonisation.

Timeline to 2030

Committed partnerships, advocacy and engagement to drive forward and support this crucial agenda through global and local collaboration, with a solutions-based approach founded in science.

2021 launch

- Launch of Ørsted biodiversity ambition and programme to deliver it.

Progress to date

- Integration of ambition into our offshore wind pipeline.
- Multiple biodiversity enhancing pilot projects deployed to test and develop the right measures, contributing to a catalogue of options for new renewable project development.
- Issuance of first energy sector blue bond to direct further investment into this work.

Today – 2025

- Integrate our ambition fully into our offshore and onshore wind, solar energy and Power-to-X pipelines.
- Launch world first renewable energy biodiversity NPI measurement framework, to test and refine its use in on-the-ground projects and assess biodiversity baselines, as well as supporting development of industry best practice standards.
- Share learnings from our pilot programme to drive and support industry-wide action.

2025 interim target

- Comprehensive toolkit established that enables full integration of NPI actions and reporting into all new renewable energy projects.

2026-2030

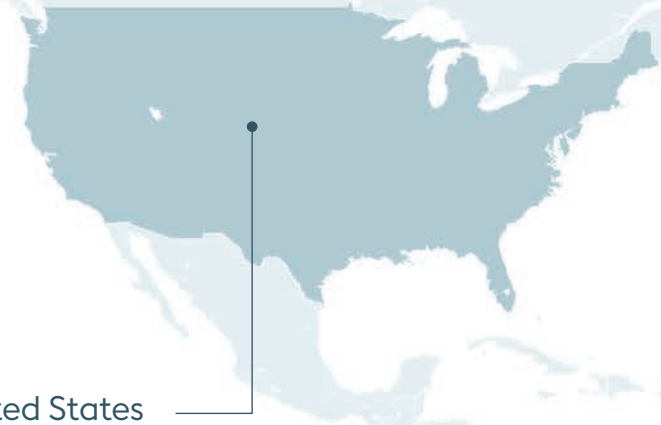
- Continued deployment of new and innovative biodiversity enhancing projects in support of our ambition.
- Consolidation of our ongoing innovations in monitoring impacts, our pilot projects and the learning from them, and our NPI measurement framework.
- Exploring what further synergies we can create between our biodiversity programme and existing Nature Based Solutions for climate, such as our mangrove restoration projects in The Gambia and Ghana.
- Building on our leadership in addressing the blue finance gap to ensure investors can enhance this work.

2030

- All new renewable energy projects commissioned from here on to deliver net-positive biodiversity impact.

16. IFC PSG and GN6

Prioritising biodiversity across our global portfolio



Norway

- Testing new technology for birdlife monitoring

UK

- Restoring seascapes in the Humber Estuary
- Protecting seagrass with Blue Meadows initiative
- Testing potential of seaweed farming to boost biodiversity
- Mapping climate impacts on future fish migration with PREDICT

Ireland

- Integrating biodiversity and skill-building with the Wild Bee Nursery Project

United States

- Restoration of rare coastal prairie in Texas
- Protecting and restoring tallgrass prairie in Kansas
- Protection of native tallgrass prairie in Texas
- Researching burrowing owl nests and relocation techniques in Arizona
- Restoring natural high plains wetlands in Texas

More information on all our pilot projects can be found on **orsted.com/nature**

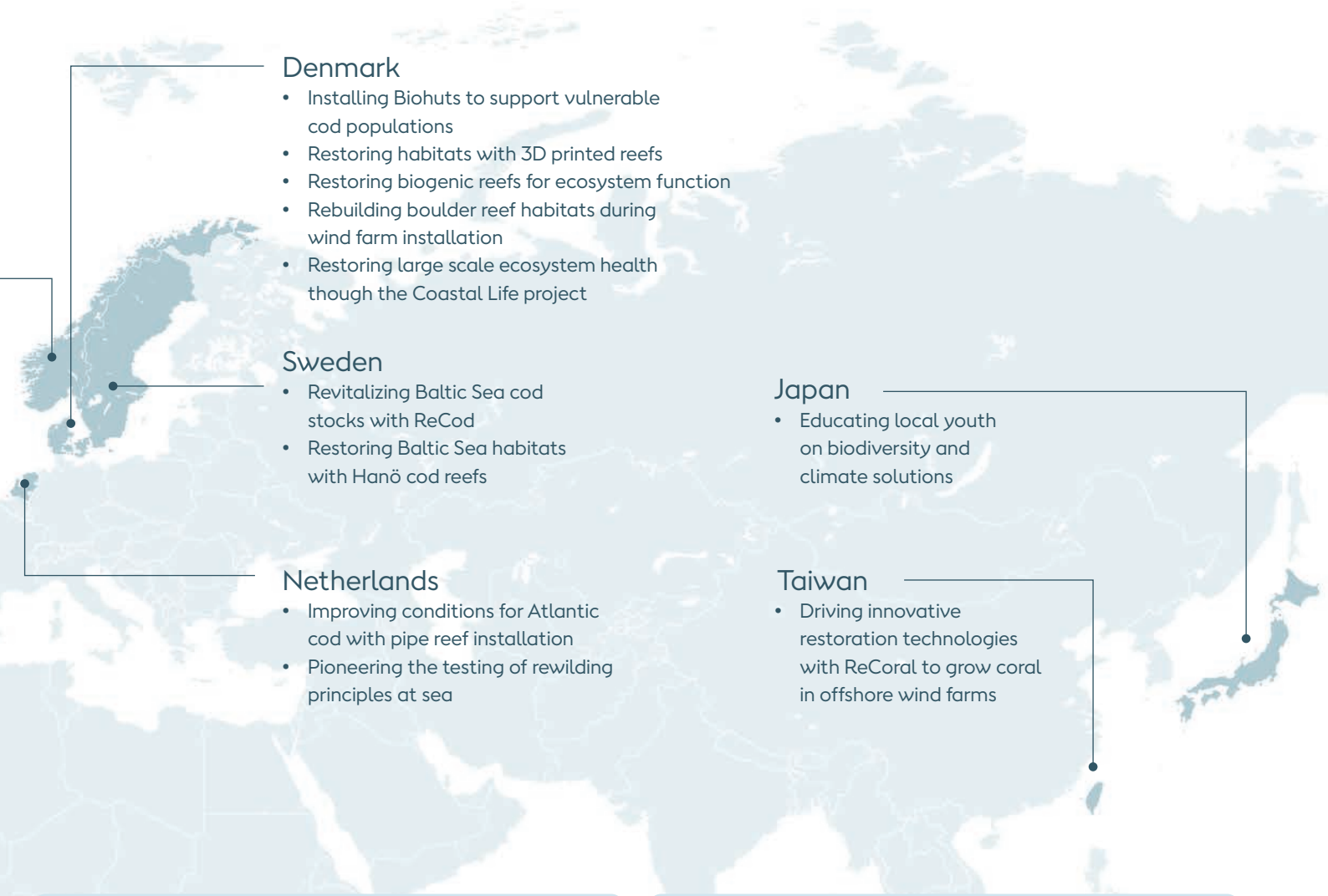
Case study 1

A seascape approach to restoration in the Humber Estuary, UK

In this project with the Yorkshire and Lincolnshire Wildlife Trusts, we're embarking on restoration that focuses on multiple habitats that are key to the local ecosystem. Due to pollution and loss of habitat, 95 % of native oyster reefs have disappeared from the area since the early 1900s. We are reintroducing native oysters as well as seagrass and salt marsh – and so rewilding the estuary's ecosystem.

The UK's Department for Environment, Food and Rural Affairs (DEFRA) has commended this pilot project as an example of how restoration of important marine habitats can work in practice and deliver multiple benefits for biodiversity and climate.

Seagrass is one of the unsung heroes of nature-based solutions to climate change, due to its huge capacity for carbon absorption. It can remove carbon from water faster than tropical rainforests remove carbon from air. Salt marshes are similarly efficient at capturing and storing large quantities of carbon. Together, they also provide nutrient-rich habitats for a variety of fish and birds and play an important role in climate adaptation by protecting coasts against the impact of storms and flooding. The native oysters will promote water purification and provide habitat for other species through the creation of biogenic reef.



Denmark

- Installing Biohuts to support vulnerable cod populations
- Restoring habitats with 3D printed reefs
- Restoring biogenic reefs for ecosystem function
- Rebuilding boulder reef habitats during wind farm installation
- Restoring large scale ecosystem health though the Coastal Life project

Sweden

- Revitalizing Baltic Sea cod stocks with ReCod
- Restoring Baltic Sea habitats with Hanö cod reefs

Japan

- Educating local youth on biodiversity and climate solutions

Netherlands

- Improving conditions for Atlantic cod with pipe reef installation
- Pioneering the testing of rewilding principles at sea

Taiwan

- Driving innovative restoration technologies with ReCoral to grow coral in offshore wind farms

Case study 2

Protecting native tallgrass prairies in Texas, US

In partnership with The Nature Conservancy, we are taking steps to preserve almost 1,000 acres of the tallgrass prairie that grows around our Mockingbird solar farm in Texas. Together we're preserving over 50 % of the Smiley-Woodfin Native Prairie Grassland, the country's largest continuous stretch of this type of rare native tallgrass prairie, and developing best practices for restoring degraded native prairieland. By setting aside areas for native tallgrass prairie, we can boost the biodiversity and ecological health of the largest continuous stretch of native prairie ecosystem remaining in Texas.

From filtering water to storing carbon, prairies are some of the hardest-working ecosystems on the planet, serving people and animals alike. Prairie soil naturally captures and stores large volumes of carbon – up to five tonnes per acre. This makes preserving prairies an integral step to reducing carbon in the atmosphere, addressing both biodiversity and climate challenges. Thanks to their deep root systems, prairies can also absorb large quantities of rainwater, protecting local wildlife and communities during heavy rains. They are also a major habitat for pollinating species, including bees, butterflies, and birds.

Case study 3

Exploring potential for coral to thrive in offshore wind farms, Taiwan

ReCoral is a proof-of-concept trial in partnership with the Penghu Marine Biology Research Center. We aim to support natural coral growth on the foundations of offshore wind turbines on the Greater Changhua offshore wind farms in Taiwan. If successful, we hope to scale up this coral restoration method to use on other offshore wind farms.

The novel non-invasive method involves collecting coral spawn that washes up on the shoreline of the Penghu Islands, cultivating it in the laboratory, and then introducing viable coral larvae into mesh cages specifically designed to fit around turbine foundation pieces. The intention is that the larvae will settle and grow there, where they will have good access to light while being protected from extreme temperatures by the natural circulation of the cooler, deeper water the turbines stand in.

Healthy coral reefs are a fundamental building block for thriving ocean ecosystems, and an invaluable form of natural coastal protection from extreme weather events. But corals and the unique reef ecosystems they create are at risk because of climate change. ReCoral is a project that sets out to discover whether offshore wind turbine foundations could provide an additional new home where corals have the potential to flourish.

Unlocking the potential of a biodiversity-positive energy transition

There is a need for speed in addressing the climate and biodiversity crises and correcting the historically siloed approach to them. At Ørsted, we do not yet have all the answers, nor do we have all the levers of change. Acting collaboratively, with all stakeholders playing their part, is the only way to secure the potential for the positive outcomes we require at the scale and pace needed on biodiversity and climate.

There are two key challenges that exist on the macro level when it comes to unlocking the potential of a biodiversity-positive energy transition:

Securing a mandate for the speed and scale of new renewables needed

While awareness of the interdependencies of climate and nature is growing, so too is the squeeze on the physical space that we have for delivering on each agenda, as targets for renewable energy expansion and nature protection necessarily grow in ambition.

In this context, it is urgent that we seek out synergies and focus on practical solutions that will deliver on shared goals. How we plan and manage use of space is of huge importance, and there is great room for improvement if we are to rise to the challenge at hand. We need a new and innovative approach to unite action on both agendas.

> "Investing in nature will protect biodiversity and improve climate action, human health, and food security. Governments need to include biodiversity as a criterion in financial decision-making.
>
> ***António Guterres***
> *UN General Secretary (2020)*

Biodiversity-positive renewable energy is the key to unlocking the ecological headroom and support for the pace and scale of buildout needed. Collaboration and collective action are needed to ensure this mandate. Policymakers must enable and incentivise this integrated approach.

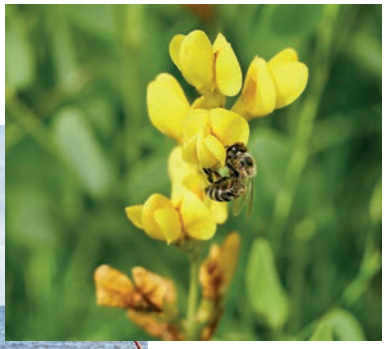
Navigating a complex and disjointed policy landscape

When it comes to climate and biodiversity, we currently have two separate global frameworks, two separate communities driving action, and typically two separate sets of policy actors at the national level. This needs to change. Integrating the two agendas is fundamental as we pursue timely and effective implementation of goals and commitments.

At the global level, the Paris Agreement requires state actors to maintain plans of how they will deliver climate goals through Nationally Determined Contributions (NDCs).

The Kunming-Montreal Global Biodiversity Framework tasks governments with showing their progress on halting and reversing biodiversity loss with National Biodiversity Strategies and Action Plans. Integration of these two UN processes is nascent. The same is true of national-level action, where the all-important implementation sits. The two agendas are generally approached from within different ministries.

Much has been made of the climate 'ambition loop', whereby state and non-state actors take turns to drive ambition. Bold government policies and private sector leadership reinforce each other, building momentum. Ørsted is showing leadership, and we are looking to governments to implement bold policies to match – and push – that leadership further.



Today, net-positive biodiversity outcomes are not a requirement set by governments when selecting renewable energy projects, nor are such outcomes incentivised or even recognised. There is little incentive for the additional investment science tells us society needs.

But when it comes to what policy or regulatory action is required, it gets tricky. The baselines, legal frameworks, and approaches across markets vary wildly, presenting a challenging landscape to navigate.

Market complexities include variation in:

- Planning use of space and site selection, both onshore and offshore, with varying potential for developer influence.
- Governance of other pressures on biodiversity, like fishing and agriculture.
- How projects are selected or put forward, and in requirements or incentives related to biodiversity inside and outside of tenders.
- Views on what is considered good mitigation, compensation and restoration measures for key habitats and species, how principles of additionality are applied, and different regulatory requirements for how and when they are applied.
- Where in the process government vs. developers make key decisions, and the extent to which a collaborative approach amongst projects is promoted over competition.
- Regulatory and social understanding of what biodiversity means and how it is protected through existing policy frameworks.

Policy leadership

Governments across the world are developing innovative approaches to incentivise and enable integrated solutions for climate and biodiversity.

Leading examples from mature renewable energy markets include:

In the UK, large infrastructure projects must now deliver a 10 % net gain for terrestrial ecosystems, and regulators are developing standards for marine ecosystems as well. The current Energy Bill also proposes an industry-financed Marine Recovery Fund which will support delivery of strategic compensation, helping align and scale up efforts on biodiversity, and pilot initiatives such as the network of Highly Protected Marine Areas in England offer potential solutions to ensure that renewable energy developments avoid sensitive marine ecosystems.

The Netherlands is leading the way on integration of non-price factors in tender criteria for offshore wind, making ecological innovation a winning factor in selecting which projects will proceed. Emphasis here is on research and development and mitigation efforts, rather than delivering NPI, but this pioneering tender framework is a great example of how integration of climate and biodiversity goals can be realised, ensuring higher long-term societal value from renewable energy projects.

Our call to action for climate and biodiversity

The following call to action outlines three shifts that are fundamental to a biodiversity-positive energy transition. There is a great deal of work ahead, but if we work together, we will have a greater chance of meeting global goals on climate and biodiversity.

1 The entire energy industry must act now, in line with science

Reflecting the interdependent nature of biodiversity and climate action, Ørsted is calling on our peers in the energy industry to decarbonise now and integrate action on biodiversity. This means setting and delivering on science-based targets for net zero as a fundamental prerequisite to credible action on nature, leaving fossil fuels in the ground and halting climate-driven biodiversity loss.

Beyond this, simply minimising negative impacts on the immediate environment is no longer enough. We need collective ambition and clear action to deliver net-positive biodiversity impacts as we transition to green energy, helping to not only halt but also reverse biodiversity loss. This means early integration of biodiversity, as well as wider social and environmental risks, into investment decisions. The energy industry must provide clear options for corporate buyers to procure clean energy with integrated biodiversity solutions.

Finally, knowledge sharing, collaboration and collective advocacy will help us all achieve more. This includes calling for policymaker action to integrate biodiversity restoration into the energy transition.

2 Environmental NGOs and the renewable energy industry must work together

Ørsted is inviting those focused on protecting nature to work with us in the renewable energy industry, to find practical solutions that deliver on shared goals. This could be through on-the-ground collaboration on restoration projects or by joining forces on R&D that can, for example, help improve outcomes for protected species or find lower cost methods of restoration, or monitoring of impacts and co-use.

Additionally, by joining forces to develop and amplify advocacy efforts, our united voice can send a powerful message to policymakers to advance the steps we need from them.

3 Policymakers must enable and incentivise a biodiversity-positive energy transition

While the precise policy response will need to be tailored to local contexts, there are two core principles necessary to kick-start meaningful action: integrating the planning for implementation of climate and biodiversity goals; and incentivising investment in biodiversity-positive renewable energy, including robust scientific standards that provide social license for the scale of build-out needed.

The right frameworks will enable action on biodiversity and energy to be mutually supportive. Clear and stable policy signals, sooner rather than later, will spur action from developers and the investment community to help governments fulfil their obligations to society under the Paris Agreement and the Kunming-Montreal Global Biodiversity Framework.

Integrate implementation of climate and biodiversity goals

The starting point for policymakers needs to be viewing renewable energy, done right, as a solution to both the climate and biodiversity crises. The approach to policy and regulation needs to reflect and facilitate this, moving away from a historically siloed approach to environmental and climate policymaking.

A fresh and practical policy approach, driven by data and stakeholder engagement, is needed to find synergies in how we use our space in the best way to deliver sustainably for climate, biodiversity and local communities.

In an ideal world, approaches like Marine Spatial Planning and land use guidelines would set a clear roadmap for what we do where, which could then be strictly followed to meet decarbonisation goals at a national and regional level. Unfortunately, it's not that simple – many countries do not currently have such processes, constraints are mounting, and we are running out of time.

This means we need policy innovations to enable action that protects us from the impacts of runaway climate change and from direct degradation of nature. We need clear policy on use and management of space, that comprehensively ensures the future health of ecosystems onshore and offshore and guides targeted investment in restoration while also enabling clean energy to get to homes and businesses efficiently.

Energy planning, project level permitting, and regulatory frameworks need to identify and prioritise areas of low biodiversity sensitivity. And while renewable energy projects should in general terms seek to avoid protected areas, co-use in some instances will be the path to the most sustainable outcomes. Nation states need regularly updated and ratified marine spatial plans with identified areas for future leasing. And we need a clear and standard approach to how we define and manage biodiversity benefit in multiuse areas, such as other effective area-based conservation measures (OECMs).

Incentivise investment in biodiversity-positive renewable energy

To get the renewable transition right for biodiversity and climate, we need policymakers to create the conditions for the right projects to progress.

For example, a workable NPI measurement framework developed by industry will enable developers to map their impacts, but this will not lead to concrete action at scale without government action to place clear value and reward on what is currently voluntary private sector action on NPI.

In a highly competitive industry, developers will typically deliver what governments are demanding – not more. If the frameworks for project selection focus on price alone, society will get the cheapest possible renewable energy projects in the short term, and the potential for innovative sustainability solutions, of critical long-term value to society, will be lost.

We are asking governments to drive a race to the top for societal value – not risk a race to the bottom on price for an already cost-competitive technology. For example, well-designed selection or minimum criteria in tenders would ensure investment in offshore wind contributes to climate and biodiversity goals, supporting sustainable socio-economic development and positive biodiversity impact. This is one clear route to financing implementation of the Global Biodiversity Framework and taking the action people and planet need.

Organisations we work with

Here we present some of the many excellent organisations and coalitions that we work with, whether through formal partnerships or collaborations, or contributing to their efforts on this important agenda.

ARK Rewilding Nederland

BalticWaters

CLEANaction
Coalition Linking Energy And Nature for action

restoration of coastal habitat zones
COASTal LIFE

DTU

Friends of Ocean Action

Lincolnshire Wildlife Trust

Native Prairies Association of Texas

Nature Metrics
DNA-based monitoring

Ocean & Climate Platform

ocean conservation trust

Playa Lakes Joint Venture

Renewables Grid Initiative

Science Based Targets
Driving ambitious corporate climate action

Seagrown
Wild Ocean Farming

spoor

The Biodiversity Consultancy

The Conservation Fund

The Nature Conservancy

TNFD Forum Member

The Rich North Sea

UN Global Compact

Ocean Stewardship Coalition

Working together for ocean biodiversity

WWF

Yorkshire Wildlife Trust

Glossary of terms

This glossary seeks to provide clarity on key terminology as Ørsted sees things, based on our work on the ground and founded in best practices and the scientific literature. Ørsted recognises this is a fast-evolving area with regional variations in how some technical terms are used.

Term	Definition
Biodiversity	Biodiversity can mean something different in different cultures and regulatory landscapes, and ultimately always reflects the unique ecology at hand. Global policy discussions, like those hosted by the Convention on Biological Diversity, highlight 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.' In any location, when we attend to biodiversity, this means we attend to the connectivity and integrity of ecosystems, species abundance and resilience, and extinction risk.
Biodiversity Net Gain	A term now linked with upcoming legal requirements in England for projects having a non-temporary impact on habitats (impacts that will take more than two years to fully recover from naturally) to create a 10 % ecological uplift on the impacted habitats. Other countries have unique policies to address ecological uplift that might be included in determining requirements for offsetting or compensation.
Biodiversity offsetting	Measurable biodiversity uplift resulting from actions designed to compensate for residual adverse impacts that occur during construction or operation after appropriate avoidance and minimisation measures are taken. This can, but does not always necessarily, contribute towards net-positive impact. See also ecological compensation.
Cumulative impact	One of the common questions surrounding large-scale renewable buildout is how multiple projects in a given area will collectively impact nature. These 'cumulative impacts' are often identified and mitigated at the permitting stage of a project. The terms is sometimes used in reference to the impacts from one industry alone, and at other times can refer to impacts caused by multiple industries.
Ecological compensation measures	Actions designed to deliver demonstrable conservation outcomes to compensate for residual impacts. This can cover a range of actions including biodiversity offsetting. This can, but does not always necessarily, contribute towards net-positive impact.
Ecosystem-based management or seascape approach	Ecosystem based management (EBM) is an approach to use, conservation, and restoration of ecosystems to ensure healthy, productive, and resilient condition, so that they can provide irreplaceable services to humans and key species. This approach emphasizes the protection of ecosystem structure and key processes, and accounts for interconnectedness among systems as well as social perspectives (Christensen et al, 1996). Such an ecosystem approach is important in order for net-positive biodiversity action to deliver holistic and long-lasting benefits across species, and for the long-term resilience of wider ecosystems.

Ecosystem services	The valuable contributions that natural ecosystems provide for human wellbeing and quality of life. This can be in a practical sense, providing food and water and mitigating or adapting to climate change, as well as cultural aspects such as reducing stress and anxiety.
"Like-for-like or better" principle	In offsetting project impacts, a party may propose a range of solutions for how to deliver the best possible result for the specific ecosystem or impacted species. This might include conservation either of the same biodiversity values impacted by the project or those considered of a higher priority (i.e., "trading up"; where the offset targets biodiversity of higher priority than that affected by the project) (CSBI 2013).
Mitigation hierarchy	The mitigation hierarchy traditionally describes the order in which actions should be taken when managing biodiversity impacts with the goal of achieving no net loss: avoid, minimise, restore, offset. There are some nuanced differences between markets in how the terminology within the hierarchy is used, but the overall approach is consistent and well-established.
Nature Inclusive Design	Actions taken in project design that are integrated or added to the design of solar, onshore, or offshore wind infrastructure to increase suitable habitat for native species. Traditionally this does not include how projects are sited.
Nature Positive	A broad term that describes a societal level goal halt and reverse nature degradation. Nature is all living things (i.e. biodiversity) together with the geology, water, climate, and other components that comprise our planet. To focus on biodiversity impact, while nonetheless complex, is therefore simpler to measure and demonstrate clear accountability for.
Net-Positive Impact	Net-positive impact occurs when the totality of the biodiversity impact, including via measures taken to offset the residual impact of a development project, exceeds the loss, thereby creating an overall benefit.
No Net Loss	No net loss occurs when the totality of the biodiversity impact, including through measures taken to offset the residual impact of a development project, are equivalent to the loss.
Out of Kind	While 'in-kind' would mean that biodiversity losses are compensated with gains for exactly the same biodiversity (species, habitats, biotopes etc.). In out-of-kind (flexible) offsets, gains can be accepted for biodiversity features different from those suffering damage (Bull et al., 2015). Ecological compensation that is out-of-kind can in some circumstances deliver the best ecological outcomes.
Protected Area	A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Specific terminology varies across countries, there are some global designations, based on priority habitats in specific regions or globally scarce habitats and ecosystems.
Rewilding	An evolving approach to conservation that involves supporting nature to take care of itself, with targeted interventions to redress barriers to natural processes repairing damaged ecosystems and landscapes. To read more about this approach, see Toit and Pettorelli 2019.
Strategic (ecological) compensation	An approach to ecological compensation that looks beyond individual project level, with collaboration across projects and potentially developers, to deliver strategic compensatory measures that have better long-term outcomes for biodiversity and wider ecosystems.

About Ørsted

Ørsted develops, constructs, owns, and operates renewable energy facilities, including offshore and onshore wind farms, solar farms, energy storage, renewable hydrogen and green fuels facilities, and bioenergy plants. Headquartered in Denmark, Ørsted employs approx. 8,000 people globally, with activities and assets spanning the entire globe.

Today, Ørsted operates more than 14 GW renewable energy capacity, with another 6.2 GW under construction, and a further project pipeline of 10.6 GW awarded capacity.

In 2023, we presented a fully self-funded plan to invest approx. EUR 63bn, to reach ~50 GW installed renewable capacity by 2030.

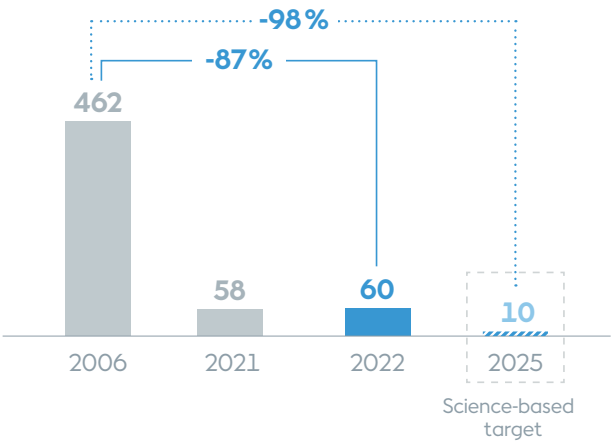
To reach this target – while creating value from every new and existing project – we take an open, innovative, and business-inclusive approach. We're committed to enter strategic partnerships with industry leaders among both our suppliers and offtakers, to further develop and implement the solutions needed to create a world that runs entirely on green energy.

From fossil-intensive oil and gas company to global green energy major

In 2012, Ørsted was one of the most coal intensive power generators in Europe with an expanding oil and gas production business. But we took a strategic decision to become a green energy company, as we were convinced it was the right approach strategically, financially, and environmentally. We invested heavily in renewable energy, particularly offshore wind, and formulated our vision of creating a world that runs entirely on green energy.

Today, we are one of the world's largest renewable energy companies by capacity and a global leader within offshore wind energy. We have exited our upstream oil and gas business, we will phase out coal entirely from our energy generation by 2024, and we are on track to meet our science-based 2025-target of a 98 % reduction in emissions intensity.

GHG intensity (scope 1-2)
g CO_2e/kWh



Creating a green transition that works for people and planet

We aspire to run a business that gives more to nature and society than it takes. This requires that we integrate solutions to some of our largest societal challenges into our green energy projects, ensuring that the green transformation creates a lasting positive impact on our environment, biodiversity, and social structures.

We're committed to our ambition that all new renewable energy projects commissioned from 2030 should deliver net-positive biodiversity impact. To realise this ambition, we're partnering with leading NGOs and other experts to explore, develop and implement biodiversity positive solutions.
We have taken active responsibility to address and reduce the life cycle impact of our generation assets. In 2021, we were the first energy company in the world to have our net-zero target, verified by the Science Based Targets Initiative (SBTi), of reaching a net-zero value chain by 2040. A target, which we're now working with our supply chains, including cement and steel producers, to accomplish.

We have to responsibly manage the waste from our operations and from decommissioning when assets reach end-of-life. We have introduced a ban against landfilling wind turbine blades and solar panels across all markets.

To be successful, the green transformation must also be made equitable, inclusive, and 'people positive'. Therefore, we're working across our markets to ensure that our projects benefit both the people they employ, and the community of which we're part. We invest to attract, develop, and retain a diverse workforce, and to help create a path for disenfranchised groups to be part of the green transformation. We recently launched a global 'Ørsted Youth Panel' to act as the voice of the young generation. And while continuously working to improve our organisation's gender balance, we have several strategies and initiatives for our diversity efforts and initiatives beyond gender.

Today	Zero wind turbine blades to landfill
	Reuse or recycle all solar panels from our portfolio
2025	98 % reduction in emissions intensity[18]
2030	All new renewable energy projects commissioned from 2030 should deliver net-positive biodiversity impact
	40:60 gender balance in our total workforce, including among people leaders and senior leadership
	Today, our overall gender balance is 33:67. (women:men)
2040	Net-zero value chain[19]

18. Scope 1-2 emissions (CO_2 e/kWh) from a 2006 base year.
19. Scope 1-3 emissions. See full overview of Ørsted's science based targets in our annual report.

Ørsted
Love your home

About this paper

By 2030 the world must be well on its way to net zero. In the same timeframe, we need to halt biodiversity loss and be moving to restore the ecosystems upon which life depends.

Climate change and biodiversity loss are deeply connected. This connection has become a negative feedback cycle where each crisis increasingly exacerbates the other. To break this cycle and create a better world, we must ensure solutions to one support efforts on the other.

Ørsted is at the forefront of the green energy transition. Transformation of the global energy system is a critical step in halting biodiversity loss driven by climate change. Today, we know that integration of positive action to restore biodiversity is the next and essential frontier for our industry.

This paper sets out why we need an integrated approach, what the renewable energy transition can offer, and what steps we believe are needed to ensure we get this right.

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orsted.com/nature

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