



# Addressing Biodiversity Impacts for Downstream Renewable Energy Companies



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This guidance document has been prepared by the Secretariat of the International RBC Agreement for the Renewable Energy Sector, based on input from the parties to the Agreement. The views expressed in the document may not reflect those of all the parties.

The document is intended for use by downstream wind and solar energy companies, who are in the beginning of their biodiversity management journey and would, therefore, like to gain a better understanding on this topic and would like to know where to start.

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# 1 What is biodiversity and why is it important?

Biodiversity encompasses the variety of living organisms, including diversity within species, between species, and across ecosystems. The diminished abundance of species due to over-exploitation, habitat fragmentation and degradation, pollution, and other pressures contributing to biodiversity loss are ongoing and even increasing due to development and rising human populations. This reduction in biodiversity adversely impacts ecosystem resilience. Therefore, conserving biodiversity is critical to ensure the continued survival of species and ecosystems, which are essential for the numerous services they provide.

There are a variety of reasons why downstream companies must address their negative biodiversity impacts. The main considerations are the following:

- **Regulatory compliance:** stricter environmental regulations in many jurisdictions require companies to prevent and mitigate biodiversity loss. For instance, many countries mandate environmental impact assessments, especially for businesses near protected areas. Companies must comply with specific conservation measures and may need permits for activities like land development or mining. Non-compliance can result in loss of operational licences. Therefore, proactively contributing to a healthy environment is in companies' self-interest.
- **Interdependence of businesses and ecosystem services:** most businesses depend on ecosystem services, such as water, for their operations. However, their activities often negatively impact these same ecosystem services. For instance, a manufacturing plant might use water from a nearby river for production, but it could also pollute the same river with waste, harming the ecosystem. This creates a cycle where businesses both rely on and affect the natural resources they need, highlighting the importance of sustainable practices.
- **Risk mitigation:** biodiversity loss can disrupt supply chains and business operations, leading to higher costs and potential interruptions. For example, if a company relies on a specific natural resource, the decline of that resource due to biodiversity loss can make it harder and more expensive to obtain, affecting production and profitability. Therefore, protecting biodiversity helps ensure the stability and efficiency of supply chains.

- **Corporate responsibility:** protecting biodiversity is also a corporate responsibility arising from numerous international standards.
- **Business opportunities:** investing in sustainable practices can drive innovation, allowing companies to develop new products and services. It can also set a business apart from competitors, attracting customers who value environmental responsibility. Additionally, demonstrating a commitment to sustainability can build consumer loyalty, as more people prefer to support businesses that prioritise the health of the planet.

## 2 Tailoring biodiversity strategies across the value chain

The OECD Guidelines for Multinational Enterprises stipulate that companies need to conduct their activities in a manner that takes due account of the need to protect the environment, workers, communities and society more broadly. All companies bear responsibilities to address their impacts on biodiversity. While upstream activities at renewable energy companies often result in significant biodiversity impacts at the mining level, downstream operations contribute through project sites, transportation, installation, operation, and product end-of-life phases. Moreover, addressing impacts on the abiotic environment is crucial as they can have far-reaching effects on ecosystems. It's essential for all companies to recognise and mitigate these impacts comprehensively, reflecting their shared responsibility in biodiversity conservation efforts.

Depending on where you stand in the value chain—whether you're a project developer, an original equipment manufacturer (OEM), or a wholesaler – you may have different impacts, influence and roles:

- **Project developers** typically face immediate biodiversity impacts at project sites. Therefore, their strategies often revolve around implementing measures to minimise these impacts and protect local biodiversity.
- **OEMs**, such as those producing wind turbines or solar panels, can prevent negative impacts by focusing on their production processes. They can integrate biodiversity-friendly practices into their operations and product designs. Furthermore, they often have more leverage upstream in the value chain and can use their influence to encourage suppliers to adopt similar sustainable practices.
- **Wholesalers**, along with project developers and OEMs and other actors, can play a crucial role in integrating biodiversity considerations across the value chain. They can engage in dialogues with suppliers to ensure sustainability standards are met and promote biodiversity-friendly practices throughout their value chain.

### 3 What measures can downstream companies take to address biodiversity impacts?

Below you will find a non-exhaustive list of possible practical action steps that downstream companies can take if they would like to start addressing this issue in their organisations:

- 1 [Start by identifying and understanding the adverse biodiversity impacts associated with your company's operations, products and services. This may include examining supply chains, production processes, waste management practices and land use.](#)

In this context you might look at your direct, indirect and cumulative impacts:

- **Direct impacts:** these are immediate effects on wildlife and ecosystems caused by the construction, operation, or maintenance of renewable energy infrastructure. For example, wind turbines can pose risks to birds and bats through collisions with the turbine blades or habitat disturbance during construction.
- **Indirect impacts:** these arise from secondary effects linked to renewable energy projects. For instance, large-scale solar farms might lead to habitat fragmentation or changes in local microclimates, affecting plant and animal species indirectly.
- **Cumulative impacts:** over time, the combined effects of direct and indirect impacts can alter biodiversity patterns and ecosystem dynamics. Continuous expansion of renewable energy installations, without careful planning, could lead to cumulative impacts such as loss of habitat connectivity or disruption of migratory routes for wildlife.

Below are some tools that you can use to assess your biodiversity risk impacts:

- free online [Biodiversity Risk Filter](#) tool by the World Wide Fund for Nature: this tool assesses two types of biodiversity-related business risks:
  - 1) **Physical:** a company's operations and value chain may face physical risk if located in land or seascapes that experience a decline in ecosystem services



and heavily depend upon these ecosystem services or increase pressures on biodiversity with their activities.

- 2) **Reputational Risk:** a company may face reputational risk if stakeholders and local communities perceive that it does not conduct business in a sustainable and responsible fashion with respect to biodiversity.

- **Integrated Biodiversity Assessment Tool (IBAT)** by the IBAT Alliance (Birdlife International, Conservation International, IUCN, UN Environment Programme, WCMC). IBAT provides data, tools and guidance that help organisations to act on biodiversity related risks and opportunities and generates sustainable funding to support biodiversity datasets. It has free and paid subscription options.

## 2 **Adopt clear and measurable biodiversity objectives, targets and strategies for your organisation. Targets must be science-based, consistent with national policies and informed by the best practice.**

When establishing your biodiversity targets and strategies, follow the mitigation hierarchy. The mitigation hierarchy is a framework for managing risks and potential impacts related to biodiversity and ecosystem services. It is comprised of a sequence of 4 steps:

- 1) avoidance: measures to anticipate and prevent creation of impacts;
- 2) minimisation: measures to reduce the duration, intensity and extent of the impacts that cannot be avoided;
- 3) restoration: measures to repair specific biodiversity features or ecosystem services damaged by project impacts that could not be completely avoided/minimised; and
- 4) offset: measures taken to compensate for significant adverse residual impacts that cannot be avoided, minimised or restored. You can use the [mitigation hierarchy tool](#) to understand this concept better. Do not be tempted to jump to offset/compensation measures right away. Prioritise targets that avoid and minimise impacts, and when not possible, explore the use of compensation mechanisms as a final step in the sequence.

There are different types of biodiversity targets that companies nowadays take:

- **No Net Loss:** under this concept, companies minimise negative impacts and drive positive impacts in order to create a balance where negative impacts do not outweigh the positive impacts on biodiversity.

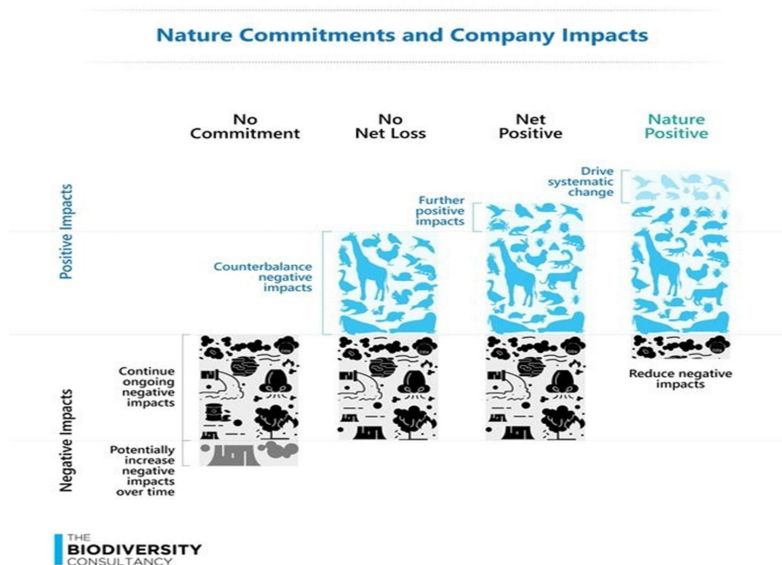
Please be aware that there are ethical and economic concerns regarding the No Net Loss approach among different stakeholders. Therefore, we advise you to concentrate on more robust and proactive biodiversity conservation strategies that prioritise avoiding impacts.

- **Net Positive:** with this commitment level, unlike No Net Loss, positive biodiversity impacts need to be over and above the negative impacts.

Increasingly more and more companies from the renewable energy sector are setting targets for achieving net positive biodiversity impact in their projects. See for instance examples from the RBC Agreement parties: [Biodiversity Policy by Orsted](#), [Biodiversity Commitment by Siemens Gamesa](#) and [Biodiversity Policy by Eneco](#).

- **Nature Positive:** this is the most ambitious level of commitment. In this commitment, companies actively reduce negative impacts compared to a baseline year and seek, where feasible, to create no new negative impacts, offset any remaining unavoidable negative impacts and partner with others to drive transformative change across land/seascapes, industry and society.

See the graph developed by the Biodiversity Consultancy to get a better understanding of these commitments.



- 3 Integrate biodiversity into policies and strategies and implement robust environmental management system.** Ensure that biodiversity is integrated into core business practices, including procurement, planning and project development.

See the [environmental policy template](#) developed by the International RBC Agreement for the Renewable Energy Sector for inspiration if you would like to draft a policy on this topic. Additionally, ISO 14001 provides guidelines for establishing and maintaining effective environmental management practices.

- 4 Build awareness about the relevance of biodiversity within your organisation.** Assign responsibility for implementing biodiversity policy throughout your organisation and ensure that top management has supervision and oversight for it. Train and educate your personnel on your policies.

- 5 Consult and engage stakeholders.** Check with employees, suppliers, customers, biodiversity and environmental organisations, NGOs, environmental rights defenders to see what you could do to address your biodiversity impacts. IUCN, the North Sea Foundation, WWF, Natuur en Milieu, The Biodiversity Consultancy are possible organisations to reach out to.

IUCN National Committee of the Netherlands and the North Sea Foundation are also members of the International RBC Agreement for the Renewable Energy Sector and they can potentially support you to gain more insight into how to address such impacts.

- 6 Learn from your peers.** Check what other companies from your sector are doing and how they are addressing biodiversity impacts.

An example from the RBC Agreement for the Renewable Energy Sector: Novar is conducting a [5-year project](#) on the effects of solar farms on ecology, including biodiversity impacts. From the wind sector, Agreement party SSE Renewables has developed a [toolkit](#) on biodiversity net gain. Orsted has also developed a [biodiversity measurement framework](#). Other examples from the solar sector could be LC Energy and TPSolar, who are active on this topic.

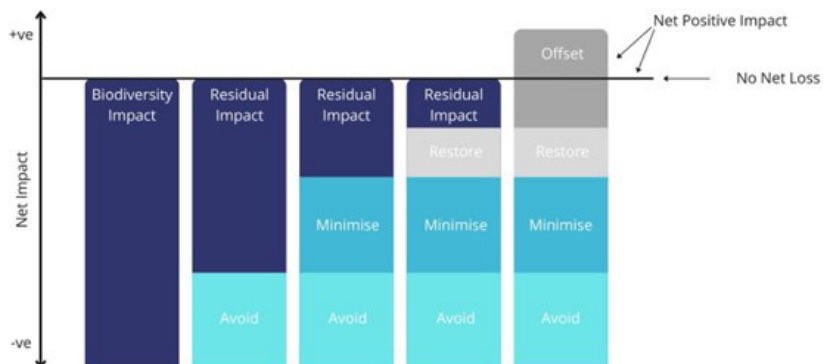
**7 Develop action plans to address biodiversity impacts based on your commitment level. This can include measures at project level, at company level, as well as at your value chain level. Possible non-exhaustive examples of such measures:**

At project level:

- Biodiversity is a complex matter and is very site specific. So, potentially you do not have this knowledge available in-house. Therefore, consider hiring and consulting a (local) ecologist to understand how your project will impact the biodiversity at your project site.

Specific to the solar sector, there is a collaboration between Wageningen University and the solar industry association Holland Solar, where they are jointly developing an **Ecologically Certified Solar Park Label**. This project examines how solar park design and vegetation management can improve the natural value and soil quality in new and existing solar fields. The results will lead to development of guidelines for the design and management of solar parks. Although these guidelines might not be applicable to all solar parks, they will provide you more insights about this topic.

- When assessing new projects’ potential impacts, always follow the mitigation hierarchy explained above – prioritising avoidance and minimisation measures. In the case of unavoidable impacts, collaborate with authorities and stakeholders (i.e. indigenous people and local communities) to develop suitable compensatory measures.



- Integrate an ecosystem-based approach into your due diligence mitigation measures. The ecosystem-based approach is a way to manage entire ecosystems, recognising that all their components are interconnected. Design your work in such a way that nature does not form an obstacle, but rather offers opportunities. For instance, create pollinator-friendly habitats by planting wildflowers and native plants around and under solar panels, design solar farms that allow for dual land use, such as agriculture or grazing beneath and around solar panels, design solar farms with wildlife corridors and buffer zones.

At value chain level:

- Include biodiversity requirements in your supplier code of conduct. This sends a strong signal to your supply chain that protecting biodiversity is expected from them.
- Prioritise sourcing raw materials from suppliers that adhere to sustainable practices (i.e. commitment to the [IRMA standard](#)). This includes selecting suppliers who minimise their impact on biodiversity, avoid sourcing from protected areas and implement measures to conserve biodiversity in their operations.
- Provide incentives for biodiversity conservation with your suppliers and (downstream) contractors. This can be offering long-term contracts, recognition schemes and etc.
- Build capacity / raise awareness of your suppliers and (downstream) contractors on biodiversity conservation/ biodiversity loss mitigation measures where relevant.
- Assess whether your purchasing practices contribute to adverse biodiversity impacts in your value chain and include shared responsibility for adverse biodiversity impacts in your supplier contracts where relevant.
- Collaborate with your suppliers and other stakeholders in industry-wide initiatives, funding conservation projects or supporting community-based conservation efforts. A good example from the sector is SSE Renewables' [Regional Eagle Conservation and Management plan](#) which contributes to the conservation of eagles in the Monadhliath Mountains in Scotland.

At internal company level:

- If you are a manufacturer, take biodiversity into account when designing new products. Consider avoidance and minimisation of environmental impact in the design phase for the complete life cycle (including end-of-life) of your product. Promote circularity (and life-time extension) to minimise mining needs.

For instance, [a study](#) financed by Vattenfall and Norwegian companies showed that painting one wind turbine rotor blade black, drastically reduces bird collisions.

Another example is collaboration between Vestas, Siemens Gamesa, Orsted and several other companies from Denmark that are taking part in the [DecomBlades](#) consortium. This consortium focuses on providing a basis for commercialisation of sustainable techniques for recycling wind turbine blades.

- Invest in research and development to create products that have a reduced impact on biodiversity throughout their lifecycle. This could involve developing biodegradable packaging, using alternative materials sourced sustainably or creating products that require fewer natural resources to produce.
- Create multi-functional green-blue spaces. Incorporating indoor plants, green walls or rooftop gardens, replacing stones with trees and other vegetation, digging water retention ponds can introduce biodiversity into office spaces, improve air quality and create pleasant working environments for employees.

You can follow the 3-30-300 rule, i.e. being able to see 3 trees from your window, having 30 percent tree canopy cover in the neighbourhood, and being located at not more than 300 metres from the nearest green space.

- Use Native Plant Landscaping. Designing outdoor landscaping with native plants promotes biodiversity, attracts pollinators and requires less maintenance than traditional landscaping. You can also establish bird feeders or insect hotels to provide habitats for wildlife. Consult an ecologist, gardener or landscape architect for specific advice.
- Integrate sustainable design features. Including sustainable building design when constructing or renovating office buildings, such as growing plants vertically on fences and walls, creating housing for birds, bees and other insects,

having vegetated roofs can help manage stormwater runoff, reduce heat island effects and create habitats for native species.

- Adopt wildlife-friendly policies. Implementing policies that support wildlife conservation can enhance biodiversity in office environments. This could include minimising and switching off outdoor lighting to avoid disrupting nocturnal wildlife, preserving natural habitats on company property, avoiding disturbance during breeding seasons.
  - Encourage company-wide biodiversity initiatives, e.g. give plants as gifts and appreciation, organise collective tree-planting events.
  - Join existing initiatives, such as the [Agenda Natuurinclusief](#) movement, the [Werklandschappen van de Toekomst](#) coalition, and get BREEAM NI certification.
- 8 **Set clear KPIs and periodically monitor your progress towards your objectives and targets and check whether your strategies are effective.** Communicate the results within your organisation and with your stakeholders.
  - 9 **Be transparent about your process and communicate on your progress and challenges.** Provide the public, workers and other relevant stakeholders with adequate, measurable, verifiable and timely information on your biodiversity impacts and progress against targets and objectives.
  - 10 **Provide for or cooperate in remediation to address adverse biodiversity impacts.** Make sure that the scope of your grievance mechanism allows complaints on environmental and biodiversity impacts, is open to external stakeholders and includes clear remediation processes for biodiversity losses caused or contributed by your entity. In cases when biodiversity loss is not caused or contributed by your entity, but linked to you through your supply chain, you are expected to use or build leverage to influence other entities causing or contributing such impacts to remediate them.

## 4 Useful readings:

- [Mitigating biodiversity impacts associated with solar and wind energy development: Guidelines for project developers](#) by IUCN and the Biodiversity Consultancy
- [Wind energy: Managing Biodiversity Risks](#) by the Biodiversity Consultancy
- [A cross-sector guide for implementing the mitigation hierarchy](#) by Cross Sector Biodiversity Initiative
- [Nature positive for business](#) by IUCN
- [Solar, biodiversity, land use](#) by Solar Power Europe



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