Mitigating Biodiversity Impacts Associated with Solar and Wind Energy Development

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COP 26, Nordic pavilion, 8 November 2021

Wind energy development and biodiversity

- Wind energy is one of the cleanest and cost-efficient energy sources
- The global wind power market saw its second largest annual increase in 2020, with offshore wind accounting for a record 10% of new installations
- Wind farm related decision have consequences in the long term (wind farms life span of 20-30 years)
- They have environmental effects and risks during the construction, operation and end-of-life phase (e.g. noise, habitat destruction, collision risks, displacement effects, etc).

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Phase 1: Mitigating biodiversity impacts from wind and solar energy

- In 2019, IUCN partnered with Électricité de France (EDF), Energias de Portugal (EDP) and Shell Group to promote the best available measures to mitigate biodiversity impacts associated with solar and wind power (on-shore and off-shore) developments.

- This phase has enabled the launch of a number of tools targeting the renewable energy industry.

- The work was carried out jointly with The Biodiversity Consultancy, and has involved BirdLife International, Fauna & Flora International, the Wildlife Conservation Society and The Nature Conservancy.

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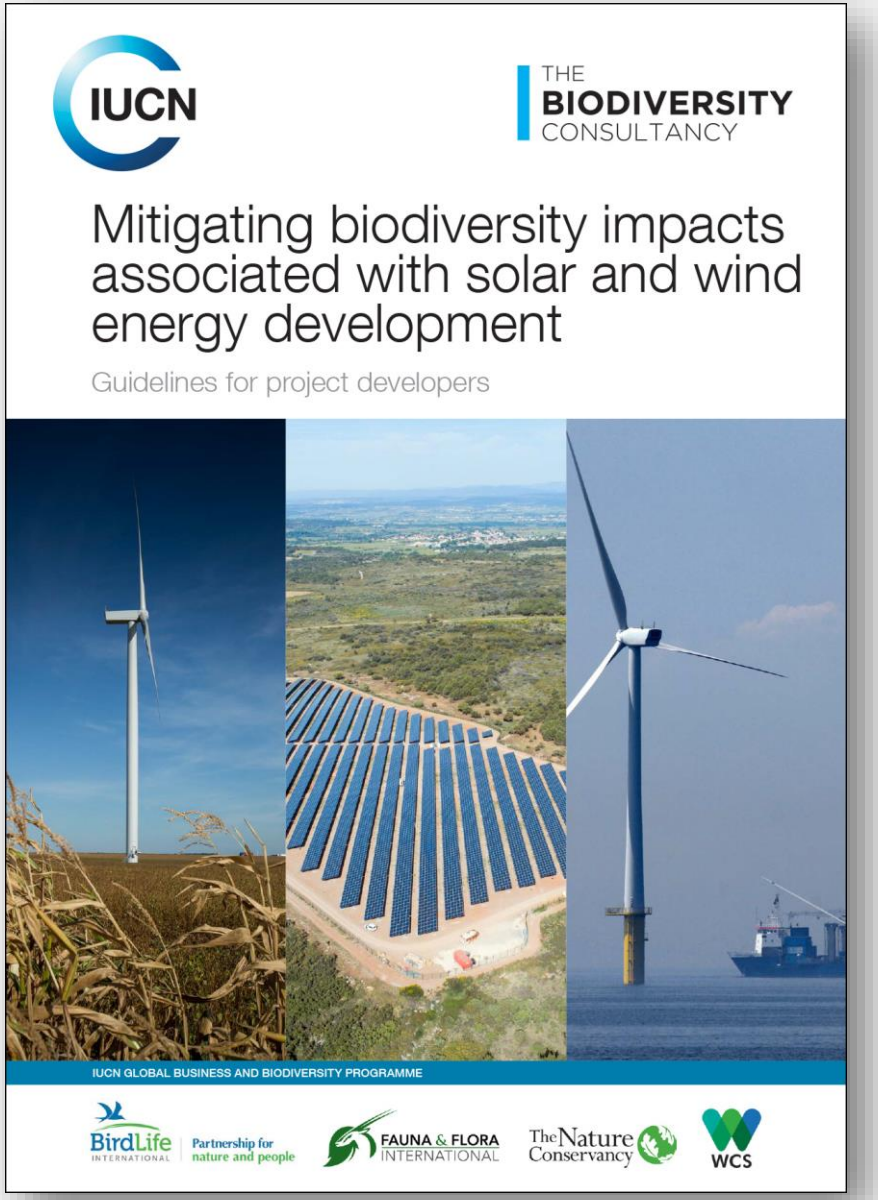
Knowledge products – Guidelines

- Support all actors to manage the biodiversity risks associated with solar and wind projects..
- Across the whole project development life cycle, from early planning through to decommissioning and repowering
- Using the mitigation hierarchy (avoid, minimise, restore and – where necessary – offset impacts) to provide a clear framework for planning and implementation.
    - Download the full report here (EN, FR, SP, PT, ZH): https://doi.org/fw2c



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Element of best practice

- Sensitivity mapping and early risk screening
- Iterative application of the Mitigation Hierarchy
- Landscape/seascape approach
- Consideration of indirect and cumulative impacts
- Measurable outcomes (no net loss/net gain) for priority biodiversity features
- Robust implementation plans for mitigation and (if needed) offsets
- Robust monitoring and adaptive management

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Cumulative impacts assessment

- Solar and wind energy projects often concentrate in particular areas where there is good resource, creating potential for cumulative impacts.
- Consider cumulative impacts, and not just the separate impacts of each individual development, because:
- Impacts that are considered minor at individual project level can add up to cause a significant effect;
- Impacts of different developments may interact, which may not be obvious without analysis;
- Assessment across projects and/or sectors may improve the planning and effectiveness of mitigation, showing up opportunities for co-ordination and collective action; and
- The project's own mitigation efforts could be affected by impacts from other developments.

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Phase 2: Spatial Planning

- Working towards an equitable energy transition and sharing lessons learnt.
- The priorities are:
  - Promote the need for assessing early on the cumulative impacts of renewable energy developments.
  - Demonstrate how renewable energy projects can operate in multifunctional areas with stakeholder consent
  - Promote the concept and tools to identify suitable areas for development.
  - Support a stronger demand for more responsibly produced raw materials necessary to produce renewable energy components.

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Phase 2

- As with phase 1 this process will be inclusive and involve active participation from:
- Renewable energy providers
- IUCN NGO member
- IUCN community and indigenous people members
- IUCN state members and regulators
- Financial sector

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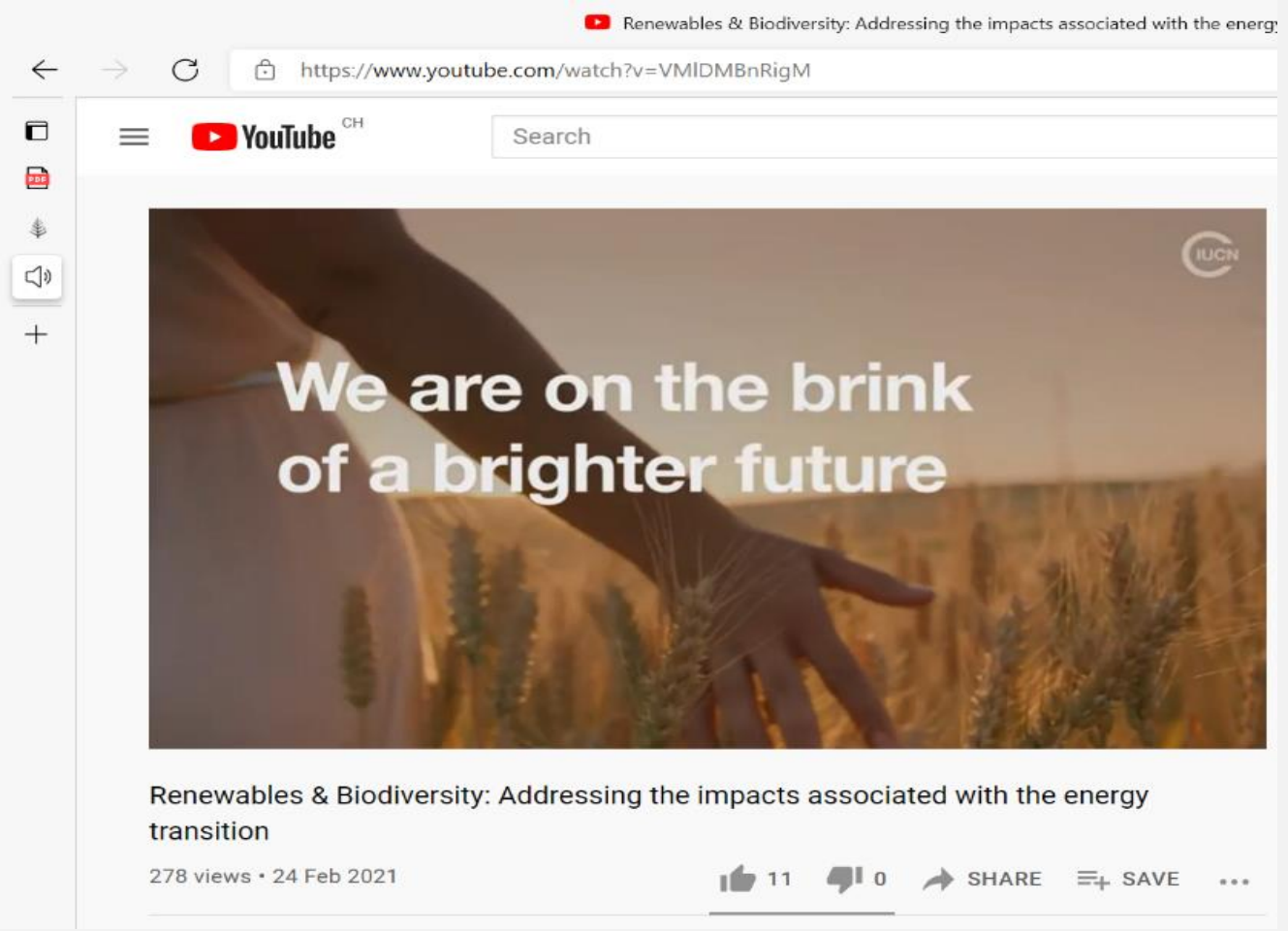
Watch our videos!

- Long: https://youtu.be/VMlDMBnRigM
- Short: https://youtu.be/nMwPWcgMreo



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Mitigating Biodiversity Impacts Associated with Solar and Wind Energy Development. Guidelines for project developers.

Jan-Willem van Bochove, The Biodiversity Consultancy

Key biodiversity risks from wind and solar developments

- Risk of intersecting with important bird and bat habitat and migratory corridors
- Critical to manage direct, indirect as well as cumulative impacts
- Important to account for the full development life cycle
- Risks overall lower than other forms of energy including fossil fuels, biofuels and hydropower

Vultures

Migratory soaring birds

Bustards

Bats

Marine mammals

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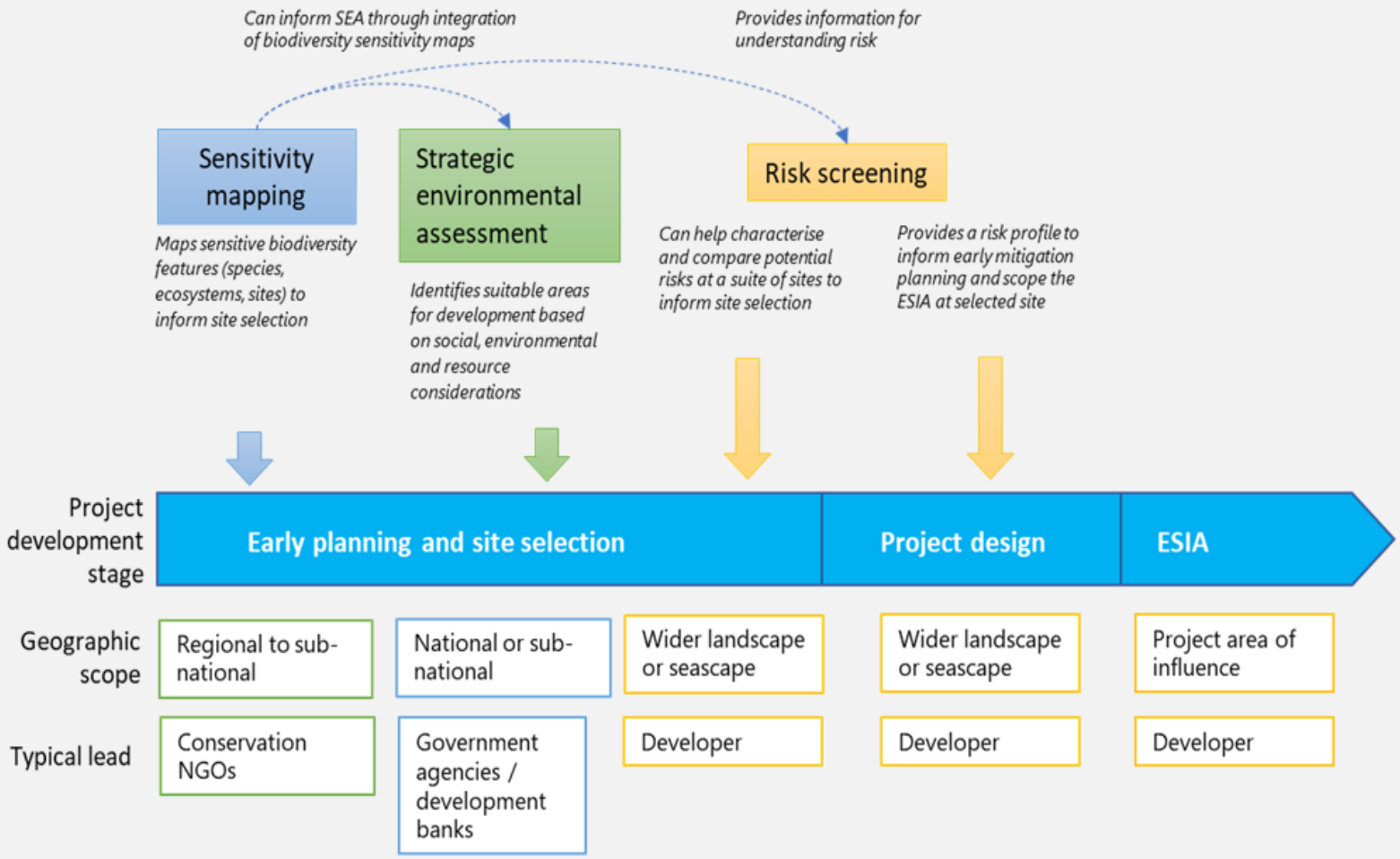
Early planning and screening to avoid impacts

- Most risks can be avoided through early planning
- Critical role of wider public policies and plans to identify suitable areas for development
- Need to account for social impacts that may arise from biodiversity mitigation



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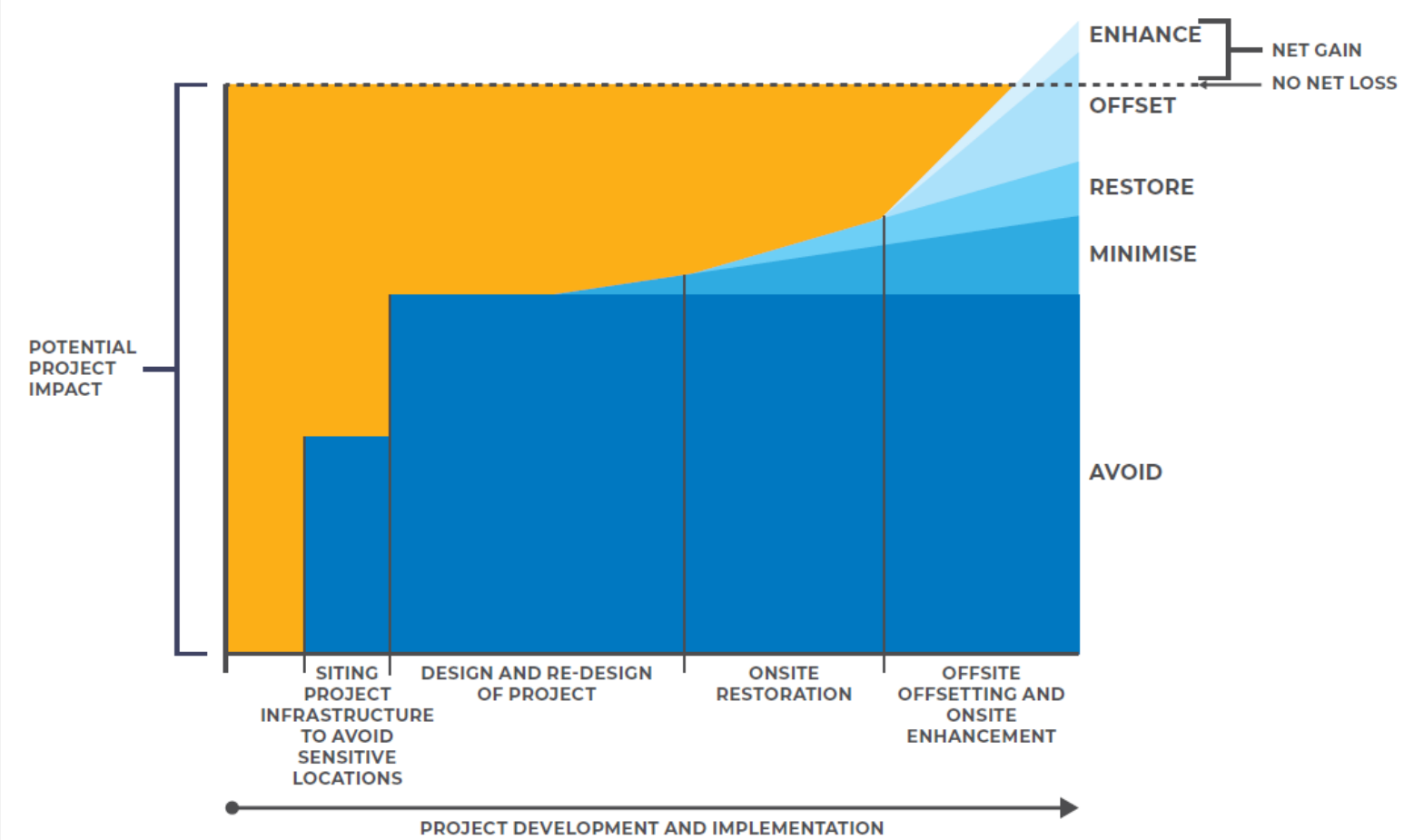
Applying the mitigation hierarchy to achieve positive biodiversity impacts



Potential for proactive conservation actions

- Often potential for proactive conservation actions to deliver positive biodiversity outcomes, including through nature-based solutions
- Repowering and decommissioning provide opportunities to undertake further mitigation
- Crucial to manage disposal of waste and recycling and reuse of infrastructure components including steel towers, blades and copper cables
- Some infrastructure components such as offshore wind farm foundations may be kept intact to continue to provide habitat enhancement benefits

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