

**2nd Meeting of the Task Force on Reconciling Selected Energy Sector
Developments with Migratory Species Conservation**
Bonn, Germany, 14-15 September 2017

Energy Task Force Research Priorities: Summary of Agenda Item 9 Research Gaps and Priorities



The Government of the Federal Republic of Germany, through the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) were recognized as Champion Plus for their generous support and commitment towards Reconciling Energy Sector Developments with Migratory Species Conservation for the period 2015-2017. The Energy Task Force has been funded with the contribution granted by Germany under the Migratory Species Champion Programme.



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Energy Task Force Research Priorities

The following research options were presented in plenary to the Energy Task Force (see [ETF2 Doc6](#)):

- **Workshop of knowledge gaps and research priorities** with experts to review and scope what we know about different renewable energy technologies and transmission lines, how they impact different species and how that knowledge varies between regions, in order to more rigorously identify future research priorities.
- **Cumulative impact tools and guidance** for developers and regulators to help them assess cumulative impact.
- **Review mitigation solutions for wind, solar and powerlines** (e.g. shutdown-on-demand) to identify whether there is sufficient evidence to promote particular solutions, and to identify knowledge gaps for further assessment.
- **Review energy impacts for stakeholder guidance**, requiring a synthesis to compare the information about the impacts of different renewable energy options, and the potential for mitigating species impact, to develop much clearer guidance for stakeholders to inform decision making.
- **Develop spatial mapping tools** to assess the potential risk of government commitments following the Paris agreement, and to help show governments how they can meet their commitments with minimal impact upon biodiversity.
- **Review impacts for the marine environment, to develop guidance and spatial mapping tools.** Undertake, in conjunction with AEWA, OSPAR, HELCOM, Bern Convention and others, research focussed on North and Baltic seas to: produce a sensitivity map for the region; a full review of impacts on biodiversity, and guidance on how to avoid them, of offshore wind energy; a list of information gaps and research priorities to be promoted among the research community.
- **Engage with CBD** process to provide input and guidance for current work on Mainstreaming in the Energy Sector, including promoting implementation of AEWA/CMS/EUROBATS guidelines.
- **Review species collision and electrocution risk with power-lines** using the same approach as the recently published review of collisions with wind turbines. This will enable the modelling of variation in collision and electrocution rates between species as a function of ecological traits, features of the power-lines and other factors, as a precursor to developing spatial planning and cumulative impact tools for power-lines to complement equivalent work on renewables.

Members were asked to suggest additional research priorities to this list, and to identify a top priority for action in the coming year. The following substantive additions were made.

- **Assessment of the impacts of renewable energy on ecosystem services** based upon potential impact on species and habitats. This would help inform assessments of potential impacts on local communities as well as wider economies.
- **Research and development of technical solutions** such as bird-friendly turbines/powerlines, which is related to the review of mitigation solutions.
- **Research on the ecology of vulnerable species** to improve assessments of their spatial / habitat requirements and potential for mitigating management / offsetting.
- **Further research on turbine and powerline collisions** as the likelihood of collision varies significantly with different conditions, time of day etc. This information could be used to inform shut-down risk / collision risk with powerlines/ requirements. With automatic camera / radar systems, the information is becoming available to undertake this work. Further work to identify which turbines/powerlines birds and bats collide with would also be useful.
- **Develop tools / guidance for stakeholder outreach** particularly to inform the financial risk associated with impacts of renewable energy upon species, and to improve capacity building of regulators and consultants. This could link to the assessment of impacts on ecosystem services.
- **How much of our energy needs can be met in 'safe' areas?** It is unclear the extent to which energy needs require the development of renewable energy in risky locations for biodiversity. This should be quantified to check the extent to which developments need to transit along the mitigation hierarchy.
- **Guidance for local communities** about biodiversity impacts and how to avoid them.

Upon consideration, Engage with CBD and Develop tools / guidance for stakeholder outreach and guidance for local communities were considered important components under communication / information exchange and strengthening networks, but were not considered research priorities. The following graphic highlights the suggested research options which received two or more recommendations.

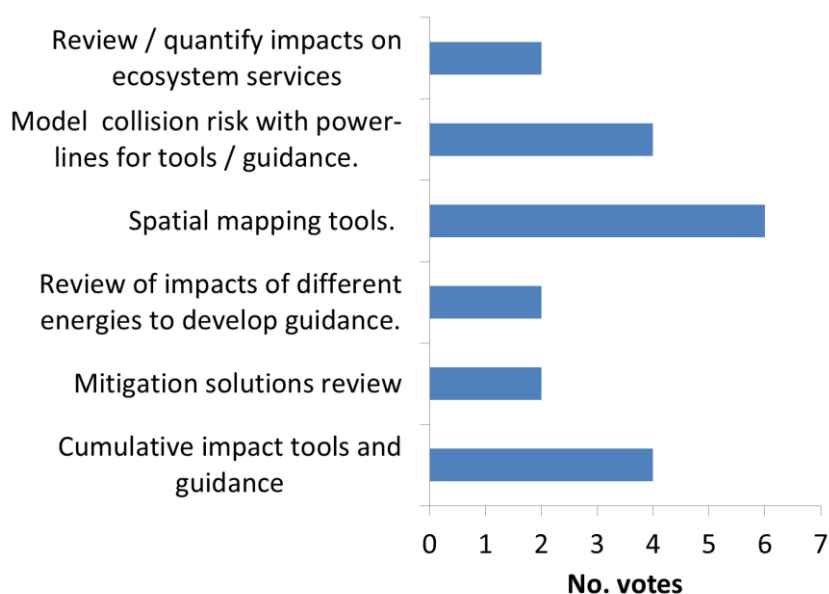


Figure 1. The level of support different research options received.

This suggests that the top priorities for the Energy Task force for 2018 should be to develop spatial mapping tools, to develop tools and guidance for cumulative impact, and to work on the risk of collision/electrocution with power lines.

The support for spatial mapping tools resulted from the recognition that the appropriate location of renewable energy development is the first step to minimising biodiversity impact. This is particularly a priority for African countries, where there is a need to guide the appropriate growth and expansion of energy. Although quantifying impacts of different was less prioritised, clearly a good understanding of potential impacts is ideally required to develop the most appropriate spatial mapping tools or regional assessments. There are strong links between the need for spatial mapping tools and the need to develop guidance for cumulative impact assessments, as a cumulative approach may improve assessment of the likely impacts of energy, and depending upon how it is conducted, may identify particularly important locations / populations to protect. Finally, there was widespread recognition of the value to consider not just renewable energy, but the potential impacts of transmission/distribution lines on migratory species as well. This may require some meta-analysis and review of the literature in order to produce equivalent strategic guidance and mapping tools that cover both power-line and renewable energy impacts together.