

A Policy Research Paper:

## Wind Energy and Biodiversity Conservation in Europe – Conflict or Convergence towards 2020?

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November 2010

Keywords: European Union policy; Wind energy; Biological diversity; Mitigation measures.

### Summary

*The European Unions policies for wind energy production and biodiversity conservation, both agreed in 2010 are based on a shared objective to alleviate climate change. However, the 2020 headline targets that accompany these policies have an underlying conflict that ultimately can undermine the overall policy objective: A four-fold increase in EUs wind energy production, while stepping up the halt and reversal of biodiversity loss and the degradation of ecosystem services e.g. by expansion of protected areas. It may seem as an obvious paradox; a catch-2020 where the risk of backfiring on the purpose of moving forward prevents any important progress for any of the targets. This paper reviews current policy frameworks targets, and identifies possible solutions to alleviation of climate change through better co-existence between wind energy and biodiversity in Europe.*

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### INTRODUCTION

Wind energy and biodiversity conservation is at a crossroads in Europe. Wind energy production shall increase four-fold in the European Union (EU) from 2010 to 2020 according to the World Energy Outlook 2009 <sup>1)</sup>, and meet a 20 % penetration level according to the EU Wind Energy Road Map 2020. This vision will increase focus on land, coastal and sea areas with optimal wind conditions. Such areas often overlap with landscapes and areas of international importance for flora and fauna, e.g. the Birds and Habitats Directives, and the EU's Natura 2000 network. In recent years this latent interest conflict between policies and targets for wind energy production and conservation of biological diversity (biodiversity) has led to a number of incidents in Europe, where plans for new wind farms have been delayed, halted or ultimately stopped. The EU Environment Council Meeting in March 2010 expressed its serious concern that both the EU and the global biodiversity 2010 targets have not been met,

and agreed further on a headline target of halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020.

It is paradoxical how the EU policy ambitions for wind energy and for biodiversity conservation have conflicting targets when they have a shared objective of climate change alleviation. This "Catch-2020", where the risk of backfiring on the purpose of moving forward prevents any important progress for any of the targets, may inevitably increase incidents where investments in new wind farms are brought to a stand still, which ultimately may favour climate change at the cost of wind energy penetration and biodiversity preservation in Europe

This paper reviews the recent policy development and identifies challenges to increase wind energy production without hampering biodiversity conservation targets for Europe. It also draws on the conclusions decided October 2010 in Japan at the COP 10 of the CBD to address a parallel global challenge for the wind industry.

## EUROPEAN WIND ENERGY ROAD MAP 2020

The Wind Energy Roadmap was published October 2009 by the European Commission (EC), in its Communication on Investing in the Development of Low Carbon Technologies <sup>2)</sup>, officially presented at the Strategic Energy Technology Plan (SET-Plan) workshop in Stockholm in 2009. It originates from the European Wind Initiative (EWI), one of the industrial initiatives proposed by the European Commission in its SET-Plan. The roadmap is set to become one of the most important instruments for the development of wind power in the 2010 – 2020 period, and to play a key role in fighting climate change in Europe, by achieving the following goals by 2020:

- A wind energy penetration level of 20%
- Onshore wind power fully competitive
- 250.000 new skilled jobs created in the EU by the wind energy sector

In follow-up to the roadmap, the SET-Plan High Level Steering Group requested the European Wind Energy Technology Platform (TPWind) to develop its Implementation Plan 2010 – 2012 <sup>3)</sup> with a set of predefined requirements. The implementation plan should cover the first 3-year period (i.e. 2010 – 2012) and will be revised every year, thus becoming rolling out programmes. The Implementation Plan 2010 -2012 was officially presented at the SET Conference in Madrid 3-4 June 2010. The wind energy roadmap priorities for 2010 - 2012 period focuses on the first steps towards the technology objectives and milestones stated by the European Communication on Investing in the Development of Low Carbon Technologies, and include four key-areas:

- New turbines and components
- Offshore substructures
- Grid integration
- Resource assessment and spatial planning

At first sight a possible link between the road map priorities and biodiversity conservation exists for one key-area; Resource Assessment and Spatial Planning. This area consists of three sub-programmes:

- Wind resource assessment
- Development of spatial planning instruments
- Public acceptance analysis

However, none of these sub-programmes integrates biodiversity directly, and elements of biodiversity such as birds, bats, plants, is not mentioned in the wind road map at all. Sub-programme 2 consists of two activities that may have

indirect links to biodiversity through spatial planning frameworks:

- Coordination process for onshore and offshore spatial planning in the framework of an integrated maritime policy
- Wind energy cooperation between Member States on onshore spatial planning in the framework of the National Action Plans implementation

But what is the relation to EUs parallel biodiversity vision and targets for 2020? And is it likely that these will be facilitated by spatial planning measures alone?

## EUs BIODIVERSITY VISION AND TARGETS FOR 2020

In 2010, the International Year of Biodiversity, the EU Environmental Council concluded at its Meeting, held 15 March 2010 <sup>4)</sup> that it is seriously concerned that the EU biodiversity 2010 targets have not been met, that biodiversity loss continues at an unacceptable rate entailing very serious ecological, economic and social consequences.

In response to its concerns, the Council has agreed on a long-term vision “that by 2050 European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored (...)” In support of this vision the Council further agrees on a headline target of “halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss”.

The Council also stresses that “the European Union will only achieve this vision and headline target if the means match the objectives; therefore it is essential to set ambitious, realistic, achievable and measurable sub-targets for different ecosystems, driving forces, pressures and responses, to ensure their integration into relevant internal and external EU sectoral policies and to promote the use of best practices (...)”.

Notably, the Council reaffirms that “protected areas and ecological networks are a cornerstone of efforts to preserve biodiversity” and “(...) stresses the need to fully implement the Birds and Habitats Directives, to speed up the completion of the Natura 2000 Network, both on land and at sea (...)”.

The Councils conclusions have an indirect relation to wind energy when it underscores “the necessity of stepping up efforts to integrate biodiversity into the development and implementation of other policies, (...) in particular those national and EU policies related to (...) energy, as well as spatial planning, transport, tourism, trade, and development”.

In consequence, the full implementation of the Birds and Habitats Directives and completion of the Natura 2000 Network will increase the regulatory barriers and limit the expansion of wind energy into onshore and offshore areas of Europe.

Finally, the Council emphasises the relevance of the results of the Convention on Biological Diversity (CBD), and other international negotiations on a global target and framework for tackling biodiversity loss, in setting EU action.

### **GLOBAL BIODIVERSITY POLICY - CBD COP 10**

In its conclusions from March 2010 the EU Council also called upon the European Commission and the Member States to submit an EU post-2010 Biodiversity Strategy in follow-up to the tenth meeting of the CBD Conference of the Parties (COP 10).

In the run up to the CBD COP 10 Summit, held 18 – 29 October 2010 in Nagoya, Japan, the preparations reflected a pessimistic status on the implementation of the recent global targets set for the 2002-2010 period. The background document Implementation of the convention and the strategic plan and progress towards the 2010 biodiversity target<sup>5)</sup>, states that “Most encouraging in achieving the 2010 target is the increase in protected areas, terrestrial and marine, though the latter is still far below the target. (...) Overall, actions to implement the Convention have not been carried out on a scale that is sufficient to achieve a significant reduction in the rate of biodiversity loss, particularly in view of the continuing pressures on biodiversity and their underlying causes.”

In the Executive Summary of the Global Biodiversity Outlook 3<sup>6)</sup> the conclusion is made unambiguous “The target agreed by the world’s Governments in 2002 - to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth- has not been met.”

The findings show that five principal pressures are directly driving the biodiversity loss;

- Habitat change
- Overexploitation
- Pollution
- Invasive alien species
- Climate change

These pressures are either constant or increasing in intensity. It is also emphasized that effective action to address biodiversity loss depends on addressing the underlying causes

or indirect drivers of that decline e.g. “Strategic planning in the use of land, inland waters and marine resources to reconcile development with conservation of biodiversity and the maintenance of multiple ecosystem services”.

The conclusions from the CBD COP 10 meeting<sup>7)</sup> consist of three inter-linked goals:

- A ten year Strategic Plan to meet the objectives of the Convention on Biological Diversity
- A resource mobilization strategy
- A new international protocol on access to and sharing of the benefits from the use of the genetic resources of the planet.

The Strategic Plan 2011-2020 of the Convention on Biological Diversity<sup>8)</sup> adopted by the meeting includes 20 headline targets, organized under five strategic goals:

- Address underlying causes of biodiversity loss
- Reduce pressures on biodiversity
- Safeguard biodiversity at all levels
- Enhance benefits provided by biodiversity
- Provide for capacity-building.

Among the headline targets, the Parties agreed to at least halve and where feasible bring close to zero the rate of loss of natural habitats including forests; Through conservation and restoration, Governments will restore at least 15 percent of degraded areas; Established a target of 17 per cent of terrestrial and inland water areas and 10 per cent of marine and coastal areas.

The new Strategic Plan states that “currently, some 13 per cent of terrestrial areas and 5 per cent of coastal areas are protected, while very little of the open oceans are protected. Therefore reaching the proposed target implies a modest increase in terrestrial protected areas globally, with an increased focus on representativity and management effectiveness, together with major efforts to expand marine protected areas. Protected areas should be integrated into the wider land- and seascape, (...) the ecosystem approach should be applied taking into account ecological connectivity and the concept of ecological networks, including connectivity for migratory species”.

It is now in the hands of the European Commission and Member States to develop a post-2010 Biodiversity Strategy and post-COP10 plan. The strategy is expected to include an impact assessment, which should establish the baseline for measuring the halt of biodiversity loss and its restoration, propose sub-targets and also identify the necessary, feasible and cost-effective measures and actions for reaching them.

## DISCUSSION

It is paradoxical how both the EU Wind Energy 2020 targets and the EU Biodiversity 2020 targets builds on a shared objective to alleviate climate change, without having any coordinated or mutually appreciative approach, but rather conflicting targets. The EU Wind Road Map does not address the need for more sustainable approach to landscape utilization and integration in order to contribute to biodiversity conservation. EUs Biodiversity vision and targets does not address the imperative need to support the expansion of renewable energies in order to combat climate change, one of five principal pressures to biodiversity loss according to CBD COP 10.

Hence, at the entrance to the new decade leading towards the 2020 milestone targets, the key question for wind energy and biodiversity conservation in Europe is: Can the EU and its Member States provide the necessary framework to achieve its 2020 wind energy targets to combat climate change, and simultaneously expand the network of protected areas (e.g. Natura 2000), combined with more restrictive land management, to stop the decline in biodiversity?

In recent years an increasing conflict between wind energy and biodiversity conservation has led to a number of incidents in Europe (and global), where plans for new wind farms have been delayed, halted or ultimately stopped. Such cases are mostly driven by public concerns from NGOs and neighbours over possible risks and harms to the environment, as well as by the application of the precautionary principle by planning authorities. The latter is illustrated by the fact that wind farms only exceptionally can be found located within Natura 2000 areas or in areas with similar regulatory protection.

Hence, conflicts between wind energy and biodiversity conservation will become more frequent towards 2020 throughout Europe unless EU address the challenge and launch policy actions to ensure better convergence between the two sets of targets.

Firstly, EU and its member states should apply a **mutually appreciative approach** for the upcoming revision of the Implementation Plan for the EU Wind Energy Road Map in 2011 and the revision of the EU biodiversity targets through the EU post-2010 Biodiversity Strategy. A mutually appreciative approach should explicitly reflect the shared objective of the two policy frameworks to alleviate climate change. As more areas are expected to be set aside to halt the loss of biodiversity, the planned 2020 wind targets can not be met through development of spatial planning instruments and coordination between sectors and states alone

as described in the EU's Wind Energy Road Map. Wind energy production must become more sustainable by explicitly addressing and incorporating measures to limit the negative impact of wind turbines on biodiversity such as birds and bats. The new EC Guidance Document on wind energy development in accordance with EU nature legislation <sup>9)</sup> could be an essential reference. Likewise, the EU post-2010 Biodiversity Strategy must recognize the positive role of wind energy production on the conservation of biodiversity by alleviation of climate change, a root cause for biodiversity loss, and help to define the measures necessary to support the expansion of wind energy in onshore and offshore areas in Europe.

Secondly, EU and its Member States should create incentives to promote **application of technological mitigation measures** to reduce or eliminate bird and bat strike risks in wind farms. It is imperative to have incentives targeted at ensuring more effective mitigation measures and operation practices at wind farms to optimize the integration of turbines into the European nature. Various technologies e.g. radars for bird and bat strike control have shown a relevant potential to be applied as mitigation measure; The United Kingdoms 2020 target is estimated to include 3,000 new wind turbines, that should only be built if they satisfy conservation laws intended to preserve bat habitats, and mounting radar devices could solve this problem according to an article in The Guardian <sup>10)</sup>. Hence, technological mitigation measures may be critical in order to identify new feasible locations for additional wind farms adjacent to or inside ecological networks such as Natura 2000 and protected species habitats.

Finally, EU and its member states should encourage **partnerships for best practice in sustainable design of wind farms** by supporting interdisciplinary and open collaboration between wind farm developers, organisations, research and specialists to engage in a more integrative approach to biodiversity conservation. It is noteworthy that despite the fact that Europe is a leading global agent in development of wind energy, there have been only few scattered partnerships on planning and design guidelines that integrate biodiversity. Already in 1994 a partnership was launched in the United States where The National Wind Coordinating Collaborative (NWCC) <sup>11)</sup> was established as a neutral forum for a wide range of stakeholders to pursue the shared objective of developing environmentally, economically, and politically sustainable commercial markets for wind power in the United States. Today, through its Wildlife Workgroup the NWCC identifies, defines, discusses, and through collaboration addresses wind-wildlife and wind-habitat interaction issues. Such an initiative may be valuable by serving as inspiration for fostering partnerships for more

sustainable wind energy in Europe. Here, the abovementioned EC guidance document can be a contemporary reference for such multi-stakeholder partnerships.

In conclusion, wind energy and biodiversity conservation is at a crossroads in Europe: One way is to tacitly accept this conflict illustrated through the catch-2020 paradox. This will neither lead to an increase in wind energy production or a halt and reversal of biodiversity loss in Europe. The other way is to pursue a more mutually appreciative approach and create incentives towards technological mitigation measures and better practice in sustainable landscape integration; This way will be a significant move towards the shared objective of climate change alleviation, where wind energy will not only become more sustainable, but also help to alleviate climate change - a principal course for biodiversity loss.

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