



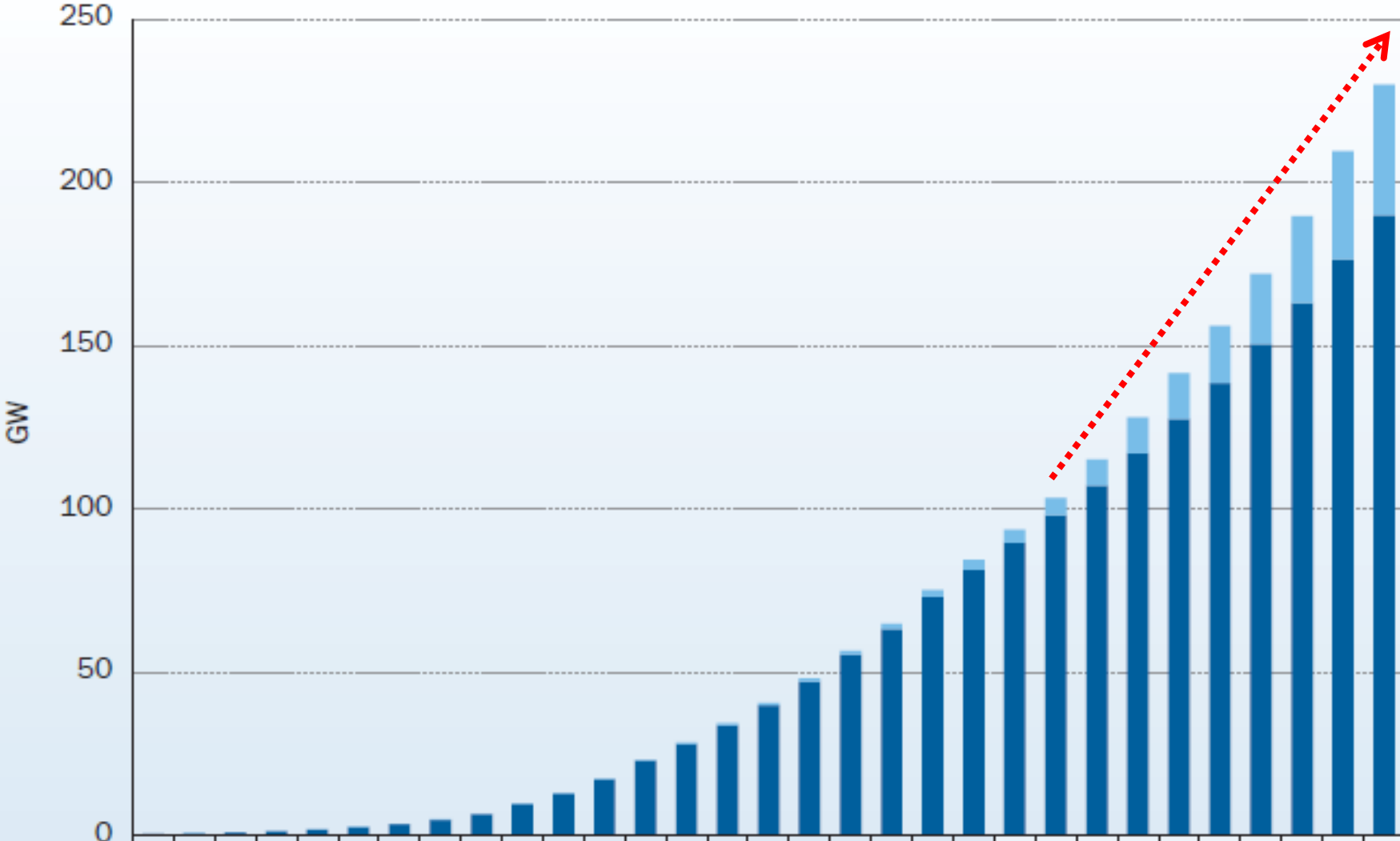
Duncan Halley  
Norwegian Institute for Nature Research, NINA



# Good Practice in Wind Power Development – reconciling wind power generation with environmental and social objectives



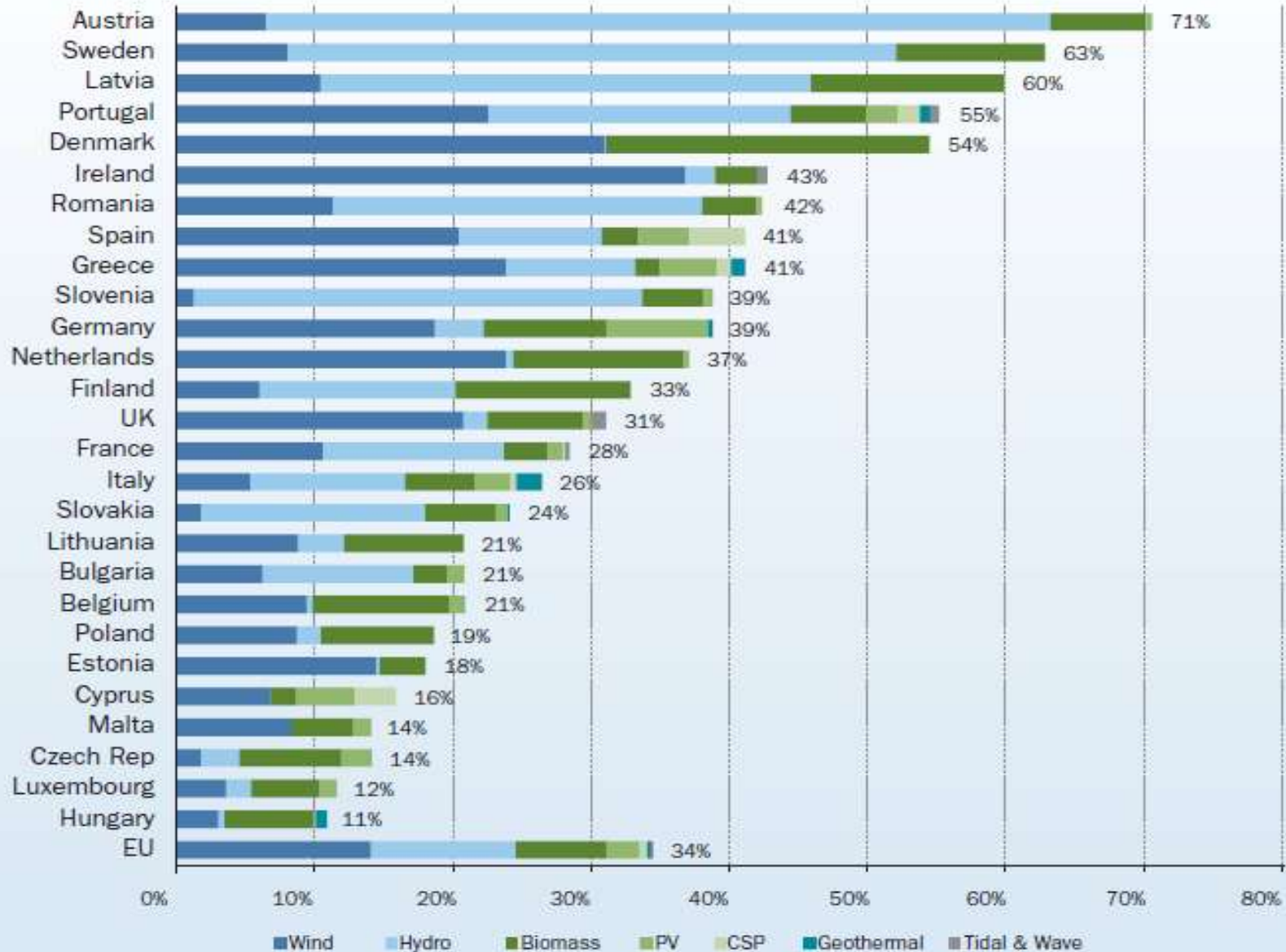
FIGURE 5.5 CUMULATIVE EU WIND POWER CAPACITY (1990-2020)



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Offshore	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.6	0.7	0.9	1.1	1.5	2.1	2.9	3.9	5.3	8.1	10.9	14.0	17.4	21.6	26.7	33.1	40.0	
Onshore	0.4	0.6	0.8	1.2	1.7	2.5	3.4	4.7	6.4	9.6	12.9	17.2	22.8	28.0	33.8	39.8	47.1	55.4	63.2	73.0	81.4	89.6	98.0	107.1	117.0	127.5	138.6	150.4	163.0	176.4	190.0
Total	0.4	0.6	0.8	1.2	1.7	2.5	3.5	4.8	6.5	9.7	12.9	17.3	23.1	28.5	34.4	40.5	48.0	56.5	64.7	75.1	84.3	93.6	103.3	115.2	128.0	141.5	156.0	172.0	189.7	209.5	230.0

**FIGURE 5.2 RENEWABLES' SHARE OF ELECTRICITY CONSUMPTION PER MEMBER STATE (%) IN 2020 ACCORDING TO THE NREAPs**

For full details see Annex 3.



Source: National Renewable Energy Action Plans

# Barriers

Figure 3.2.7: Barriers most frequently encountered barriers in EU-27



Source: DWIA and Fraunhofer ISI 2010, WindBarriers survey

Figure 3.2.8: Non-finalised projects in EU-27 onshore



# Rationale of the GP Wind programme



- Wind power is rapidly increasing as a proportion of the energy sector in Europe and large further increases are planned
  - It has been a major factor in meeting EU CO2 emissions reduction targets and RES targets
- BUT, it can conflict with other objectives set by society, e.g. social and environmental
  - Where it does conflict the consenting process usually becomes very much more **expensive** (typically measurable in € millions) and **lengthy** (typically measurable in years); and there is a significant chance of rejection
- **GP WIND was set up by the EU to address these *barriers* to deployment of onshore and offshore wind generation**

# Good Practice Wind



- The project worked from 2010-2013
- It was co-funded by the Intelligent Energy Europe Programme and coordinated by the Scottish Government
- It brought together 17 actors from industry, regional and local authorities, environmental agencies, NGO's and academia in 8 European countries
  - Scotland (UK), Norway, Belgium, Malta, Spain, Ireland, Italy, Greece





# Partners



Scottish Government  
Country: [UK](#)  
[More information](#)



SPEED Development Consultants  
Country: [UK](#)  
[More information](#)



SQW  
Country: [UK](#)  
[More information](#)



Provincia di Savona  
Country: [IT](#)  
[More information](#)



The Norwegian Institute for Nature Research  
Country: [NO](#)  
[More information](#)



SSE Renewables  
Country: [UK](#)  
[More information](#)



ScottishPower Renewables  
Country: [UK](#)  
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The Region of Western Greece  
Country: [GR](#)  
[More information](#)



Leitat Technological Center  
Country: [ES](#)  
[More information](#)



Agenzia ASEA Spa  
Country: [IT](#)  
[More information](#)



Royal Society for the Protection of Birds, Scotland  
Country: [UK](#)  
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ADEP S.A.  
Country: [GR](#)  
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APERe  
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Power Systems Laboratory,  
Aristotle University of Thessaloniki  
Country: [GR](#)  
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Comhairle nan Eilean Siar  
Country: [GB](#)  
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Projects in Motion  
Country: [IT](#)  
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Sustainable Energy Authority Ireland  
Country: [IE](#)  
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# Methodology & approach



- First identifying market barriers and process failures that have resulted in projects not proceeding efficiently
- Then sought examples of good practice that could be used to address these and which could be transferred to other regions and technologies.
  - These recommendations are based on:
    - surveys of key actors and stakeholder groups
    - detailed case studies of onshore and offshore projects analysed and presented with common methodology
- → This allowed for transnational comparison and examination of which approaches are suitable for transfer to other regions

# GP Wind Objectives



- **Build evidence based support** for design, planning and implementation of projects which are sensitive to environmental and community concerns.
- **Increase the consenting rate** for on- and offshore wind projects, and **reduce the processing period** for applications.
- **Increase the efficiency of processing applications** , thereby reducing process costs.
- Assist **quicker, more transparent and less costly deployment** of wind energy across Europe, contributing to the achievement of 2020 targets for renewable energy generation.
- **Secure endorsement** of project outputs by participating partner administrations and commitment to adopt relevant good practice.

## The Good Practice Guide The Good Practice Toolkit

Detailed examination of case studies, supported by peer review by partners from other regions and stakeholder consultation events.

# GP Wind online

[www.project-gpwind.eu](http://www.project-gpwind.eu)

## Good Practice Guide



### Minimising environmental impact

- HABITATS
- SEABIRDS
- TERRESTRIAL BIRDS
- MARINE SPECIES
- BIODIVERSITY
- UNDERWATER NOISE
- CUMULATIVE IMPACTS
- MITIGATION
- MONITORING
- PLANNING
- CARBON ACCOUNTING

### Optimising social acceptance

- COMMUNICATION
- INVOLVEMENT OF LOCAL COMMUNITY
- BENEFIT SCHEMES
- PROXIMITY TO HOUSING
- ENTRENCHED PERCEPTIONS
- ECONOMIC ACTORS

### Optimising (spatial) planning

- GENERALITIES
- COMMERCIAL ACTIVITIES
- TO ASSESS ENVIRONMENTAL IMPACT
- SOCIO-ECONOMIC IMPACT

## Good Practice Toolkit



### Online library

### Comparison by country

### Thematic Case Studies



# The Good Practice Guide



**GP WIND – Good Practice Guide**  
A new resource for reconciling wind energy development with environmental and community interests



[www.projectgpwind.eu](http://www.projectgpwind.eu)

- Includes ~70 recommendations supported by over 130 examples of good practices, which are collected in three categories:
  - Minimising environmental impact
  - Optimising social acceptance
  - Optimising spatial planning.

## Minimising environmental impact

- ★ HABITATS
- ★ SEABIRDS
- ★ TERRESTRIAL BIRDS
- ★ MARINE SPECIES
- ★ BIODIVERSITY
- ★ UNDERWATER NOISE
- ★ CUMULATIVE IMPACTS
- ★ MITIGATION
- ★ MONITORING
- ★ PLANNING
- ★ CARBON ACCOUNTING

## Optimising social acceptance

- ★ COMMUNICATION
- ★ INVOLVEMENT OF LOCAL COMMUNITY
- ★ BENEFIT SCHEMES
- ★ PROXIMITY TO HOUSING
- ★ ENTRENCHED PERCEPTIONS
- ★ ECONOMIC ACTORS

## Optimising (spatial) planning

- ★ GENERALITIES
- ★ COMMERCIAL ACTIVITIES
- ★ TO ASSESS ENVIRONMENTAL IMPACT
- ★ SOCIO-ECONOMIC IMPACT

# GP WIND GUIDE – Outputs



## Good Practice Guide

Examples of good practice



Dealing with environmental impacts: identifying and understanding potential impacts, design and implementation of projects, mitigation measures, and ongoing environmental management.

Process, including interaction with stakeholders, consultation, conflict resolution, partnership working.

Development and implementation of environmental and planning policy and guidance

Improving understanding of environmental issues and impacts.

Reconciling environmental concerns with the benefits of wind farm development: energy needs, CO2 reduction, social & economic benefits.

Engagement with local communities in the identification, planning and ongoing management of wind farms, including the role of community investment.

Integrated and speedy authorisation procedures

# The Good Practice Toolkit



The Toolkit gives you access to 4 categories of documents:

**A data base**, consisting of tools and guidance enabling you to assess some aspects of a wind energy project autonomously.

*Online library*

**The online library**, comprising more than 300 documents illustrating the good practices.

*Comparison by country*

**A Comparison by Country table**, which enables comparison between the 8 members of the consortium with regard to environmental and regulatory issues, as well as those related to local community involvement.

*Thematic Case Studies*

**The 16 Thematic Case Studies**, which served as the basis for the Good Practice Guide.



# GP WIND TOOLKIT – Outputs



## **‘How to’ toolkit**



Available online and for translation into different EU languages

Includes template conventions and specific recommendations for sound implementation, in order to facilitate the dissemination of best practices at local level

Provides valuable tools for policy makers, developers and administrative authorities, communities and environmental bodies in reaching the 2020 objectives within the context of wider EU policy objectives.

Scottish Natural Heritage

# Siting and Designing windfarms in the landscape

Version 1

December 2009



## Construction and landscape:

### The art of placing wind turbines harmoniously

In Europe, landscape concerns are the biggest single reason for public opposition to wind power development

This leads to a contested consenting process, which costs very significant amounts of time and money and can lead to refusal of consent



# Conference on Wind energy and Wildlife impacts

May 2-5 2011, Trondheim, Norway

## The first large international conference on wind energy and wildlife impacts

### Sessions

- Site selection, EIA, and pre- and post-construction studies
- Species-specific vulnerability and population effects
- Behavioural and spatial responses of wildlife
- Collision risk modelling
- Tools, methods and technology
- Mitigation and compensation
- Future challenges: offshore and onshore

### Time schedule/important dates

- 01.12.2010 Deadline for submission of abstracts
- 01.02.2011 Closing registration

### Keynote/invited speakers/session convenors

Tormod Schei  
Dr. Kjetil Bevanger  
Michael O'Briain  
Dr. Rowena Langston  
Dr. Mark Desholm  
Prof. Dr. Thomas Kunz

Dr. Elisabeth Masden  
Prof. Dr. Johann Köppel  
Dr. Edward Arnett  
Dr. Shawn Smallwood  
Dr. Andrew Gill  
Dr. Roel May



[www.cww2011.nina.no](http://www.cww2011.nina.no)

Partners



# Environmental impacts

Environmental concerns are the second important reason for public opposition to wind power development

These again lead to contested, time-consuming, and expensive consenting processes; with a significant level of refusals to permit construction.

# SPECIFIC RECOMMENDATION



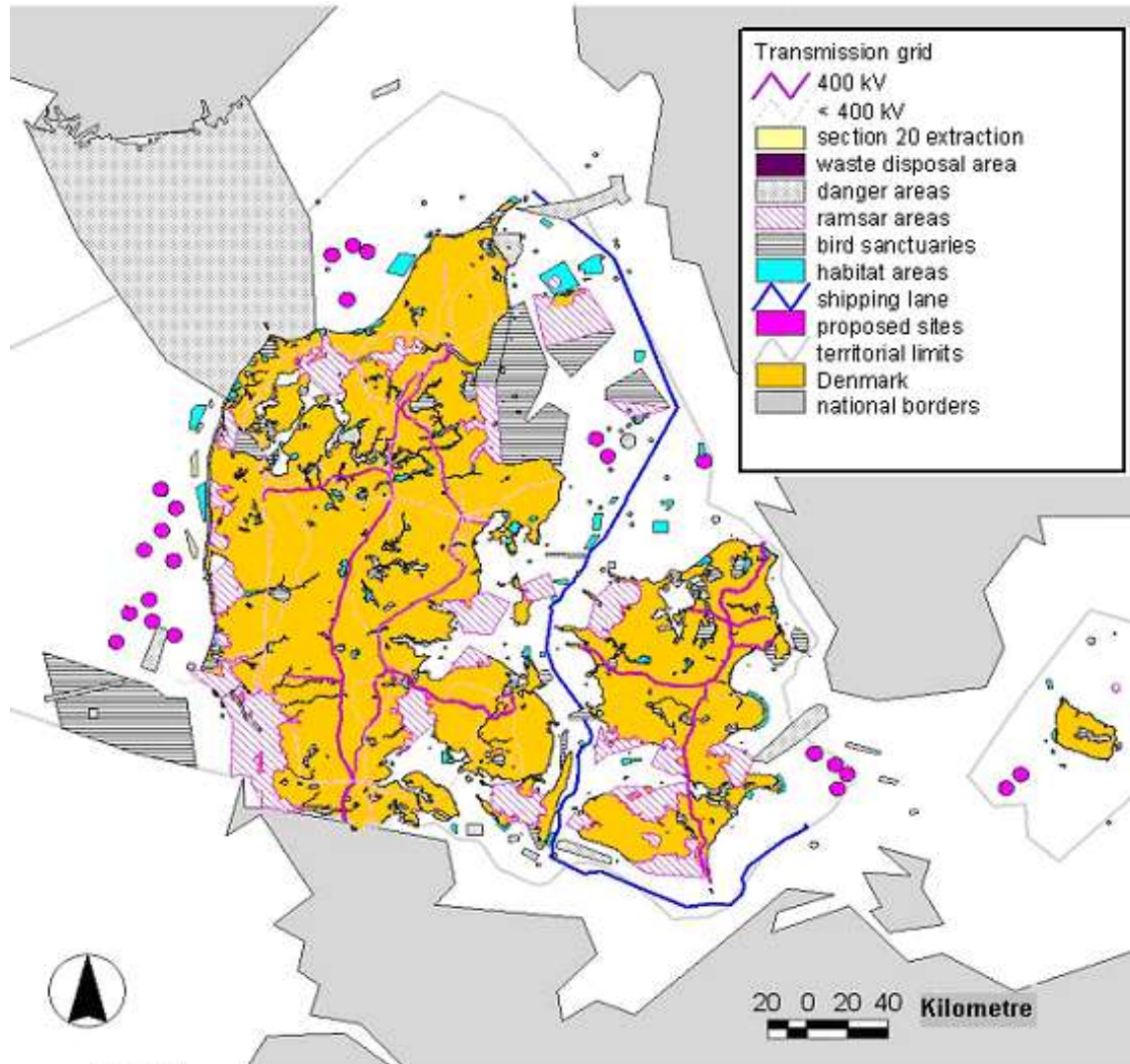
- **EARLY STRATEGIC PLANNING AND MAPPING**

**Adopting an early planning and mapping strategy**

A planning strategy at a regional or national level allows developers to identify early on areas which are unlikely to encounter major objections concerning impacts on landscapes or the environment. It is often useful for this work to be done on a national scale, as some of the most severe and frequently neglected impacts result from the cumulative effects of e.g. habitat loss at a national scale.



# EARLY PLANNING AND MAPPING BEST PRACTICE: THE DANISH APPROACH



## Indicative planning:

The Danish government has 'cleared' 23 sites (purple) for offshore wind power development.

These all have a good wind resource in economic terms and no major negative effects on other societal goals (e.g. landscape, transport, environment).

Developers can plan in these areas with confidence that there will be a straightforward, and so relatively inexpensive, process.

# Summary



- Wind power is rapidly increasing as a proportion of the energy sector in Europe and large further increases are planned
- It is renewable
- It can conflict with other objectives set by society, e.g. social and environmental
- Where it does conflict the consenting process typically becomes **very** much more expensive (measured in **€ millions**) and lengthy (measured in **years**); and there is a significant chance of rejection
- Evidence from Europe and elsewhere indicates that **indicative planning, sensitive siting and early (pre-application) consultations** with the local community and other stakeholders are the best way to avoid this
- This approach can create a **'win-win' situation**: better for developers, better for communities, better for landscapes, better for the environment
- Social conflicts are also much reduced with this approach
- Good Practice Wind provides practical tools to assist with reconciling renewable wind power, social, and environmental objectives to mutual advantage

# Thank you!

For more information:  
[www.project-gpwind.eu](http://www.project-gpwind.eu)