

RENEWABLE ENERGIES AND LANDSCAPE PROTECTION IN GERMANY


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- The German “Energiewende”
- Renewables and their impact on the landscape
- Instruments of nature and landscape protection in Germany
- Focus: wind energy and protection of nature and landscape
- Conclusions

- Goals of German energy and climate policy

		2020	2030	2040	2050
Climate	Greenhouse gases (vs. 1990)	- 40%	- 55%	- 70%	- 80 to - 95%
Renewable energies	Share of electricity	35%	50%	65%	80%
	Overall share (Gross final energy consumption)	18%	30%	45%	60%
Efficiency	Primary energy consumption	- 20%			- 50%
	Electricity consumption	- 10%	- 25%		
	Energy consumption in buildings	20% heat demand	80% primary energy		

- Wind power and photovoltaics will play the key role in future German electricity supply in Germany
- Current study* by the Federal Environment Agency shows a high potential for onshore wind energy in Germany
- In principle, 13.8 % of Germany's territory could be used for wind energy harnessing
- High potential also in the southern federal states

... but what about nature and landscape protection?

* Download: <http://www.umweltbundesamt.de/publikationen/potenzial-windenergie-an-land>

- We already live in a densely populated and intensively farmed area
- It's not a natural but a cultural landscape

Renewables and their impact on the landscape



Renewables and their impact on the landscape



Source: http://upload.wikimedia.org/wikipedia/commons/0/00/Brunnthal_Autobahnkreuz_M%C3%BCnchen-S%C3%BCd_Aerial.jpg

Renewables and their impact on the landscape



Source: http://www.erneuerbareenergien.de/files/smthumbnaildata/1500x/4/8/5/8/3/C21_EnBW_GB06_04_300dpi.jpg

- Each form of energy production has an impact on nature and landscape
- In the past the energy supply was centralised: big power plants and surface mining meant concentrated but massive impact on the landscape

Renewables and their impact on the landscape



Renewables and their impact on the landscape



- Renewable energy facilities are just a new element of our cultural landscape
- The targeted transformation to 100% renewables implies a decentralisation of energy production with many small power plants entailing a different impact on the landscape
- The impact of electricity production using hydropower, large-scale solar power and wind power on the landscape is highest in the alpine region

Renewables and their impact on the landscape



Renewables and their impact on the landscape



Source: <http://www.ibc-blog.de/wp-content/uploads/2012/12/Jura-Solarpark.jpg>

Renewables and their impact on the landscape



- No specific legal framework for nature and landscape protection exists for renewable energies
- No specific legal framework for the alpine region
- Legal framework for nature and landscape protection in Germany: Federal Nature Conservation Act and the nature conservation acts of the federal states
- Any intervention in nature and landscape must be compensated, either by compensatory measures or monetary compensation
- Spatial planning by federal states, planning regions and municipalities

- Protected parts of nature and landscapes under the Federal Nature Conservation Act are, in particular:
 - Nature conservation areas (*Naturschutzgebiete*)
 - National parks (*Nationalparke*)
 - Biosphere reserves (*Biosphärenreservate*)
 - Landscape protection areas (*Landschaftsschutzgebiete*)
 - Nature parks (*Naturparke*)
- Areas protected under the EU Habitats and Birds Directives must be protected as protected parts of nature and landscapes according to the Federal Nature Conservation Act
- Additional protection areas in regional planning, for example regional green belts

Wind energy and protection of nature and landscape

Protection areas	Total size	Number	Share of Germany's land surface
Nature conservation areas	1.3 mio. ha	~ 8,500	3.6 %
National parks	0.2 mio. ha (including North Sea and Baltic areas: 1.0 mio. ha)	14	0.5 %
Biosphere reserves	1.3 mio. ha (including North Sea and Baltic areas: 1.9 mio. ha)	16	3.7 %
Landscape protection areas	10.2 mio. ha	~ 7,400	28.5 %
Nature parks	9.5 mio. ha	104	27.0 %

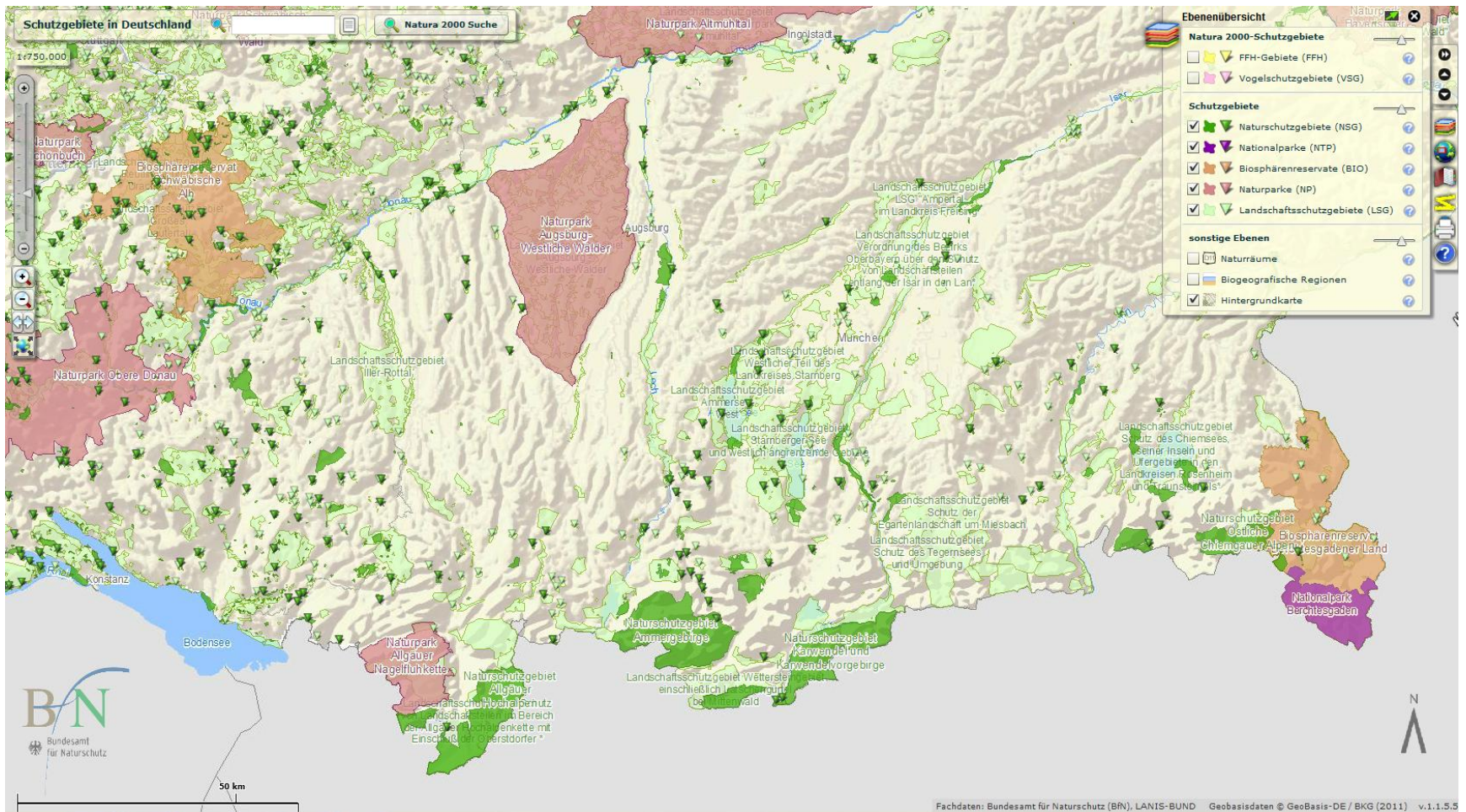
Data source: Website of the Federal Nature Conservation Agency

- Considered at a national level, the determined potential of onshore wind energy allows the conclusion that initially, the development of sites that are as little conflict-provoking as possible could be considered for a future expansion of onshore wind energy production
- In general:
 - There should be no wind turbines in nature conservation areas, national parks and the sensitive areas of biosphere reserves (core area and buffer zone)
 - In biosphere reserves (transition zone), landscape protection areas and nature parks wind energy harnessing might be possible, this depends on the purpose of protection
- In the end it's always a case-by-case decision which has to be made at the local level

- Outside settlements wind turbines are so called privileged projects
- This means the construction of wind turbines is usually allowed, if not contrary to other public interests
- Contrary public interests may be for example
 - Areas dedicated to future settlements by regional planning
 - Radar installations
 - Nature or landscape protection areas
 - Species protection
 - The designation of areas for wind energy use elsewhere

- Since wind turbines are privileged projects, planning authorities have to create substantial space for wind energy harvesting
- This may be easy in flat rural regions, but in mountainous regions with a lot of landscape protection areas this can be a big challenge

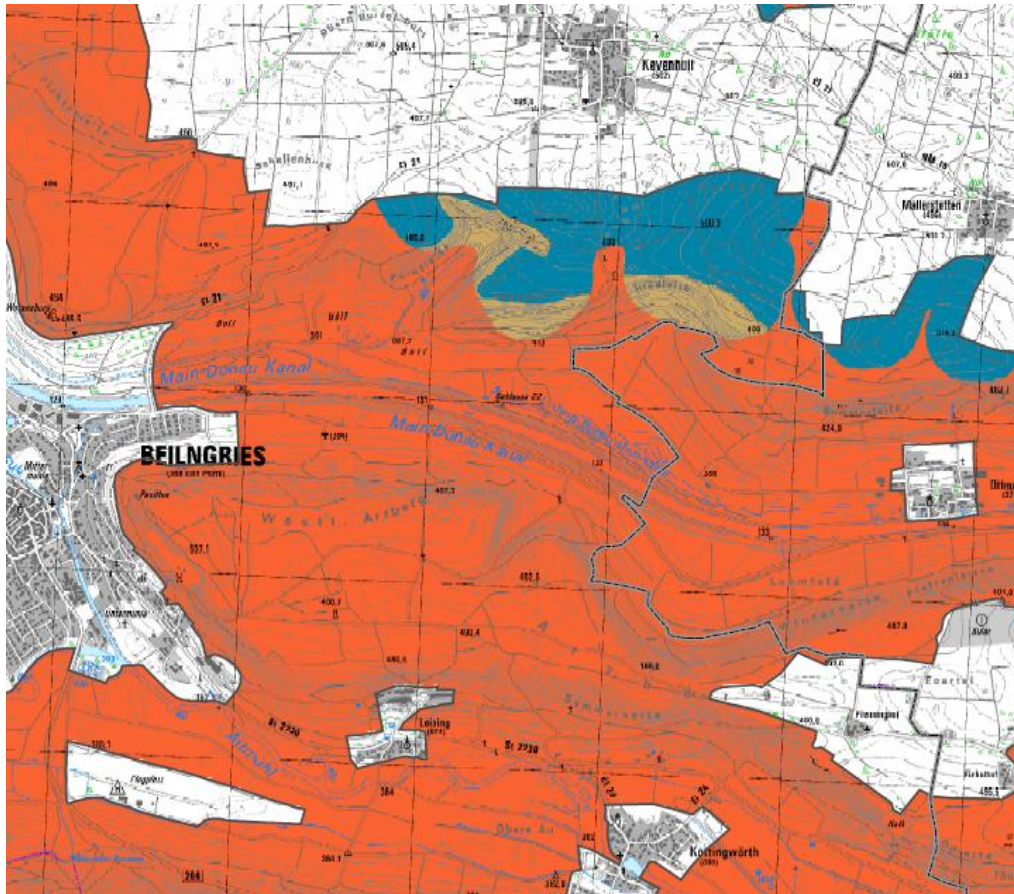
Wind energy and protection of nature and landscape



Source: Federal Nature Conservation Agency <http://www.geodienste.bfn.de/schutzgebiete/#?centerX=3658923.744?centerY=5320884.173?scale=750000?layers=636>

- Therefore it's necessary to differentiate landscape protection
- One new approach: special zoning concepts for wind energy
- Designation of selected areas for wind energy use within the protection zone in the Altmühltal nature park (Bavaria)
- Zoning is a recommendation that supports the further planning process, but the final permission for erection of a wind turbine remains a case-by-case decision




Wind energy and protection of nature and landscape





Source: http://www.landkreis-eichstaett.de/media/Zonierung/Verordnungskarte_NO_20130419.pdf

Legende

Zonierung

-  Ausnahmezonen für Windkraftnutzung gemäß § 3 Abs. 3 i.V.m. § 8 Nr. 3a der Verordnung (WKA bis 200 m sind in ausgewiesenen Konzentrationsflächen/Vorranggebieten zulässig)
-  Prüfzonen für Windkraftnutzung gemäß § 3 Abs. 3 i.V.m. § 7 Abs. 3 Nr. 2 der Verordnung (WKA bis 200 m können in ausgewiesenen Konzentrationsflächen/Vorranggebieten nach Einzelfallprüfung zugelassen werden)
-  Tabuzonen für Windkraftnutzung gemäß § 3 Abs. 3 i.V.m. § 6 Abs. 3 der Verordnung

Sonstiges

-  Naturpark Altmühltal
-  Naturpark Schutzzone (Landschaftsschutzgebiet)
-  Grenze Regierungsbezirke
-  Landkreisgrenzen

- Renewable energies are a new issue, we have to get used to their impact on the landscape
- Nevertheless nature and landscape protection is a very important matter, there are many protected areas which should not be influenced by renewable energy production
- But if we want to transform our energy supply to 100% renewables, it might be necessary to take a new approach to landscape protection

Thank you for your attention!

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