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# **Overview: where do we stand? What is built, what is planned?**

Bergen, 27 June 2013  
Theresa Schneider

# Agenda

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- Current situation: where do we stand and what is planned?
- Planning: strategic and combined?

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- Current situation: where do we stand and what is planned?
- **Planning: strategic and combined?**

# Subsea interconnection capacities in the North and Irish Sea<sup>1</sup>

Interconnection	Operational	Project	Expected to be operational in 2014	Total
NO-DK(W)	950	Skagerrak 1-3 • HVDC • 127 km • 1977/93/2009 700	Skagerrak 4 • Expected to be operational in 2014	1,650
NO-NL	700	NorNed • HVDC • 580 km • 2007	700	1,400
NO-DE			1,400	1,400
NO-UK		BritNed • HVDC • 260 km • 2010	1,400	1,400
UK-NL	1,000			1,000
UK-BE		Konti-Skan • HVDC • 149 km • 1965 (2006)/1988	1,000	1,000
SE-DK(W) • AC • 1973/85	740			740
SE-DK(E)	1,700			1,700
NL-DK(W)		IFA • HVDC • 45 km • 1986	700	700
Moyle • HVDC • 63 km • 2001	2,000		1,000	3,000
	1,000	Eastwest interconnector • HVDC • 261km • 2012	1,000	2,000
<b>Total</b>	<b>8,090</b>		<b>7,200</b>	<b>15,990</b>

<sup>1</sup> Sources: SEFEP, Priorities in the North Sea Grid Debate; ENTSO-E, TYNDP 2012  
All numbers in MW

# Subsea interconnection capacities in the Baltic Sea

Interconnection	Operational	Interconnection	TYNDP	Total
DE-DK	600	Kontek • HVDC • 127 km • 1977/93/2009	600	1,200
EST-FIN	350	Estlink • HVDC • 105 km • 2006		1,000
SE-DE	600	Baltic Cable • HVDC • 262 km • 1994		600
SE-FIN	1,350			1,350
SE-LIT		Fenno-Skan • HVDC • 233 km • 1989/2011	700	700
<b>Total</b>	<b>3,500</b>		<b>1,300</b>	<b>4,800</b>

# And the rest of Europe?



Source: The Guardian

## New interconnectors are being planned in the North Sea

Inter-connector	Capacity	Voltage	Length	Status	Operational	Comments
NO-NL NorNed 2	700	450kV	570km	Under consideration	Not likely before 2022	Not included in the NO NDP
NO-DE Nord.Link/ NorGer	1,400		520-600km	Design & permitting	2018	Statnett, KfW and TenneT signed cooperation agreement
NO-UK	1,400		800km	Design & permitting	2019-2020	Statnett and National Grid signed cooperation agreement, investment decision in 2014
UK-BE Nemo link	1,000	250kV	135km	Planning & permitting	2018	Submission of applications winter 2012/2013
NL-DK(W) Cobra	700	320kV	350km	Design & permitting	2018	Final investment decision to be expected in December 2014
UK-FR IFA2	1,000			Under consideration	2020	
UK-IE	1,000			Under consideration		

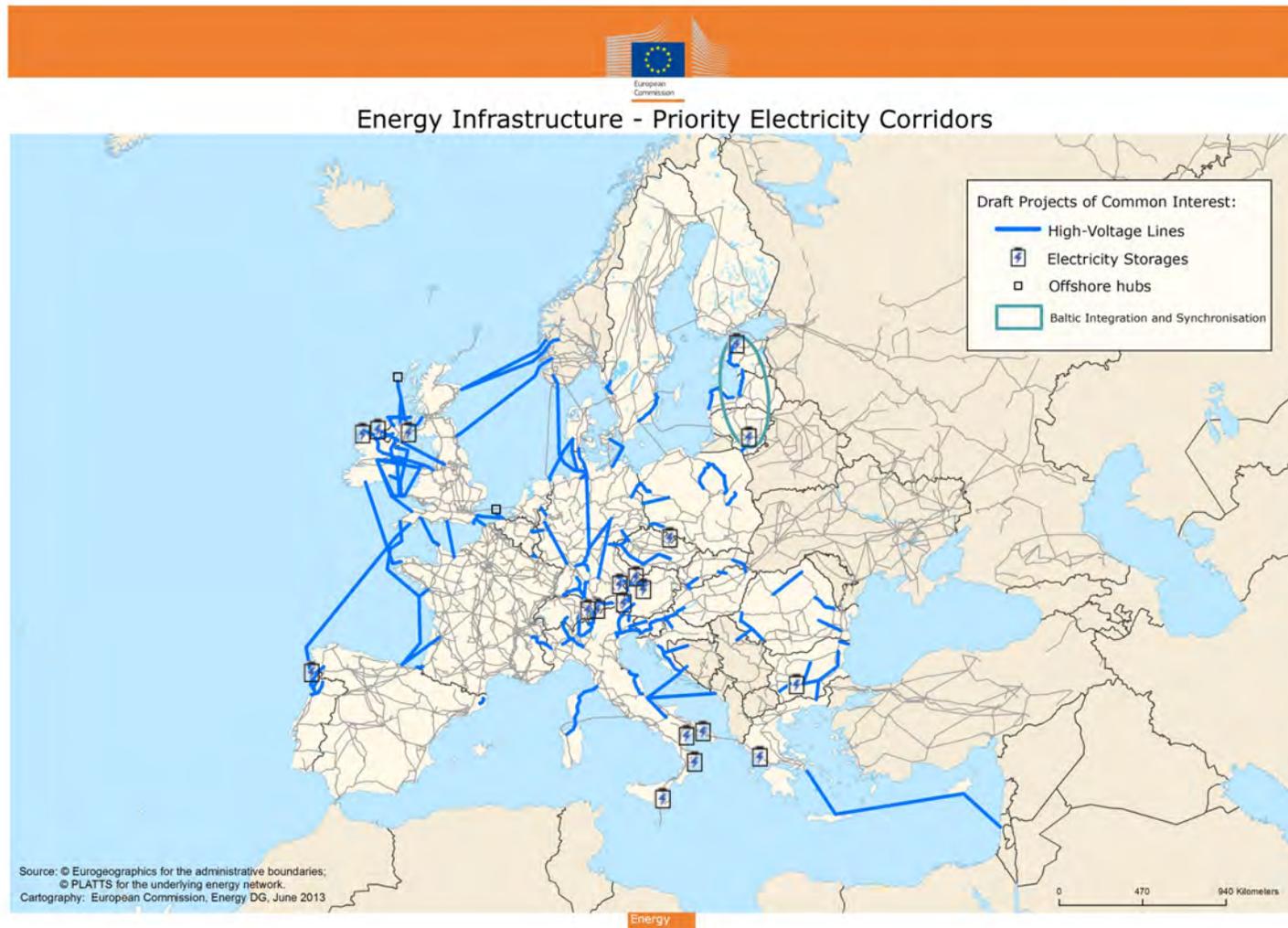
Source: TYNDP 2012

# New interconnectors are being planned in the Baltic Sea

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Inter-connector	Capacity	Voltage	Length	Status	Operational
Kriegers Flak Combined grid solution	600			Planned	
Estlink 2	650	450 kV	140 km	Under construction	2014
NordBalt	700	300kV	440 km	Design & permitting	2015

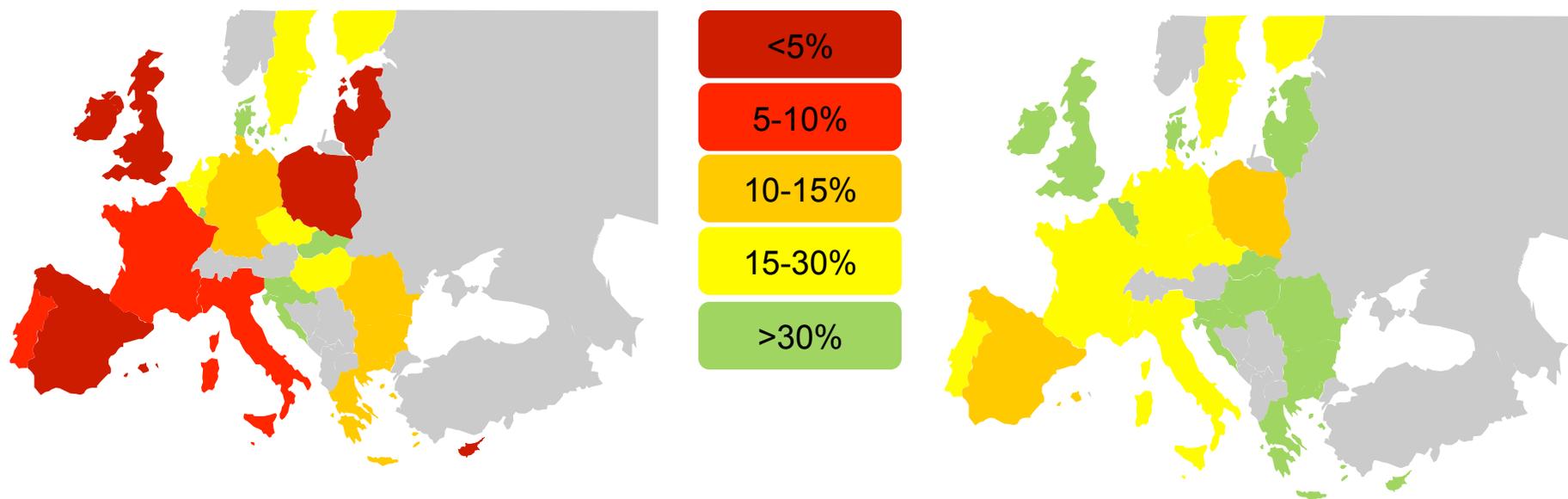
# The current status of PCIs contains many offshore grid projects



# Impact of PCIs – interconnection levels 2011 vs 2020+

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Import capacity/net generation capacity before and after PCI implementation – 2020+

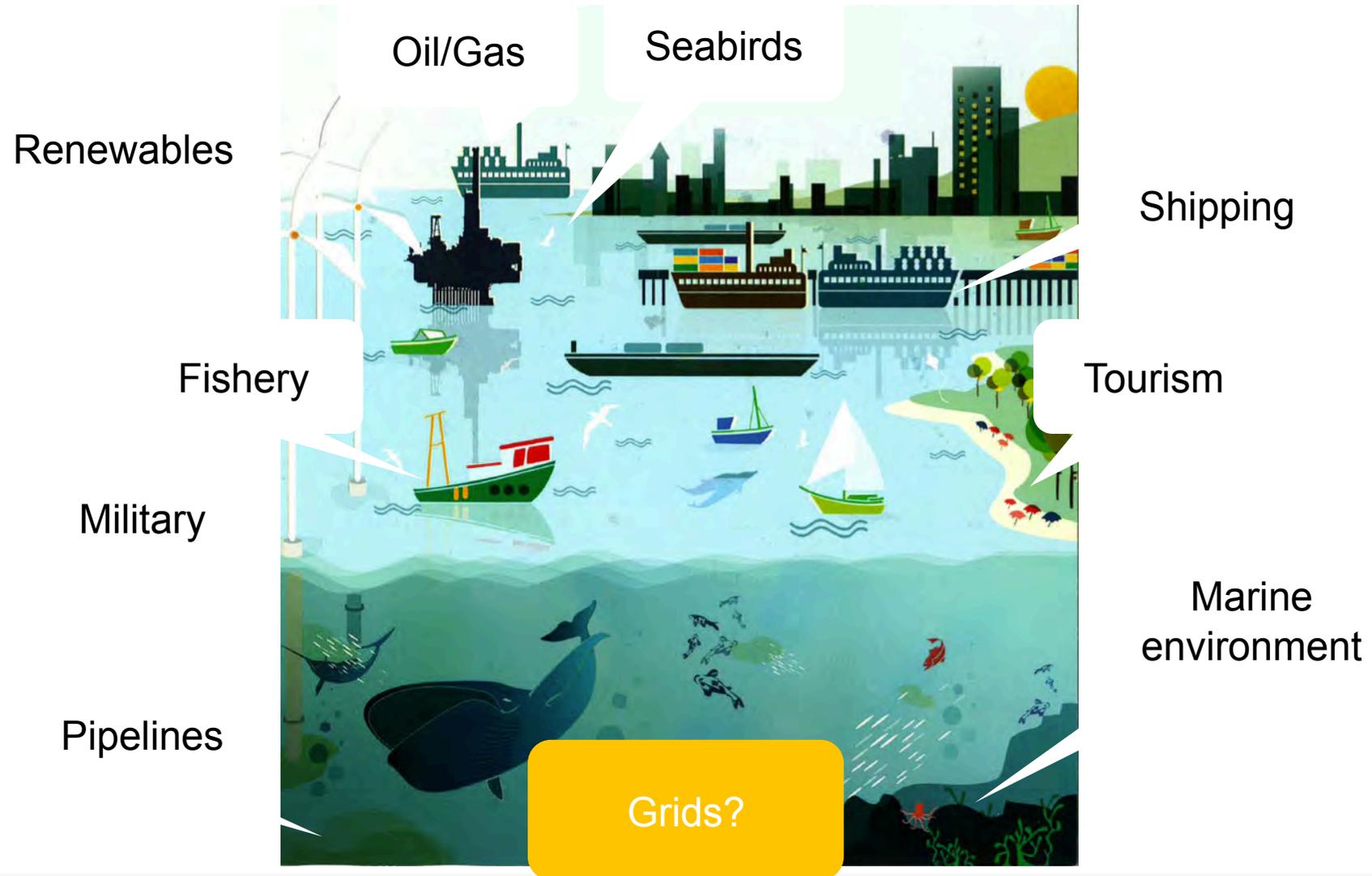


# Agenda

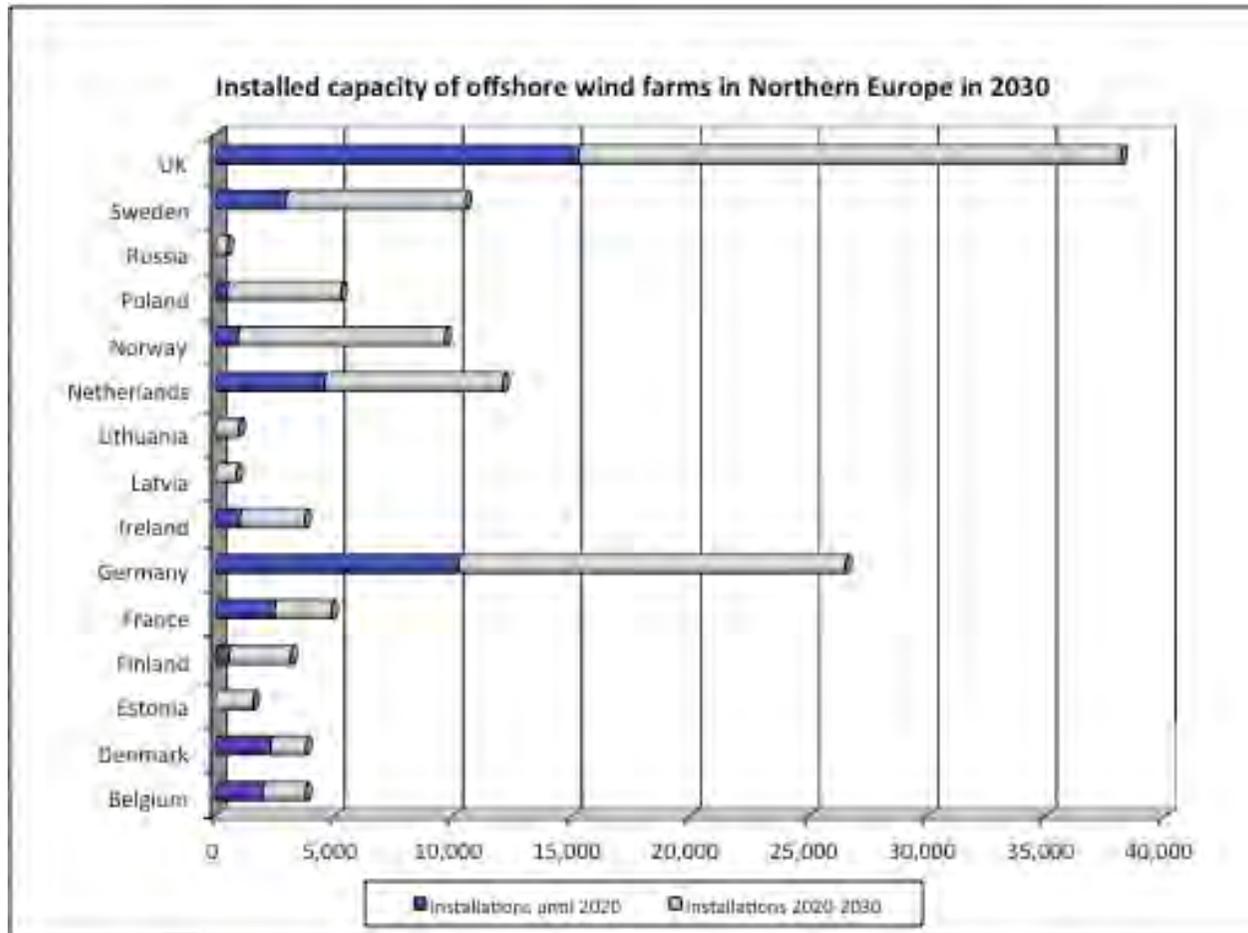
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- Current situation: where do we stand and what is planned?
- **Planning: strategic and combined?**

# The sea has many users



# And new users are developing considerably...



Source: EWEA

# How can different users be combined?

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Maritime Spatial Planning is a process for planning and regulating **all human uses of the sea**, which also sets out to **protect the marine ecosystems** in which these activities take place and **safeguard marine biodiversity**.

Certainty, consistency and sustainability

# New requirements will be introduced by the EC

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- MS: draw up maritime spatial plans, which will map existing human activities and identify most effective future spatial development
- MS: develop integrated coastal management strategies
- Minimum requirements: establish appropriate cross-border cooperation among them
- Planning details and determination of management objectives are left to Member States

# Who has experience in Maritime Spatial Planning?

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## Germany

- Spatial Plan for German Exclusive Economic Zone
- Introduced in 2008
- Conducted by Federal Maritime and Hydrographic Agency
- Including SEA and public consultation
- 2012: first offshore grid development plan (revised annually)
- Public consultation
- Scenario 2023: 2,115 km new cables (1,705 DC)

## Portugal

- National Strategy for the Seas (2006) defines principles for MSP
- Inter-ministerial Committee for Sea Affairs was created in 2007
- Public sessions, thematic workshops, public discussions of proposal

...other good practices?

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**Thank you!**

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