

IJP



INTERNATIONAL JOURNALISTS' PROGRAMMES

CLEAN

ENERGY

WIRE

Taking stock of Germany's energy transition:

**Is the *Energiewende* turning an economic backwater into an industrial powerhouse?
The case of northern Germany**

Media Workshop for journalists from the United Kingdom, the Netherlands, Finland and Scandinavia

4 - 6 October 2015, Bremen - Lower Saxony - Hamburg



At the recent G7 Summit in Elmau, German Chancellor Angela Merkel managed to prod G7 leaders into a commitment to decarbonise their economies by mid-century. Germany's *Energiewende* is meant to deliver on this very pledge – by building an energy system based almost entirely on renewables.

Today, almost a third of the German power mix is produced by renewables. And the continued build-up of PV, offshore and onshore wind parks is already having profound impacts, not only on utilities and grid operators, but also on the underlying fabric of the German economy.

Nowhere can this be witnessed more directly than along the German coast. The *Energiewende* is rapidly transforming the very face

of northern Germany, once the home of insolvent shipyards, dying industries, bankrupt municipalities and mass unemployment:

It is here that windmills are located in a density found in few other locations around the world. It is here that hundreds of farmers, citizen cooperatives and local savings banks are crowdfunding and investing in windfarms and solar parks.

And it is here that new industrial clusters of wind industry manufacturers, research labs and large-scale power consumers, such as aluminium smelters, are beginning to cooperate systematically.

The three-day media workshop will take stock of these developments and will ask:

- Is the resurgence of northern Germany as an economic powerhouse a self-supporting trend – or will it end as soon as support schemes for renewables have run out?
- Is there a future for energy-intensive industries in an energy system driven by wind and solar?

- What is the role of citizens? Having been the driving force for Germany's nuclear phase-out, are they now losing out on an energy transition increasingly shaped by dominant economic interests?

During the workshop we will visit key projects of the industrial renaissance in northern Germany, including factories and research labs. In discussions with policy-makers, industry representatives, citizens and energy policy experts we will try to understand what is driving this process and how robust it is.

And we will look at how ordinary citizens are shaping the Energiewende - as drivers of small-scale local investment or as rebels on the barricades, fighting onshore wind farms.

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- ➔ The travel **programme** in detail
 - ➔ **From A to O**: Background info on the programme
 - ➔ **Organisational** details and how to **apply**
 - ➔ About the **organisers**



The programme

Sunday, 4 October 2015

Participants travel to Bremen, organised by the IJP

3:00 P.M. *Welcome in Bremen and joint transfer to Bremerhaven*

4:00 P.M. **Landmarks of the offshore wind industry in Bremerhaven**

Overview of key infrastructure, logistics and harbour facilities at Europe's No. 1 offshore wind industry location

Guided tour and discussion with **Nils Schnorrenberger**, Managing Director of BIS Bremerhavener Gesellschaft für Investitionsförderung und Stadtentwicklung mbH (Bremerhaven Economic Development Company)

Location: Bremerhaven harbour

6:00 P.M. **Towards enhanced energy cooperation in the larger North Sea region?**

Objectives, legal and economic framework of the German Energiewende and the relevance of cross-border co-operation



Presentation and discussion with **Stephanie Ropenus**, Ph.D., Senior Associate European Energy Cooperation Nordics, UK at Agora Energiewende think tank

Location: Klimahaus Bremerhaven, Am Längengrad 8, 27568 Bremerhaven

8:00 P.M. **Welcome dinner**

Guests:



Jens Crueger, Member of the State Assembly of the Free City of Bremen, energy and environmental policy spokesman of the SPD (social democrat) parliamentary group
Karsten Behrenwald, Chair of the Bremerhaven chapter of IG Metall (metal workers trade union)

Location: Klimahaus Bremerhaven, Am Längengrad 8, 27568 Bremerhaven

Transfer to Hotel Haverkamp, Prager Straße 34, 27568 Bremerhaven

Monday, 5 October 2015

D 8:00 A.M. *Departure from Hotel Haverkamp*

8:30 A.M. **Industrial manufacturing: What it takes to make a business case for a new industry**

Visit to production facilities at Senvion SE, manufacturer of offshore wind turbines, presentation and discussion with **Norbert Giese**, Vice President Agency & Government Relations, Senvion SE



Location: Senvion SE, Labradorstraße 18, 27572 Bremerhaven

10:30 A.M. **Does investing in research and development make sense as a stimulus? How applied wind energy research developed in northwestern Germany**

Presentation and discussion with:



Dr Rita Kellner-Stoll, former Head of Department for the State of Bremen Senator for Civil Engineering, Environment and Transportation, founder of Kellner & Stoll Foundation for Climate and Environment, Bremen
Professor Andreas Reuter, Director of the Fraunhofer Institute for Wind Energy and Energy System Technology IWES Northwest
Location: Fraunhofer IWES, Grosse Westring 2, 27572 Bremerhaven

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Followed by
Visit to the Fraunhofer Institute wind technology test centre

1:00 P.M **Lunch**

2:00 P.M *Bus transfer to Ritterhude*

3:00 P.M **Integrating small-scale solar power generation into intelligent energy systems: Pioneers of decentralised combined PV-generation-and-storage systems**

Presentation and discussion with



Wolfgang Goltsche, owner of household-level pilot project and Town Councillor of the City of Ritterhude

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Holger Laudeley, Director of Laudeley Betriebstechnik GmbH

Location: Hamme Forum conference centre, Riesstr. 11, 27721 Ritterhude

Followed by

Visit to head office of Laudeley Betriebstechnik GmbH and its control technology for decentralised renewable energy facilities

5:00 P.M *Bus transfer to Rethem/Aller*

6:00 P.M **Buffet supper**

7:00 P.M **“Citizens’ Energiewende”: What’s in it for the locals? How energy policy is driven and thwarted, fuelled and blocked by citizen investors, NIMBYs and the taxpayer.**

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Panel discussion with



Christian Gresens, Vice Chairman Vernunftkraft e.V. (citizen initiative against wind parks)

Ernst-Ingolf Angermann, Member of the State Parliament of Lower Saxony, member of the working group on environment and climate protection of the CDU (Conservatives) parliamentary group, *tbc*

Marcus Bollmann, BUND Niedersachsen (Friends of the Earth Germany)

Cort-Brün Voige, Mayor of the City of Rethem/Aller, spokesman of the “Projektgruppe Erneuerbare Energien Aller-Leine-Tal” (*renewable energy project group in the Aller-Leine Valley*)

Moderated by

Kilian Rüfer, Founder and Director of Sustainment public relations agency

Location: Burghof Rethem, Lange Str. 2, 27336 Rethem

Transfer to Hotel Allershof, Lindenallee 4, 27366 Frankenfeld / Bosse

Tuesday, 6 October 2015

7:45 A.M. *Departure from Hotel Allerhof*

8:00 A.M. **The seminal conflict over nuclear energy: Fertile grounds for innovation? Renewable energy SMEs on the global market**



Visit to production facilities at Freqcon GmbH, a developer and distributor of electric equipment for electric grids, wind turbines, storage and monitoring systems

Meeting with Norbert Hennchen, CEO

Location: Freqcon GmbH, Bürgerwiesen Weg 5, 27336 Rethem

H 9:45 A.M. *Transfer to Hamburg-Bergedorf*

11:30 A.M. **Heavy metals in Hamburg, heavy winds in Schleswig-Holstein: The industry-science-politics alliance "NEW 4.0" for balancing power generation and power consumption**



Visit to the Technology Center Energy-Campus at the CC4E (Competence Center for Renewable Energies and Energy Efficiency)

Meeting with Professor **Werner Beba**, Chair of the CC4E Competence Center for Renewable Energies and Energy Efficiency at Hamburg University of Applied Sciences and Dr **Hans Schäfers**, Head of the Center for Demand Side Integration

Location: Technology Center Energy-Campus, Am Schleusengraben 24, 21029 Bergedorf

Lunch

1:30 P.M. *Transfer to Hamburg-Altenwerder*

J 2:00 P.M. **What does the Energiewende mean for energy intensive industries? TRIMET Aluminium SE and the case of a single company consuming one per cent of German electricity production**



Visit to the Trimet aluminium plant in Hamburg

Location: Aluminiumstraße, 21129 Hamburg

4:00 P.M. *End of the official programme and transfer to Hamburg main station*

From A to O: Background info on the programme



Facts about Bremen and Bremerhaven

A Bremen, together with Bremerhaven, is the second-largest German port city and – even before Berlin – the fifth-largest industrial location in Germany. In addition to the ports, the automotive and aerospace industries and the food industry play a significant role. As a city-state, the Free Hanseatic City of Bremen can directly determine German legislation via its representatives in the Bundesrat, the second chamber of the German parliament – on a par with much larger German states such as Bavaria or North Rhine-Westphalia. The Bremen state government is called the Senate and its president and cabinet members (Senators) are elected by the Bremen state parliament. Bremen is ruled by a coalition of the SPD (Social Democratic Party) and Bündnis 90/Die Grünen (Alliance 90/The Greens).

Bremen and Bremerhaven suffered from de-industrialisation and high unemployment for several decades. At almost 11 %, the unemployment rate is still well above the national average of 6.3%. However, the share of industry in gross value added is 27%, indicating a trend towards re-industrialisation. Wind energy plays an important role for Bremen's industry. The sector has been expanding since the 90s. In terms of installed wind power per unit area, the country has now a leading position within Germany.

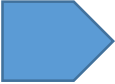


Agora Energiewende – think tank for energy politics

Agora Energiewende is an independent German think tank that initiates and commissions research on the Energiewende. It uses the results to define challenges in energy politics, present possible solutions and create a strategy for transforming Germany's electricity sector. Germany has legislated to exit nuclear power entirely by 2022, and to reduce greenhouse gas emissions by 80 to 95 % by 2050. In view of this societal and cross-party consensus, Agora Energiewende brings together experts and decision makers, and aims for maximum scientific input in discussing feasible policy measures without ideological commitments.

Agora Energiewende was initiated and is funded by two philanthropic foundations, Stiftung Mercator and the European Climate Foundation. It is a sister organisation of the Clean Energy Wire.

Dr. Stephanie Ropenus is Senior Associate for European Energy Cooperation with a focus on the Nordic countries. Prior to joining Agora Energiewende, she worked as a policy advisor at the German Wind Energy Association, dealing in particular with grid integration, from 2010 to 2014. She worked as a scientist in the field of energy economics at Risø National Laboratory for Sustainable Energy, Technical University of Denmark (today DTU) in Roskilde/Denmark. Stephanie Ropenus wrote her PhD in economics on "Distributed Generation in European Electricity Markets - Current Challenges and Future Opportunities" (Risø DTU in cooperation with the University of Southern Denmark).




Insights and perspectives on the future of wind energy in the northern region

Jens Crueger is a member of the State Assembly of the Free City of Bremen and the energy and environmental policy spokesman of the SPD parliamentary group. His political career began with his involvement in an environmental citizens' initiative in 2001 when he was only 17 years old. In the same year he joined the Green Youth and was elected to the State Executive Committee in 2002. He later quit his membership in the Green Party.

At the age of 26, after he graduated as a historian, Crueger became an assistant at the SPD regional office in Hamburg and soon joined the SPD in Bremen. His main political interests concern an increased use of renewable energies and the maintenance of biodiversity. It fits well that he is active in the Citizens' Initiative for the Conservation of the Wesermarsch in Bremen East (the wetlands at the mouth of the Weser river). Also, he is president of the German Association for Aquariums and Terrariums.

Karsten Behrenwald is Managing Director of the Bremerhaven Chapter of the *IG Metall* (Industrial Union of Metalworkers) which represents the interests of workers in the offshore industry. He also serves as a councillor in the City Assembly of Bremerhaven.

The **IG Metall** (Industrial Union of Metalworkers) is the dominant metalworkers' union in Germany, making it the country's largest union as well as Europe's largest industrial union. As a metalworkers' union, it represents workers both in carbon-intensive industries such as the automotive sector and in the growing wind industry – however, unionisation rates in classical industries tend to be far higher than in new sectors such as renewables. The IG Metall generally supports the Energiewende and the expansion of renewables in Germany. It emphasises that social welfare and workers' rights need to be an integral part of this process.



Senvion SE, manufacturer of offshore wind turbines

Senvion is a German wind turbine company founded in 2001, owned by New York-based private investment firm Centerbridge Partners. Senvion develops, produces and distributes wind turbines to suit almost any location, with a rated power ranging from 2 to 6.2 megawatts (MW). Senvion had a total installed capacity of over 285 MW in the first six months of 2015 in Germany alone. One of the largest players in the market for offshore wind, Senvion generated total revenues of 1,926 million EUR in 2014.

Senvion maintains its global operating headquarters and administrative centre in Hamburg. The assembly plant in Bremerhaven was opened in 2008.



The Fraunhofer Institute for Wind Energy and Energy System Technology

The Fraunhofer IWES is a large-scale research institute specialised in wind energy and energy system technology. It was founded in 2009 and has more than 500 employees currently working at different locations in Germany. The operating budget was 32.1 million EUR in 2014. Basic funding is provided by the state (the German public, through the federal government and the German states (*Länder*), "owns" the Fraunhofer Society), yet the bulk of the funding is earned through contract work, either for government-sponsored projects or from industry.

Increasing competition and a much more professionalised industrial environment have raised expectations for wind turbines dramatically in recent years. This is why the Fraunhofer IWES has set up a special entity that focuses on research in the wind energy sector. The Fraunhofer IWES Northwest offers industry-relevant research services to turbine manufacturers, suppliers, wind farm operators and power authorities on the full spectrum of technical wind energy utilisation issues.



Testing centre for windmill bearing structures operated by Fraunhofer Institute in Hanover, Copyright: Fraunhofer

Fraunhofer IWES' large-scale research facilities include the competence centre, "Rotorblatt" (rotor blade). Since June 2011, it features a test hall for research on rotor blades of up to 90 metres in length. The Hanover-based centre, "Tragstrukturen" (support structures), tests foundation structures with a scale of 1:10 - 1:3,5. The "Dynamic Nacelle Testing Laboratory" (DYNALAB) is the first in Germany to offer a large-scale test bench for complete nacelles. At present, Fraunhofer IWES Northwest employs around 130 scientists, administrative staff and 80 students in Bremerhaven, Bremen, Hanover and Oldenburg.

Wolfgang Goltsche, owner of a private home in the household-level pilot project "Die Sonne speichern", City Councillor of the City of Ritterhude

In Ritterhude, Wolfgang Goltsche owns what one can call a smart home: A PV-plant combined with solar storage. It enables solar power-producing homeowners to provide electricity reliably at night and on cloudy days. The technical equipment is provided by German firm Laudeley (description see below), while the German Ministry of the Environment provides public funding for the project "Die Sonne speichern" ("storing the sun"). .

Here is how the smart home works: Solar power from the domestic 4-kWh-PV system is first used to meet the household's own needs. Any surplus is stored in the battery system. It can load and unload using 1460 watts per hour. The system can automatically control all energy flows in the house. In this way, energy consumption is optimised. In the evening, at night and in the early morning, the storage supplies the household with power.

Whenever the battery is fully charged and the PV system is still producing electricity, the power is automatically distributed to other electrical appliances. The owner does not have to be at home for this, since the battery can switch on the dishwasher or laundry dryer via a smart plug. It is also possible to connect an electrical immersion heater to the storage unit to use surplus solar power for water heating. All of this increases the household owner's self-consumption and minimises the amount of solar power fed into the grid.

The household only needs electricity from the public grid if all reserves are depleted. According to Wolfgang Goltsche, however, this rarely happens. The household owner can control his consumption level via technological devices such as a smart app. The manufacturer, in this case Laudeley, conducts check-ups remotely. Besides independence from the public grid, the domestic power plant saves Goltsche up to 90 euros per month in energy costs.

Holger Laudeley, Director of Laudeley Betriebstechnik GmbH

The German firm Laudeley specialises in manufacturing PV plants for commercial as well as private use. In addition to its PV-plant manufacturing, a new business is emerging for Laudeley. Companies and household owners increasingly want domestic power plants and energy storage systems integrated into their office buildings or homes, enabling greater independence from the public grid. Laudeley's energy storage system is named "E3 DC" and is based on lithium-ion-batteries. Laudeley, founded in 1982, has more than 1,600 reference plants and currently operates 45 own plants. The company has three employees.

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Wind power in northern Germany

Wind power in northern Germany sounds like a true success story. But there are also numerous conflicts and contentious issues. These range from the consequences of offshore expansion for sensitive ecosystems and endangered species in the North Sea, or the acceptance of wind turbines by citizens (the controversy is known as "Verspargelung der Landschaft", meaning literally, *studding the landscape with asparagus*). Also, health issues are regularly raised in the discussion. The panel discussion will take a look at all these issues, and attempt to map the political debate on wind power in northern Germany.

A model project in the Aller-Leine Valley in Lower Saxony shows how communities and their citizens work together to make the Energiewende happen: Eight municipalities of the Aller-Leine Valley are promoting and driving forward the expansion of renewable energies. This is more challenging than it may sound, as this is a rural and economically weak region. However, the Aller-Leine Valley aims to become a "100 % Renewable Energy Region", with the goal of covering the power needs of its 75,000 inhabitants using only renewable energy. The initiative is based on a comprehensive energy concept and a very strong commitment of citizens. Its municipalities are even cooperating with Belgium's Luxembourg province, which has a similar project called "100 % RES communities".

Citizens' grassroots support is critical to making the Energiewende a success. The 100% renewable project in the Aller-Leine-Valley offers a broad mix of clean energy sources. This means many roofs covered with PV-plants, wind turbines in the landscape, biogas plants and geothermal heat. In many

cases, wind turbines are not owned by just one investor, but are installed and operated by community projects.

Freqcon, a developer and distributor of electric equipment for electric grids, wind turbines, storage and monitoring systems

Freqcon GmbH, located in Vethem (Lower Saxony), is an electronic engineering company that develops and produces control units for all electric components used in wind power generation. Freqcon's technology such as storage batteries, converters and special plant software can be found in wind turbines worldwide with a total capacity of 30 GW. The family-owned company has provided solutions for wind energy control systems since 1984 and currently has 20 employees.

A high level of renewable penetration of the power market requires sufficient energy storage capacity. This is why Freqcon is specialised in developing wind and solar battery storage. In order to feed power from wind and solar into a grid, the electricity be adapted to its line frequency, phase and voltage. Freqcon therefore develops converter controls and frequency converters for wind and solar. Moreover, special software enables plants to deliver stored power within minutes and even seconds. This ensures optimal plant performance and grid stability. Freqcon specialises in creating comprehensive packages for clients that manufacture or own wind turbines. These packages include not only wind software for remote plant monitoring and control, but also trained staff to fix problems directly within the turbine.

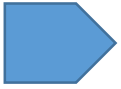
Competence Centre for Renewable Energy and Energy Efficiency and its Project "NEW 4.0"

"NEW 4.0" is a renewable energy initiative of the city-state of Hamburg and the state of Schleswig-Holstein. The letters "NEW" stand for *Norddeutsche Energiewende* (Northern German Energy Transition) and "4.0" refers to the so-called the fourth industrial revolution: the digitilisation of industry resulting from the smart networking of systems, an increasingly important component of the energy transition. The aim of the project is to facilitate a 100% sustainable energy supply for the region and its 4.5 million inhabitants by 2035.

What "NEW 4.0" wants to put in practice goes far beyond what the energy transition has accomplished so far. The idea is to cover not only the entire energy demand of the north, but also the energy needs of industry and regional buildings through renewable energies, mainly wind power. With an increasing number of wind farms, Schleswig-Holstein can already cover a reasonable amount of its energy demand using renewables. Hamburg, however, so far covers only 3% of its demand with renewables.

The challenge is to synchronise the fluctuating volume of wind power with the consumption needs of industrial plants, docks, airports, railway stations and entire cities. Using smart technologies, the project aims to perfectly harmonise generation, distribution, storage and consumption. With the help of modern networks and forecasting techniques, the fluctuating generation of wind farms can be adjusted to grid needs. Larger storage capacity and savings in terms of district power will play another important role in this flexible power system. According to the project initiators, "NEW 4.0" will create new market opportunities for companies involved and new jobs within the region.

Around 50 corporate and institutional partners from all sectors such as grid operators, public utilities, renewables manufacturers and research institutes have joined the initiative. The project has also applied for funding from the German Federal Ministry of Economic Affairs and Energy.



Trimet AG

Trimet AG is a German producer of aluminium. The family-owned company employs some 2,900 staff and had an annual turnover of 1.27 billion euros (2013/2014). Trimet took over the disused electrolysis plant in Hamburg with 270 electrolytic furnaces in 2006, thereby significantly increasing its production capacity. The plant covers some 400,000 square metres and employs 320 people. Annual production amounts to 130,000 metric tons of primary aluminium. According to media sources, Trimet's energy-intensive processes consume 1 per cent of total German electricity generation.

Organisational details

Who can apply?

The media workshop is open to journalists from Denmark, Finland, Norway, Sweden, the Netherlands and the United Kingdom.

How to apply?

A maximum of 20 journalists can join the media workshop. In order to apply please use the template on our website at <https://www.cleanenergywire.org/workshops/can-renewables-drive-reindustrialisation>. Please apply by 15 September at the latest.

We will inform you by 18 September whether your application has been successful.

What are the costs?

Participation in the media workshop is free of charge. All expenses including travel from a suitable airport/train station in your country, transport, food and accommodation during the workshop is covered by the organisers.

Please note that travel to and from the airport/train station in your country is to be paid for by participants individually. Please also note that participants will be accommodated in twin bedrooms.

What languages will be spoken?

Presentations during the workshop will be either in English or in German.

About the organisers

Clean Energy Wire

Transforming the energy system of the world's fourth largest economy has entered a new phase. Rapid growth of renewable energy and the broad consensus to phase out nuclear power have opened up new opportunities, added fresh challenges and increased complexity. The country's so-called Energiewende project changes not only markets and business models but reaches deep into society and well beyond Germany's borders.

The Clean Energy Wire provides well-researched, fact-based and unbiased information as well as support for international journalists reporting on the energy transition. We are convinced that quality journalism plays a key role in productive domestic and international debates, which are essential for a successful move to a low-carbon economy.

The Clean Energy Wire is committed to the highest standards in journalism. Our charter sets out the principles that govern our own work.

As an independent non-profit and non-partisan organisation, the Clean Energy Wire can offer its services free of charge thanks to its funders, Stiftung Mercator (stiftung-mercator.de) and the European Climate Foundation (europeanclimate.org).

- **Eva Freundorfer**
eva.freundorfer@cleanenergywire.org
Tel. +49.30.2844 902-17
www.cleanenergywire.org

International Journalists' Programmes (IJP)

IJP is a non-profit and economically as well as politically independent organisation for the promotion of young journalists. It was established in 1981.

The programmes are organised decentrally and have no administration. All programmes are organised by the members and board members of IJP, who themselves work as journalists or for media enterprises. The responsibility for the individual programmes lies with the respective coordinators, who belong to the executive committee of IJP. Board members are appointed on a volunteer basis. The executive board is selected in a meeting of the members.