

Germany's coal paradox

Determined switch from fossil fuels to clean, low-carbon energy meets skeptical critics

By Ronald Musoke

On the outskirts of Cottbus, a quiet small city in Germany's north-eastern state of Brandenburg is Drehnow, a village of about 800 people.

On this warm October afternoon, one sees a quiet, relaxed and affluent—looking community. In fact, it is one of the richest small villages in Brandenburg. Its roads are narrow but paved and neat. It has well-serviced guesthouses and restaurants as well as kindergartens, and a recently refurbished community fire brigade house.

It also boasts a park of dozens of giant white wind turbines that generate clean electricity for distribution across Germany and neighbouring countries.

Also not far away from the big blades of the wind turbines whizzing around several hundred metres in the sky is another large power plant – of solar. The 70.8MW LieberoserHeide Photovoltaic Park sits on a for-

mer military training ground for the Soviet troops, its 900,000 black solar panels stretching as far as the human eye can see.

In many respects Drehnow meets its billing as a representative of the future of Germany's energy transition vision—a dream which involves phasing out most of the country's coal and nuclear power plants to renewable energy sources. Its outlay of wind turbines are part of the 27,270 turbines that have been installed across Germany according to the German Wind Energy Association.

But to demonstrate the stark difference between the past and the future, our tour guide; Sebastian Zoep, makes us climb a tower hundreds of metres above the ground. Once on top one gets a perfect look at an expansive former coal mining operation.

This is Lusatia, a coal mining region near Drehnow. Until recently, Drehnow drew its livelihood from mining of soft coal known as 'lignite' from Lusatia. The sheer size of

the lignite mines is overwhelming and makes it easy to see why scientists often lump smoke from coal power plants into the category of greenhouse gases damaging the environment of the world – even if you might not understand how.

Although mining was halted a few years back and what are left are deep gaping pits full of stagnant dirty water which seeps out from underground, the landscape appears desolate and the soil is quite soggy from the continued leakage of underground water. In the distance, white smoke still billows ominously out of the giant grey chimneys of other coal plants; disrupting the clear blue sky, as it makes its way into the air.

Germany's paradox

This is the irony the German government has to deal with on a day-to-day level. Coal still contributes up to 40% of Germany's overall electricity supply. But our guide remains optimistically in the greens corner.

"There is no future for fossil fuels,"



Germany's Energiewende programme seeks to phase out coal plants like this one near Lusatia in a few decades. INDEPENDENT/RONALD MUSOKE

he says, "It is just a matter of time that the world switches to renewable energy sources."

But Dr. Anna Pegels, a senior researcher at the German Development Institute says Germany "is still engulfed in a kind of paradox."

Despite Germany's greening programme, she says, the European economic giant remains a major emitter of greenhouse gases.

To further complicate the situation are some fossil energy companies and associations that are protesting against the proposed closure of power plants. They cite big job losses.

Other critics say Germany is an industrialized nation with an energy-intensive economy and will one day inevitably turn around and get back to fossil fuels.

But Ernst Peter Fischer, the Deputy Director General for Globalization, Energy and Climate Policy in the Federal German Foreign Office, insists Germany's energy transition programme is irreversible.

"Germany will switch to renewable energy," he says.

Fischer says the country has already shown that a modern open industrialised society can grow and at the same time strongly reduce greenhouse gas emissions.

As a result, Germany saves close to €100b every year in import substitution for fossil fuels that the country no longer has to import.

Finally, other critics of Germany's greening programme are convinced but frustrated by what they see as a "slow rate." They say the rate at which Germany has been cutting back on greenhouse gas emissions has been too slow and pointed out that Germany's Climate Action Plan does not include a concrete measure on how and when Germany will withdraw from coal powered electricity.

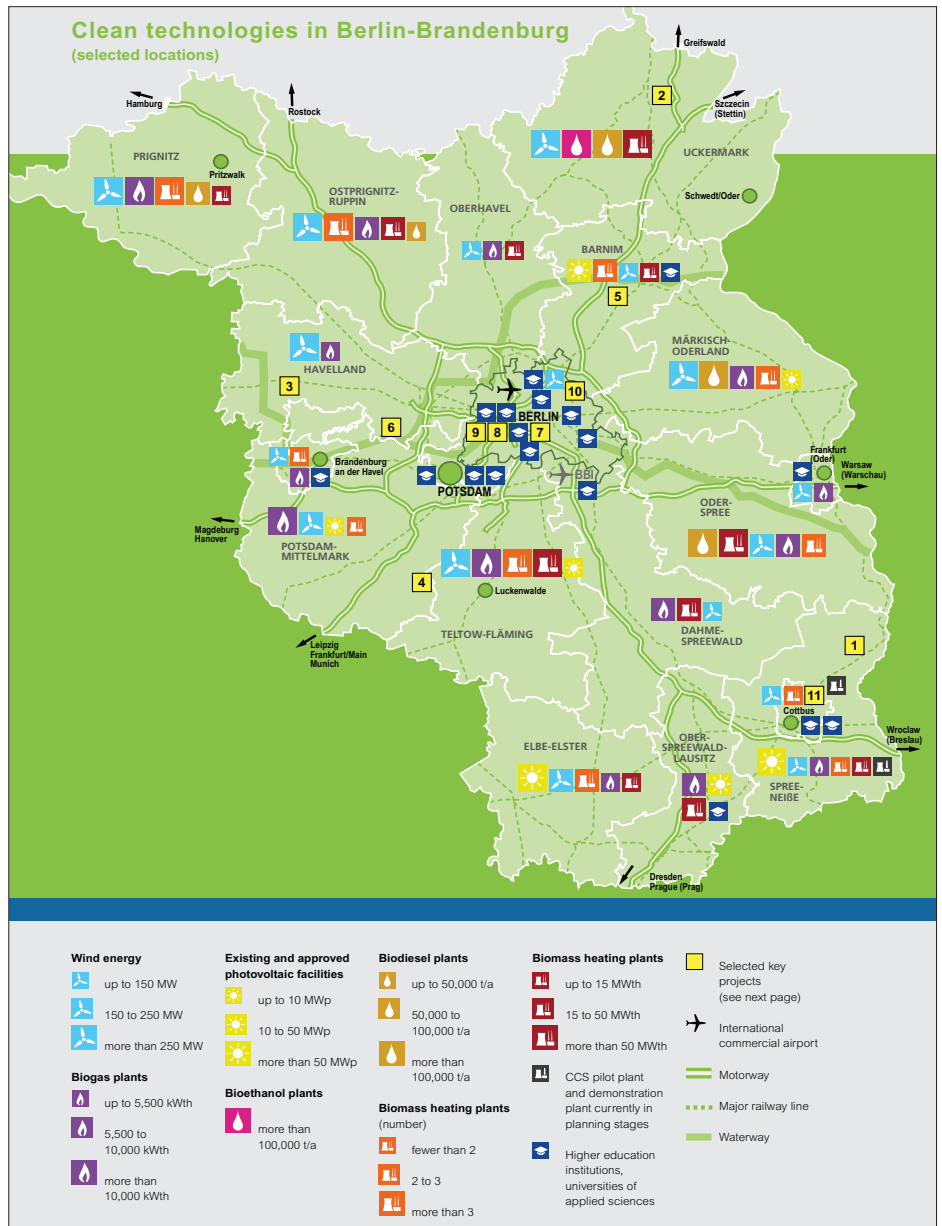
The Energiewende

In reality, the country may be well-endowed to varying degrees, with all forms of energy — from hydro power, coal, nuclear to wind and solar but some of them are "dirty" sources like coal which contributes almost 40% of all greenhouse gas emissions.

Germany has, however, since 1980 been making a shift away from fossil fuels to Green renewable energy supply under a programme popularly called 'Energiewende'; a nationwide promise to shift to a low carbon, nuclear-free economy.

"It is a 'grass-roots' socially desired and politically directed shift towards energy efficiency, renewable energy supply and storage, with a smart electricity grid that enables demand flexibility," says Andreas Kraemer, the founder of Ecologic Institute, a Berlin-based science and sustainable development policy think tank.

Kraemer who is now a senior fellow at



the Institute of Advanced Sustainability Studies and the Canadian Centre for International Governance Innovation (CIGI) says Germany's Energiewende is geared towards increasing energy security and creating new links between the energy and transport systems, electricity and gas, and between the electricity and heating systems.

Kraemer says Germany's energy revolution has been influenced by the climate change phenomenon which is causing havoc in many economies of the developing world.

"Germans understand that even if climate change might not directly affect them as much as other countries, it will affect its trading partners' stability," he says.

It is under the same programme that Germany's development bank, KfW, is helping Uganda finance its renewable energy projects, courtesy of the Get FiT (Global Energy Transfer Feed in Tariff), a programme

which is geared towards contributing to Uganda's energy transition by investing in clean, low-carbon and sustainable electricity projects around the country.

KfW recently co-financed the Soroti 10MW solar power plant in eastern Uganda which is capable of powering 40,000 homes, schools, and businesses in the area.

It is Uganda's first private large scale solar power plant and was connected to the grid in November, last year. KfW has also shown interest in financing a number of mini hydropower plants on Uganda's numerous rivers which would be capable of generating close to 160MW. Barbara Schäffer, an economist at the International Climate Initiative says financing projects in emerging and developing countries has grown from about €120m at the turn of the millennium to its current €500m per year. At the moment, Germany is funding projects in over 100 countries, including Uganda.

Germany also has a number of bilateral partnerships with almost every country in the world to facilitate renewable energy, facilitating technical cooperation in renewable energy transition.

As part of Germany's commitment to the climate change agenda, the global headquarters of the United Nations Framework Convention on Climate Change (UNFCCC) in Bonn is on behalf of the Pacific island of Fiji hosting about 25,000 delegates to the COP23 International Conference to thresh out details of how to implement the Paris Agreement on climate change.

Hosting the 25,000 delegates will cost about €150 million and Germany is footing the bill. For Marc Eichhorn, the head of the Climate, Environmental Policy and Sustainable Economy department at the Federal German Office in Berlin, it is probably the right thing to do because, Germany's overall goal is clear.

"We try to convince others, not by lecturing them but we try to convince them by leading by example," says Eichhorn, "We think that what we do brings a benefit in the end, not only to us if they join us on that path."

Kraemer also says climate change-driven events around the world might harm political stability in many countries which in turn could result in loss of trade, induce migration, and ultimately cause conflict in Germany. He says the contribution of global warming to the various crises around the world is generally assumed if not always understood in Germany.

This understanding also explains the German government's Climate Action Plan 2050, an ambitious programme which the government is implementing to reduce greenhouse gas emissions in sectors like power generation, agriculture and transport.

The country's commitment under the Paris Agreement requires it to cut greenhouse gas emissions (from a 1990 baseline) to 40% by 2020, 55% by 2030 and up to 95% by 2050, with renewable energy representing 80% of Germany's energy mix by the middle of the century. In order to reach this goal, Germany's government has set halfway targets that are to be met in the next 13 years. Indeed, by 2022, the last nuclear plant will be switched off and taken off the national electricity grid.

Germany's climate protection plan says its industries should emit at least 22% less greenhouse gases in 2030 compared to 2014 by improving efficiency in production. With traffic responsible for 18% of all greenhouse gas emissions in Germany, one of the goals of the new climate action plan is to reduce greenhouse gas emission from cars by 40% until 2030.

Germany's environment ministry has also been pressing for a regulation of cars to be included in the climate action plan with



Germany wants most of its power supply in the near future to come from renewable energy sources like the Lieberoser Heide solar plant near Drehnow. INDEPENDENT/RONALD MUSOKE

a suggestion that by 2030, all new cars must almost entirely be either electric or have climate-friendly engines.

According to a report by German international broadcaster *Deutsche Welle*, German car manufacturers including; VW, Audi, Mercedes and BMW have electric cars in their line-up but only 0.6% of all new cars sold in Germany in the first quarter of 2015 were electric cars. At the moment, there are barely 19,000 electric cars on German streets.

With the agricultural sector also being a key emitter of greenhouse gases, thanks to fertilizer use and animal cattle rearing—which is a key contributor to methane in the atmosphere—Germany's Climate Action Plan wants to reduce greenhouse gas emissions in agriculture by 17% by 2030.

The plan focuses on reducing the application of fertilisers and the goal is to have 20% of all agricultural areas in Germany cultivated organically by 2030.

Marlene Micha, a lawyer who works in the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety's National Climate Initiative says the German government is also supporting municipalities, schools, and businesses to tackle climate change. She says, over the last nine years, since 2008, the ministry has supported over 20,000 projects across the country at a cost of € 619m.

Powerful backers

The Energiewende programme has powerful backers like Fischer.

"Energiewende is deeply rooted in a deep consensus within German society and everyone is convinced about the human contribution to climate change," he said, "Everyone believes that it is worth doing something about climate change because the consequences are grave."

Fischer was speaking at a luncheon organised by the German Federal Office in Berlin on Oct. 18 for 14 climate change experts and journalists from 14 countries across five continents. They were from Bangladesh, Brazil, Kenya, Czech Republic, Hungary, Morocco, Nepal, Poland, Portugal, Serbia, Slovakia, Uganda, the US and Vietnam and were in the Lusatia region as part of the German Federal Foreign Office's 'Post COP21 Climate Policy for 2050 information tour' to see firsthand the link between coal mining and climate change.

The Germans were happy to explain their slow but steady switch to renewable electricity produced from the sun and wind. Fischer dismissed the claim that the Germans' fixation on ditching fossil fuels is "a romantic notion."

"Germany's Energiewende is a long term process and by the second half of the century, Germany will be 95% greenhouse gas emission free," he said.

"The destination is clear but in getting there, sometimes we travel faster, and sometimes we travel slower, sometimes we go back," he said. Eichhorn also dismissed claims that Energiewende cannot work.

"It is not a romantic German idea," he said, "It is a hard economic necessity if we want to have a future for our children."

"We don't pretend that we have found the solution for every problem; it is also a process from which we try and error, and we look to others to see what we can learn from them."

Pegels agrees. She says political consensus is never a given.

"It is something that we have to struggle for everyday and that we have to convince people that the Energiewende is something we have and should do as a country," she said. 