



Gabriel: energy transition now powered by strong engine



The former Federal Minister for Economic Affairs and Energy on the achievements in energy policy during the current parliament and the challenges faced. **Find out more**

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“We have succeeded in connecting up a strong engine to power the energy transition,” said former Federal Minister Gabriel* in his opening speech at the 24th Handelsblatt Annual Conference ‘Energy Sector 2017’, which took place in Berlin on 24 January. He went on to add that the energy transition had suffered from the fact that individual decisions by the Bundestag had counteracted one another like “gear teeth that don’t interlock”. The coalition government, said Minister Gabriel, had connected up differing aims and had caused the level of reliability and continuity in the energy transition to go down.

Auctions for renewable energy launched at the start of the year

Minister Gabriel also said that over the past few years, the aim pursued in energy policy had been to expand renewable energy in a commercially viable manner and to make the [electricity market](#) able to deal with feed-in from renewables. He said that the two reforms of the Renewable Energy Sources Act (the first in 2014, the second in 2017) had been successful in halting the continual rise of the renewable energy surcharge. “We have finally switched to using auctions,” said Minister Gabriel, “and we are now seeing the prices fall.”

Following the success of the pilot auctions for ground-mounted PV installations conducted in 2015 and 2016, auctions are now being used (from January 2017) as the standard measure for determining the rates of funding for electricity generated by large-scale renewable energy installations, rather than these rates being fixed by the government. The bidder who asks for the lowest amount of

funding wins. The first auction for large solar power installations over 750 kilowatts (kW) is already underway. Investors have until 1 February 2017 to submit their bids to the national regulatory authority, the Bundesnetzagentur (Federal Network Agency). The first auction to take place for large onshore wind-power installations will be launched on 1 May 2017. Small solar and wind-power installations under 750 kW will, however, continue to receive funding in line with the funding rates stipulated in the 2017 Renewable Energy Sources Act, and will not have to bid in any auctions. This means that there are no changes for members of the public wishing to install a solar-power installation on their roof.

Costs of sector coupling not to be covered by the renewable energy surcharge

In his speech, Minister Gabriel said that the work in energy policy undertaken by the current government had proven very successful. “But we still have great challenges ahead of us and a long way yet to go.” One of the questions still to be answered, he said, was how to finance the additional demand for green electricity in the transport and heating sector that is needed in order to reach climate targets (read more about this issue, known by the term [sector coupling](#)). Minister Gabriel said that not everything could be paid for using the renewable energy surcharge, but that the costs needed to be shouldered more broadly.

The next steps to be taken

During the past year, the Federal Economic Affairs Ministry launched two consultation processes – the ‘Green Paper on Energy Efficiency’ and ‘Electricity 2030’ – in order to instigate a discussion on what the next few steps in the energy transition should be. These particularly focused on the question as to what the mid to long-term strategy for reducing energy consumption in Germany should look like. The evaluation reports on the two processes are to be published in spring 2017.

The European Commission has also provided important coordinates for the energy world of tomorrow in its Winter Package, which was presented in November 2016. This package of reforms also features specific proposals on how energy policy across the individual EU countries can be better coordinated in order to raise energy efficiency and modernise the electricity market. EU-level discussions (in the European Council and Parliament) on the individual components of the package are to begin at the start of this year (for more information on the Winter Package, please click [here](#).)

The most important dates in 2017

There are also many other important dates in energy policy coming up over the course of 2017. Germany has the G20 presidency; the Bundestag elections will take place in September, and a few weeks later, the heads of state and government will meet for the UN Climate Conference in Bonn. Here is an overview of the most important dates in German and international energy policy:

- Berlin Energy Transition Dialogue: From 20 to 21 March 2017, the Federal Government will once again host more than 1,000 international decisionmakers from government, business, and civil society at the 3rd international conference on the energy transition, which will take place at the Federal Foreign Office. The conference will focus on how the transformation of the energy systems around the globe can be successful and how to provide the necessary investment incentives (for more information or to register to attend the conference, please click [here](#)).
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- Berlin Energy Days: Taking place from 3-5 May 2017, the Berlin Energy Days conference will comprise a series of specialist events and a trade fair giving an overview of the political, economic and technical developments relating to the energy transition.
- G20 summit: On 7-8 July this year, the heads of state and government from the 20 most important industrialised and emerging economies will meet in Hamburg. The aim of this meeting will be to settle on a joint position concerning the reduction of subsidies for fossil energy sources. The conference will be chaired by Germany. For more information, please click [here](#).
- COP 23 The 23rd UN Climate Conference will take place in Bonn from 6-17 November. Although this year's host is the island state of Fiji, the Summit cannot take place there for logistical reasons. As the headquarters of the UN Climate Secretariat, the city of Bonn was therefore selected to host the conference instead.

* On January 27 Sigmar Gabriel took on his new position as Foreign Minister. Brigitte Zypries was sworn in as the new Federal Minister of Economic Affairs and Energy the same day.

FURTHER INFORMATION

2016: a successful year for the energy transition

[\[→ Press release by the Federal Ministry for Economic Affairs and Energy on new rules on energy which entered into effect at the start of the year](#)

German G20 presidency: spotlight on energy systems

For one year, Germany will head up the central forum of the 20 leading industrial and emerging economies on financial and economic issues. The Federal Government especially wants to use this time to further advance the transformation of global energy systems.



At the end of 2015, 195 countries came together to attend the COP 21 climate conference in Paris. They used the event to reach a special agreement: by the end of this century, greenhouse gas emissions are to have been reduced so significantly that the rise in global temperature stays below 2 degrees, and ideally does not rise more than 1.5 degrees. This agreement has already entered into force. Now it is up to the German G20 presidency to drive forward the work necessary towards realising this agreement. During this time, its focus here is to ensure that the group of the 20 most important industrialised countries and emerging economies – the G20 countries – serve as leaders in implementing the Paris climate agreement. A further aim is thus to bring energy interests closer together with climate protection. The German G20 presidency will focus on the scope in energy policy and the economic potential that can be tapped by addressing the significant need for investment in the energy sector and beyond.

What investments are necessary in order to ensure that the transformation of global energy systems takes place in accordance with the targets set in the Paris climate agreement and is also an economic success? What political framework needs to be put in place in order to mobilise this investment? What solutions are already available in the various sectors today, and which technologies are in need of the greatest investment? These are just some of the questions that will be at the heart of the work of the G20 over the coming months. In addition to this, the G20 will also seek to identify and agree on common areas of focus in energy and climate policy and decide on activities that will enable the process of transforming the energy systems in the long-term to be realised.

The German presidency's energy roadmap

An important facet of the global energy transition is the paradigm shift in energy investments, which often run long-term. This involves shifting the focus away from fossil technologies, towards greater efficiency and renewable energy.

“The challenge for the leading nations around the world is to make the energy supply virtually climate-neutral by the middle of the century”, says Rainer Baake, State Secretary at the Federal Ministry for Economic Affairs and Energy. “At the same time, it is also crucial for our economies that our energy supply is secure and affordable. The G20 are united around this challenge – despite all of our differences, not only the differences in our energy systems – and this is what makes discussion and dialogue on energy and climate policy so important.”

The countries of the G20 will come together several times over the next few months in order to discuss these issues. The Berlin Energy Transition Dialogue, which will take place from 20-21 March 2017, is just one of the meetings providing opportunity for discussion at international level. The highlight of the German G20 presidency will be the G20 summit attended by heads of state and government. This meeting will take place in Hamburg from 7-8 July.

Just under 70 per cent of global greenhouse gas emissions

The G20 is a political and economic heavyweight. The G20 countries represent approximately two thirds of the world's population, more than four fifths of the world's GDP and three quarters of world trade, and play a key role in mitigating climate change. Together, these countries emit just under 70 per cent of global greenhouse gas emissions.

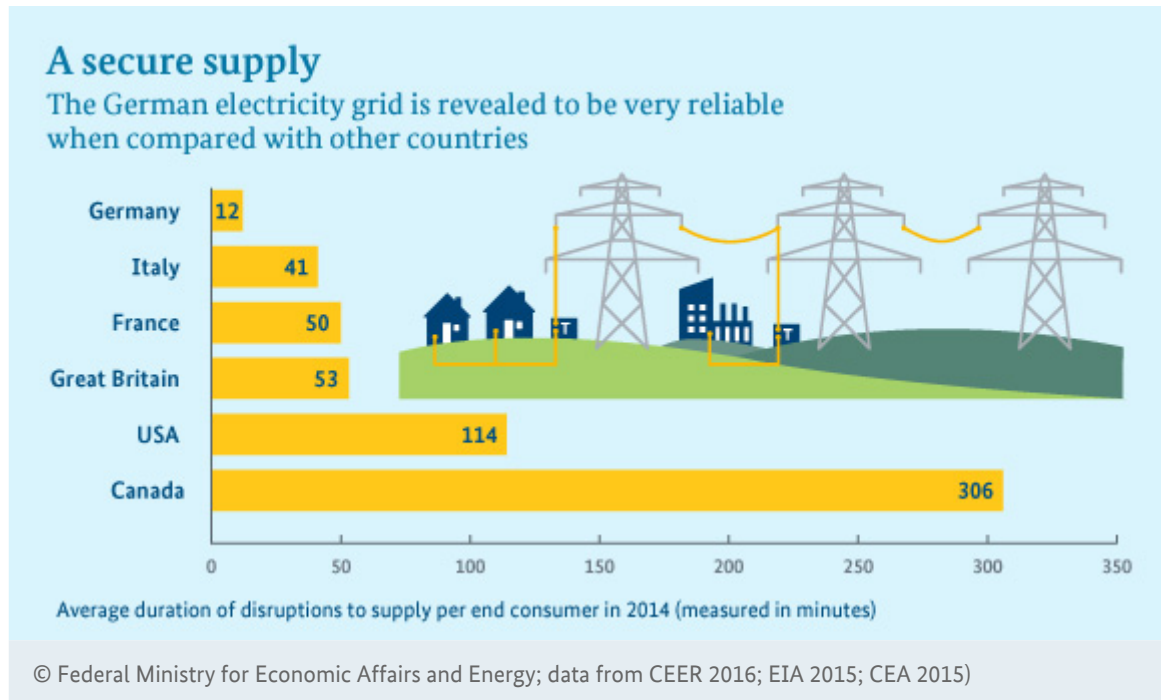
FURTHER INFORMATION

[\[→ Press release on Germany taking over the G20 Presidency\]](#)

[\[→ Berlin Energy Transition Dialogue 2017\]](#)

Germany's electricity supply is outstandingly secure

Germany is one of the top performers internationally when it comes to its electricity supply. The average time for which an end consumer has to go without power is around just 12 minutes.



Germany's electricity supply is particularly reliable, as a comparison with its European neighbours clearly shows. In 2014, the average time for which an end consumer in Germany had to go without power was just 12 minutes and 17 seconds. This was the lowest figure in the whole of Europe. In the same year, the electricity supply in Italy was disrupted for an average of 14 minutes per end consumer. In France, the figure was 50 minutes. Germany's electricity supply also performs well when compared with countries outside of Europe. In the USA, the end consumer had to go for an average of 114 minutes without power – that is almost two hours. In Canada, the figure rises to just over five hours (306 minutes).

Energy transition not having any negative impact on supply quality

In 2015, the average time for which an end consumer in Germany was without power marginally rose, climbing to 12 minutes and 42 seconds. According to the President of the Bundesnetzagentur (Federal Network Agency) Mr Jochen Homann, the main cause for this development was extreme weather conditions, such as storms and heat waves. "We continue to see that the energy transition and the rising volume of distributed energy-generation capacities are not having any negative impact on supply quality."

Once a year, operators of energy-supply networks have to present a report to the Bundesnetzagentur detailing each and every disruption to the power supply that lasts longer than 3 minutes. The Council of European Energy Regulators (CEER), the independent association of European regulatory

authorities, provides a European comparison of these disruptions as part of its [Annual Report on gas and electricity security of supply](#). The most recent figures available are for 2014.

Plans for capacity reserve for unforeseen events

In order to ensure that the electricity supply in Germany remains reliable even as it integrates a growing share of energy from renewables, it is crucial for it to have a flexible electricity system providing smart networking between consumption and generation, and that it also expands the grid swiftly. The [Electricity Market Act](#), which was adopted last year, puts the rules in place for competition between flexible supply, flexible demand, and storage. Establishing a capacity reserve is intended to provide an additional safety net for whenever unforeseen events occur.

FURTHER INFORMATION

[\[→ Data from the Bundesnetzagentur \(Federal Network Agency\) on the quality of supply from 2006-2015](#)

[\[→ Report by the Council of European Energy Regulators on security of supply for electricity and gas](#)

What exactly is demand-side management?

Can companies adjust to the wind and sun? Yes, for example by ramping up production when the wind is blowing and by slowing it down when the wind dies away. For more information about how companies save energy costs and open up new revenue sources by using demand-side management, please read on.



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Managing the demand for electricity

People who do not have children of school age will try not to go on holiday during the school summer break. As we all know, prices for flights, hotels and ice-cream along the beach promenade are much lower outside the holiday period than during the high season. All those who are flexible in choosing the times for their holiday can consequently save a lot of money.

This is exactly how our electricity market will work in the future. Companies that are able to manage their production processes in a flexible manner will have the opportunity to use electricity when the prices are particularly low, for example, when there is a lot of wind. In hours of the day when demand for electricity is high, resulting in rising electricity prices, these companies can curtail their production or use previously stored energy. This is called demand-side management (DSM).

Industrial consumers smooth out fluctuations

To date, our electricity supply system has been based on the principle that power stations adjust their generation of electricity to the needs of consumers. Increased demand leads to an increase in the generation of electricity. Hence, it is still the supply side which reacts in a flexible manner. However, with the share of renewable energy in power generation increasing, this will become more difficult because the wind and the sun as providers of energy cannot be controlled. The amounts of electricity that PV systems and wind farms feed into the grid fluctuate much more than electricity generated in conventional power stations.

In the electricity market of the future, companies and private households (the so-called demand side) will react in a flexible manner to the fluctuating electricity supply provided from wind and solar power and will smooth out fluctuations. In this way, demand-side management will help to ensure that our electricity grid remains reliable (for more information about security of supply, please click [here](#)). By introducing the Electricity Market Act last year, the Federal Government has paved the way for an electricity market that is based on competition between flexible supply, flexible demand, and storage technologies.

Companies can sell flexible demand

Industrial companies, especially those in energy-intensive sectors such as the metal processing or the chemical industry, offer the largest potential for demand-side management (for details about an ongoing research project in this area, please click [here](#)). Nonetheless, medium-sized commercial companies can also benefit from DSM. Not only does DSM allow companies to reduce their energy costs, it also helps them to tap into new sources of revenue. Companies will be able to offer their flexible demand in different segments of the market: the balancing reserve market, the spot market or the market for interruptible loads.

Digitalisation opens up entirely new possibilities for adjusting the electricity demand (including the demand of private households) to the electricity generation capacities. The best time to charge so-called controllable electricity-consuming devices, such as heat pumps or night storage heaters, is when electricity is available at a low price. The batteries of electric vehicles can also primarily be recharged when the wind and the sun are generating a particularly large amount of electricity. The [Act on the Digitalisation of the Energy Transition](#) adopted last year marked the beginning of intelligently connecting electricity suppliers and consumers.

FURTHER INFORMATION

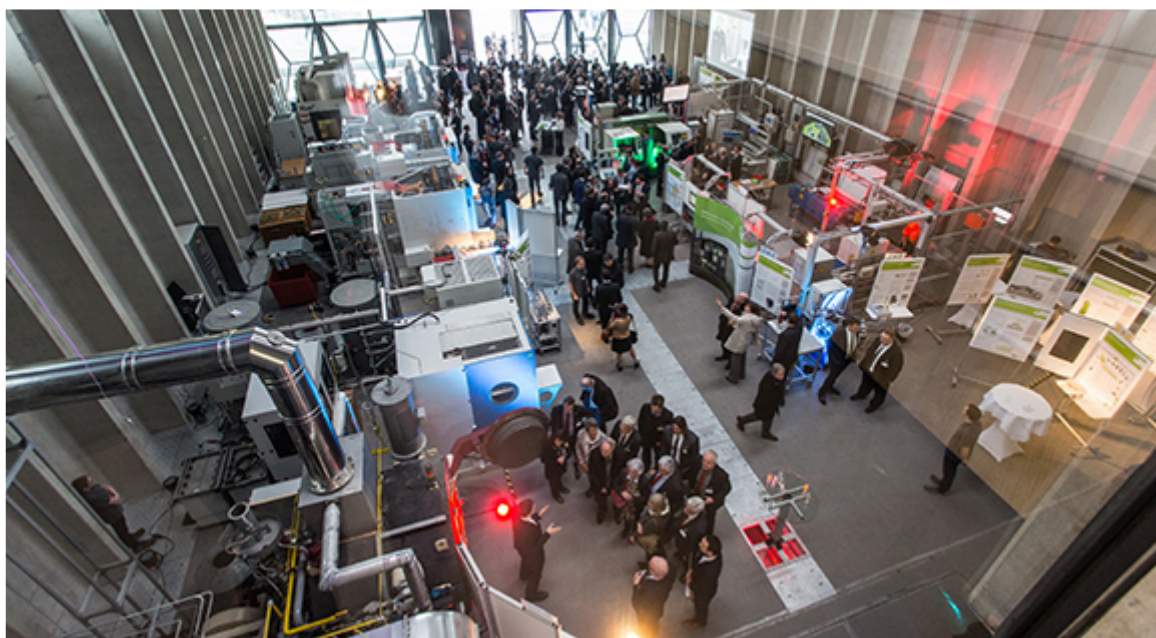
[→ [The Electricity Market 2.0](#)

[→ [Information about digitalising the energy transition](#)

[→ [Information about DSM on the website of the German Energy Agency \(dena\)](#)

Factory of the future will stabilise the electricity grid

Researchers in Darmstadt are testing the ways in which industrial enterprises can react to grid fluctuations in the future as the share of renewable energy continues to increase. The Federal Ministry for Economic Affairs and Energy is promoting the ‘Phi Factory’ research project.



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Over the past years, the Factory of the future has been set up in Darmstadt. It is now ready to be hooked up to the grid. Scientists of the Technical University (TU) of Darmstadt and several companies are engaging in the ‘Phi Factory’ research project launched at the end of 2016 to identify how industrial companies can contribute towards stabilising the electricity grid. Given that the grid will in future be transporting an even higher share of renewable energy, it will be subject to higher fluctuations. Companies from energy-intensive sectors can help smooth out these fluctuations by adjusting their energy needs more closely to grid and generation capacities. This will increase companies’ energy efficiency and open up additional revenue sources as companies will be able to provide new services for the electricity supply system.

Major potential for demand-side management in industry

Demand-side management (DSM) means that if there is a high general demand for electricity in the grid, companies can switch off individual plants without this having a negative impact on their operational processes. In periods of low demand, companies can ramp up their consumption (for more information about this, please see “[direkt account](#)”). In Germany alone, the potential for DSM in industry stands at over five gigawatts. This is more than five percent of the peak load measured in the German grid. Around 30 percent of this potential lies dormant in the metal processing industry and the automotive sector. In addition to the three institutes of the Technical University of Darmstadt, two smaller and four larger companies are also involved in the Phi Factory project. The Federal Ministry for Economic Affairs and Energy is providing 4.8 million euro of funding in support of the project up to 2019.

Emergency operation for one hour: factory is to become ready for use in an isolated grid

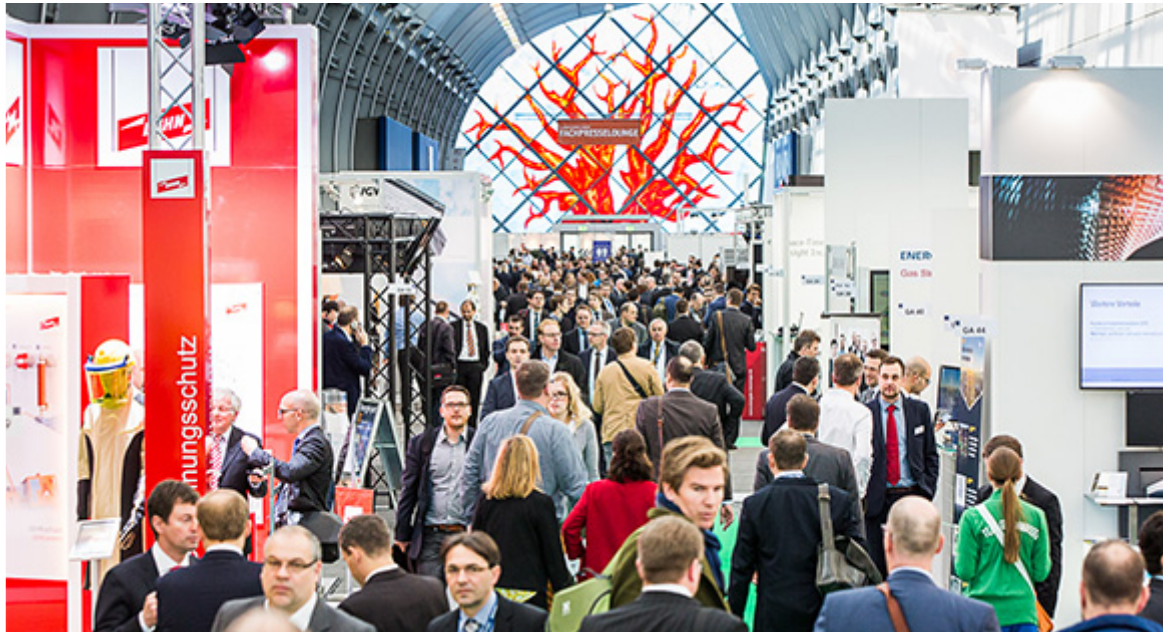
In recent years, the Technical University of Darmstadt has developed a model factory called ETA Factory, a project which has also been supported by the Federal Ministry for Economic Affairs and Energy. Using the example of a metal-working process, this project looks into all the details of industrial production starting from the production chain up to the building envelope. The aim is to optimise the energy use of the factory. Within the scope of the Phi Factory project, this model factory will be integrated into the grid. Here, the new lithium-ion batteries have an important role to play. These batteries complement the existing kinetic energy storage systems and improve the so-called peak clipping, i.e. they help avoid very high short-term power peaks. Another aim of the project is to make the factory ready for use in an isolated grid in order to enable emergency operation for up to one hour in the event of a power blackout.

FURTHER INFORMATION

[\[→ Information about energy research](#)

Wanted: energetic start-ups

The Start-up Energy Transition Award will be awarded to start-ups that offer solutions for the energy transition. At the beginning of February, start-ups can also present their solutions at the E-World exhibition in Essen.



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Start-ups offering innovative products and services for Germany's energy transition had the opportunity to apply for the Start-Up Energy Transition Award until 31 January 2017. The award-winners will present their projects and get the chance to network with investors, established companies and other start-ups. The award is co-funded by the Federal Ministry for Economic Affairs and Energy. The award ceremony will be held at the Berlin Energy Transition Dialogue in March 2017.

Networking will also be a major topic at the E-World Energy & Water fair. From 7-9 February 2017, start-ups will be given the opportunity to present their ideas and business models for the energy transition (please click here for the programme). The German Energy Agency (dena) will also attend the fair and take its "dena start-up bus" to travel there with young entrepreneurs from the Berlin region.

FURTHER INFORMATION

- [\[→ Website of the Start-up Energy Transition Award \(in English\)\]](#)
 - [\[→ E-World start-up programme \(in English\)\]](#)
 - [\[→ Berlin Energy Transition Dialogue 2017\]](#)
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Quote of the week



"Accelerating the pace of the energy transition and expanding its scope beyond the power sector will not only reduce carbon emissions, it will improve lives, create jobs, and ensure a cleaner and more prosperous future."

Adnan Z. Amin, Director-General of the International Renewable Energy Agency (IRENA)

The Federal Ministry for Economic Affairs and Energy goes online with its new website

The [web portal](#) of the Federal Ministry for Economic Affairs and Energy has been redesigned and made more user-friendly. Visitors can use it to get comprehensive new and background information about Germany's economic and energy policy.

Germany and UAE agree on cooperation in the field of energy policy

Germany and the United Arab Emirates (UAE) want to work together on energy policy. State Secretary Rainer Baake (Federal Ministry for Economic Affairs and Energy) and the UAE's energy minister Al Mazrouei signed a memorandum of understanding on this in Abu Dhabi.

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