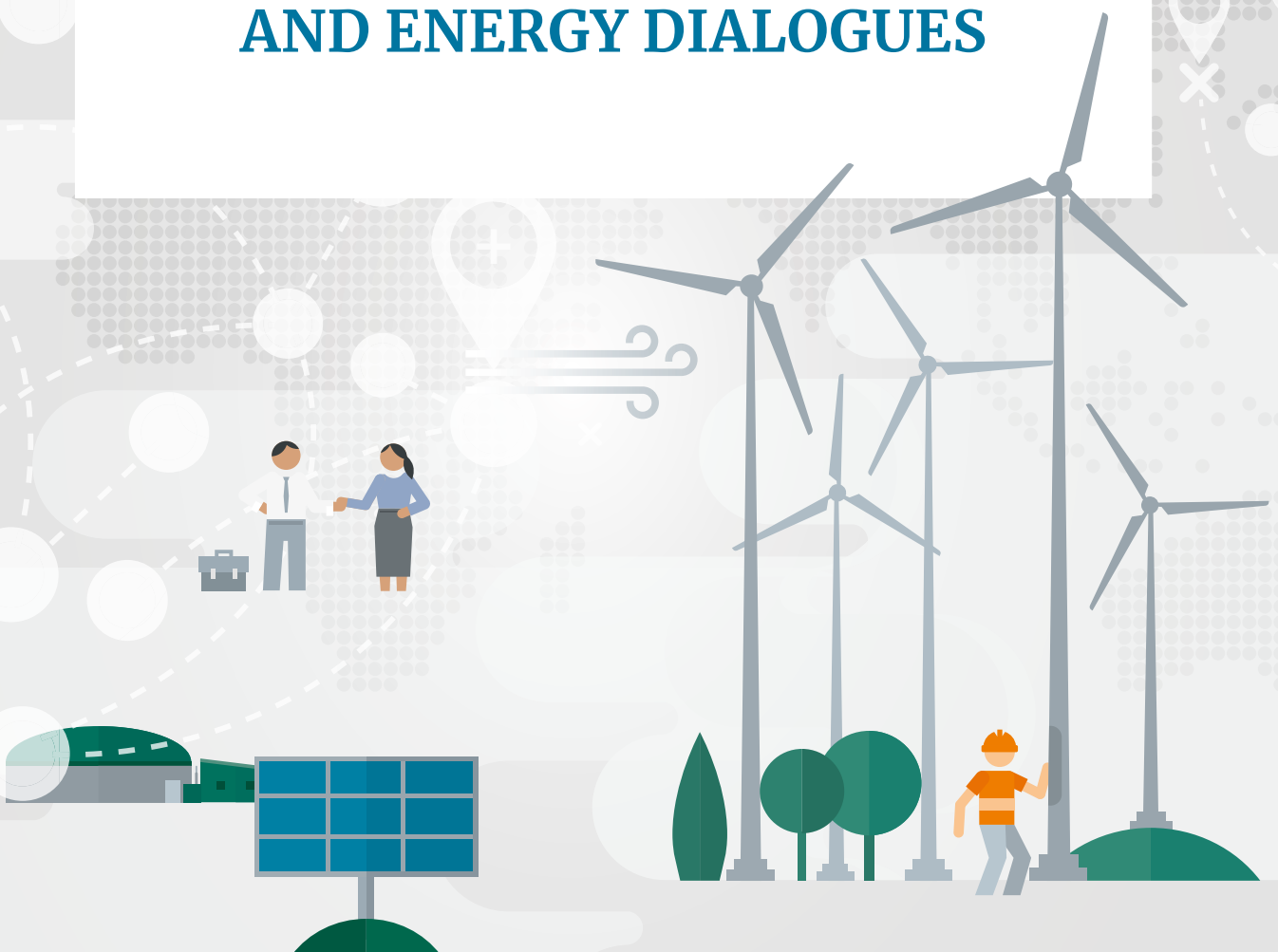




2019

ANNUAL REPORT

ENERGY PARTNERSHIPS AND ENERGY DIALOGUES



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2019

ANNUAL REPORT

**ENERGY PARTNERSHIPS
AND ENERGY DIALOGUES**



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AND ENERGY DIALOGUES

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Dear reader,

Germany is maintaining energy partnerships and energy dialogues with over twenty countries across the globe. Together with our partners, we share the view that a successful energy transition must take a global approach.

The trusting and regular dialogue and mutual learning that take place in these partnerships are a key pillar of the continued expansion of renewable energy and the dissemination of efficient technologies, enabling us to meet our common international climate commitments along the way.

In 2019, renewables reached a record share of nearly 43% of electricity consumption in Germany. At the same time, electricity consumption fell to its lowest level of the past twenty years. Likewise, greenhouse gas emissions declined sharply by about six per cent or 50 million tonnes of CO₂ in year-on-year terms. In the building and transport sectors, by contrast, energy consumption and related emissions stagnated or increased. Therefore, it is vital to ensure the successful implementation of the energy transition across all sectors and to always keep in mind the socio-economic dimension. Continued international cooperation and a dialogue on successful solutions are indispensable in this effort. Together with our partners, we want to set the stage for a fair and economically successful global energy transition.

2019 was an important year for global transformation, with renewables playing an increasingly decisive role in global electricity generation. In fact, more than one quarter of the world's electricity is already being generated from renewables. In 2019, once again more renewable generation capacity was installed in the electricity sector than fossil and nuclear combined. Global renewable energy uptake no longer depends on just a few countries. The use of renewables continued to rise worldwide in 2019.

The increased interest in a global energy transition is reflected in the forging of new partnerships: in 2019, we launched three new energy cooperation programmes with Canada, Chile and Ethiopia. We are thus continuing to strengthen the foundation for a successful global energy transition.

We are of course faced with challenges, such as when key partners alter their energy and climate policy focus. It is precisely in situations like these that we must continue the relationships we have built up and maintain strong energy partnerships – not only with regard to intergovernmental cooperation, but also the trusting dialogue with business, academia and civil society.



This annual report provides insights into the diverse forms of cooperation that have emerged from the energy partnerships and energy dialogues with our partner countries. It illustrates that ours are partnerships of equals that will not only benefit both sides, but also boost the uptake of renewables, improve energy efficiency and ultimately benefit our climate, which is in the best interest of us all.

I wish you an interesting read!

A blue ink handwritten signature, appearing to read 'Peter Altmaier', written in a cursive style.

Peter Altmaier
Federal Minister for Economic Affairs and Energy

What are energy partnerships and energy dialogues?

In an energy partnership, Germany works together with a partner country on various energy policy issues relating to the energy transition. The work is based on a declaration of intent signed by the two sides. An energy dialogue pursues the same goals, but is not based on a declaration of intent. The issues to be covered and specific activities are agreed jointly by the two partners.

Who takes part in energy partnerships and energy dialogues?

In Germany, this is the Federal Ministry for Economic Affairs and Energy, as well as ministries like the Federal Ministry for Economic Cooperation and Development, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, and the Federal Foreign Office. On the side of the partner, the energy ministry takes part, along with other relevant and interested

ministries. When it comes to implementing the activities in the partner countries, the Federal Government works together with implementing agencies like the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), various bilateral chambers of commerce, the German Energy Agency (dena), adelphi consult and Navigant.

What countries have energy partnerships or energy dialogues with Germany?

There are energy partnerships between Germany and Algeria, Australia, Brazil, Chile, China, India, Japan, Jordan, Mexico, Morocco, South Africa, South Korea, Tunisia, Turkey and the United Arab Emirates. Germany maintains energy dialogues with: Canada, Iran, Kazakhstan, Russia, Ukraine and the United States, including selected states in the U.S. Also, the Federal Ministry for Economic Affairs and Energy (BMWi) is working together with Belarus and Egypt, and within the framework of energy cooperation with Ethiopia.

STRENGTHENING INTERNATIONAL ENERGY COOPERATION

The energy partnerships and dialogues continued to build up their bilateral cooperation in 2019: with more focal issues, many more workshops in the various countries, and a sharp rise in the number of study tours and delegations visiting Germany.

95 focal issues
+2 (compared with 2018)



More issues were discussed and evaluated in working groups in 2019 – e.g. energy efficiency in industry, auctions to promote the use of renewable energy, and public acceptance of the energy transition.

75 steering meetings and bilateral discussions



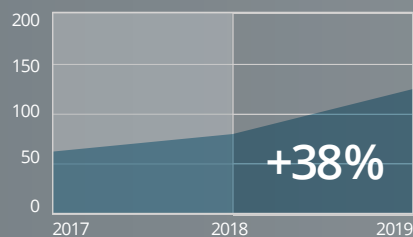
The number of steering meetings fell slightly compared with the previous year (77).

Canada, Chile and Ethiopia joined the circle of bilateral cooperation on energy issues with Germany.

+3
new countries



121
workshops held in EP/ED countries



There was a clear jump in the number of intensive workshops: it increased by more than a third in 2019.

+1
20
large-scale events

Large-scale events like energy days are key milestones in the cooperation in the energy partnerships and dialogues. Almost every partnership implemented one of these events.

44 study tours and delegations visiting Germany



Sharing expertise via encounters and genuine dialogue: the number of study tours and delegations visiting Germany rose clearly in 2019 compared with the previous year.



Joining forces for a successful global energy transition

How more than twenty partner countries are working towards a sustainable energy supply

For more than ten years, Germany has been maintaining bilateral energy partnerships and energy dialogues. For the Federal Government, these are a key instrument within a strong and growing global network of countries whose energy systems are undergoing a comprehensive transformation. A regular intergovernmental dialogue, working groups and specific joint projects serve to stimulate innovation in the energy sector, thus paving the way for a global energy transition.

Partnerships in a continuing dynamic context

In 2019, diverse channels and platforms were used to discuss the key challenges and opportunities of the global energy transition. Issues such as network and system rules, electricity market design, hydrogen strategies, the coal phase-out, energy audits, energy efficiency in buildings, grid expansion, cyber security and blockchain, but also broader questions regarding the social dimension of structural change or local economic and employment trends were addressed in the context of 121 workshops, 75 steering group meetings and bilateral talks, 44 delegation visits and 20 large-scale events.

As these figures reveal, the level of interest in Germany's energy transition remains high – and so is the willingness to engage in a close dialogue on the part of policymakers, but also business, academia and civil society. Together with Germany's more than twenty partner countries, the Federal Ministry for Economic Affairs and Energy is pursuing the goal of transforming our energy systems in a way that is economically and socially attractive.

An increasingly future-oriented agenda

All over the world, the increasing decentralisation of energy supply systems resulting from the expansion of renewables, innovative storage solutions, electric mobility and further flexibility options – including demand-side solutions – is creating new challenges for all stakeholders in the energy sector. Reflecting this trend, the digitalisation of the energy sector climbed up the agenda of Germany's bilateral energy partnerships in 2019. At the second German-Algerian Energy Day, participants discussed national strategies, the digitalisation of the energy sector and the benefits of the transformation processes in both countries. In Mexico, events were held to address issues such as digitalisation, cyber security for critical infrastructure and blockchain; a study was conducted to explore the possibilities of applying blockchain in Mexico's energy sector.

Driven by the conviction that a successful energy transition implies a synthesis of energy security and competitiveness with innovative and effective climate action, carbon-free alternatives – particularly with regard to gaseous and liquid forms of energy – are becoming increasingly important. In 2019, the debate on the role of hydrogen that is produced in a low-emission way gained momentum both in Germany and in numerous partner countries.



The cooperation on hydrogen involves a wide range of countries and activities, including a background study on the hydrogen debate in Australia, a German-Japanese study on the role of hydrogen in both countries, an analysis of the potential for power-to-X and a power-to-X commission in Morocco, a dialogue on hydrogen mobility with South Korea, the presentation of a plan for a South African coordination and support agency modelled on Germany's National Organisation Hydrogen and Fuel Cell Technology (NOW), and a dialogue on hydrogen strategies with Oman.

New energy partnerships

On the margins of the Berlin Energy Transition Dialogue (BETD) in April 2019, Economic Affairs Minister Peter Altmaier signed a new bilateral energy partnership with Chile. By virtue of its geographical location, the country offers major potential for electricity generated from PV and other renewables. The plan is therefore to engage in closer cooperation on renewables and energy efficiency, but also on hydrogen and digitalisation. Like Germany, Chile has already started to phase out coal.

Further to this, the intensive energy dialogues with Japan, South Korea and Jordan have been upgraded into formal energy partnerships.

Launch of the German-Ethiopian energy cooperation

On the basis of a bilateral agreement on the joint implementation of energy projects, Germany is extending its international energy cooperation schemes with a view to implementing its G20 initiative entitled 'Compact with Africa' (CwA).

At the CwA Conference in Berlin on 19 November 2019, Economic Affairs Minister Peter Altmaier and his Ethiopian colleague, Dr. Eng. Seleshi Bekele, Minister of Water, Irrigation and Energy (MoWIE), agreed on a joint energy project in the form of a scientific competition for ideas on distributed electricity supply in rural areas. The two ministers also agreed on measures to upgrade existing hydroelectric power stations. The aim is to strengthen renewable sources of energy as a means of securing a stable electricity supply – a prerequisite for economic prosperity as well as reform and market-oriented policies.

Partnerships as a means of finding country-specific solutions

The year 2019 showed once again that energy partnerships play a prominent role in developing sustainable, country-specific approaches to the challenges posed by the energy transition.

Not only are they instrumental in promoting the worldwide expansion of renewables and the dissemination of efficient energy technologies, but also in ensuring a permanent international dialogue on political and economic issues related to the energy transition.



Signing of the energy cooperation with Ethiopia within the framework of the „Compact with Africa“ conference with Federal Minister of Economics Altmaier and Ethiopian Energy Minister Seleshi Bekele.



Encouraging new rules and instruments for Algeria's energy transition

German–Algerian Energy Partnership

The energy partnership focused on energy efficiency, peak load management and digitisation. The highlights in the year were the record number of visitors to the second German-Algerian Energy Day and the publication of the renewable energy grid code drawn up in the context of the energy partnership.

Partner ministry

Ministry of Energy

Office headquarters Algiers

Year of establishment 2015

Priority issues

- Expansion of renewable energy and its integration into the grid
- Energy efficiency in industry
- Energy scenarios

Website

www.energypartnership-algeria.org



Contact

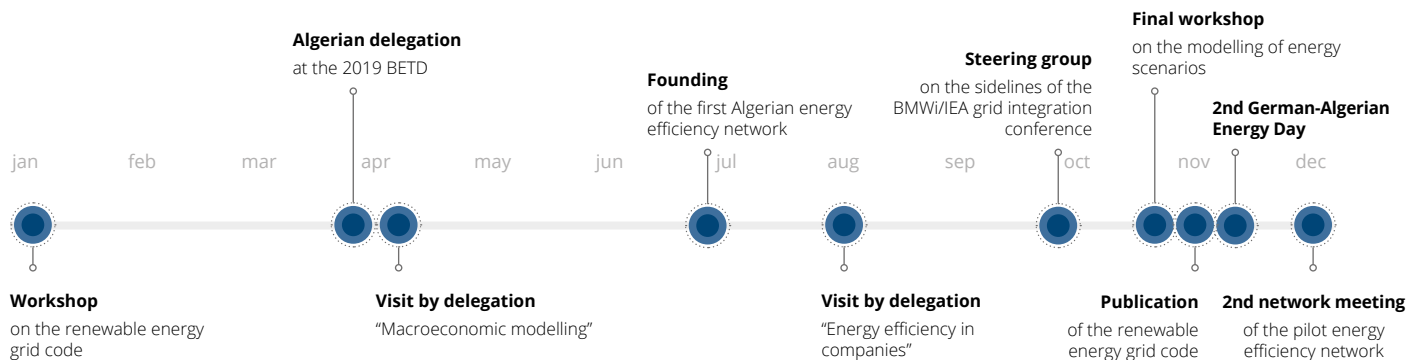
Rebekka Hilz

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH



German Ambassador Ulrike Knotz and H.E. Fathma-Zohra Cherfi, Secretary-General of the Algerian Energy Ministry, opened the second German-Algerian Energy Day together in Algiers

The emergence of a popular movement for political change marked a turbulent beginning to 2019 in Algeria. Despite this, progress was made on the auctions for renewable energy projects during the year: in the summer of 2019, the state energy utility Sonelgaz signed contracts with five local and international consortia. This paves the way for the construction of solar farms with a capacity of 50 megawatt to hybridise stand-alone grids. Also, in November 2019 the regulatory commission announced the successful bidder in its pilot solar auction of 150 megawatt. At around 6 cents per kilowatt hour, the bid was below the expected prices for kilowatt hours. Only 50 out of 150 megawatt were awarded in this first auction round, since the other bids exceeded the maximum price. In view of diminishing state revenues from the oil and gas sector, the question of financing the Algerian energy system continues to present a challenge for the Algerian government. The energy partnership therefore focused in 2019 on the development of a helpful regulatory framework, energy efficiency and various aspects of demand side management. The highlight of the bilateral exchange was the second German-Algerian Energy



Day in November 2019 on "Innovation and the Energy Transition", with a record 180 participants.

Creating a positive regulatory framework for the energy transition

The energy partnership supported the development of a pro-investment environment for Algeria's energy transition by providing advice on the renewable energy grid code and launching comprehensive advice on energy transition governance. In particular, this includes an analysis and recommendations on the development of rules on energy efficiency, a study tour and workshops on governance of the expansion of renewable energy.

Model-based decision-making processes in the energy sector

Highlights in the advice to the Energy Ministry included the joint work on the macroeconomic model "e3.dz" and a study tour to Germany on macroeconomic modelling of energy scenarios. The model can estimate economic repercussions of different energy transition scenarios for Algeria. The "e3.dz" model was presented to the Algerian experts on the margins of the 2019 Energy Day, and is now being used by them to support decision-making processes in the energy sector.

Launch of the first Algerian energy efficiency network

In July 2019, eight Algerian companies set up the first Algerian energy efficiency network along with the organiser, the Energy Efficiency Agency, backed by the Algerian Energy Ministry and German expertise. The work on energy efficiency in companies was complemented by a study tour on instruments and ways to promote energy efficiency in companies and an analysis of the training of energy managers in Algeria.





Successful Energy Day boosts partnership

German-Australian Energy Partnership

The first Australian-German Energy Symposium fostered the dialogue between government, commerce and research. In particular the topic hydrogen has been discussed intensively.



Participants at the first Australian-German Energy Symposium in Melbourne, Australia, discussed the transformation of the energy system, flexibility options, electricity market design issues and hydrogen

Partner ministry

Department of Industry, Science, Energy and Resources

Office headquarters Berlin

Year of establishment 2017

Priority issues

- Hydrogen
- Energy efficiency in industry
- Integration of rising RES shares
- Economic cooperation
- Resilience of the electricity system
- Raw materials



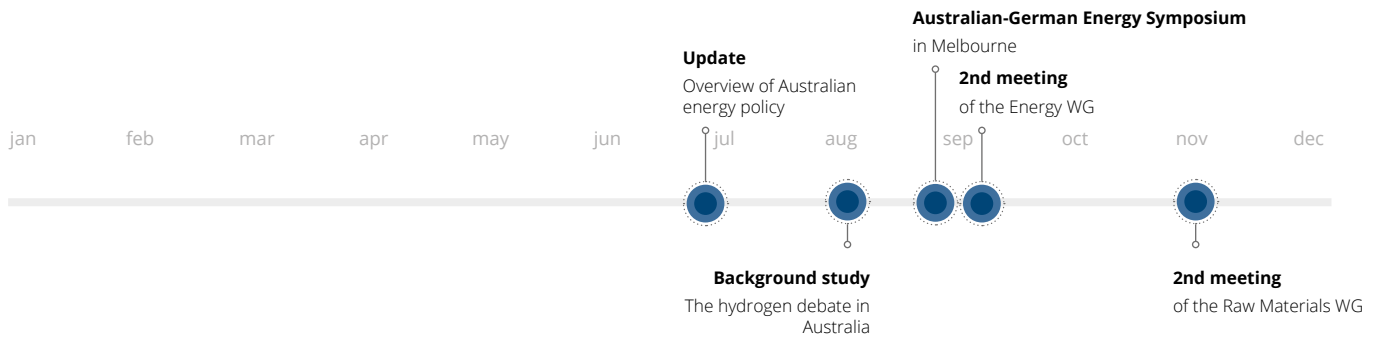
Contact

Franziska Teichmann
adelphi

The topic of hydrogen topped the energy policy agenda in both countries in 2019. Despite the distance between the two countries, Germany is most interested in Australia's potential for producing climate-friendly hydrogen. This potential was reflected in the national hydrogen strategy published by Australia in November. The strategy pursues four goals: Australia wants to be one of the biggest exporters of hydrogen to Asia, to maintain excellent safety standards in the hydrogen industry, to create economic benefits and jobs in Australia, and to use a robust, internationally recognised certification standard for guarantees of the origin of hydrogen.

Bilateral cooperation

Australia and Germany can be key countries in establishing new trade links and developing certification standards. The Working Group on Energy is promoting not only established core topics like electricity market design, energy efficiency in buildings and the integration of renewable energy, but also the energy process relating to hydrogen. The activities are complemented by the Energy Transition Hub, a cooperation project between universities and research institutes in Germany and Australia. The Hub implements politically relevant research projects which study the technical, economic and social transformation of the energy system.

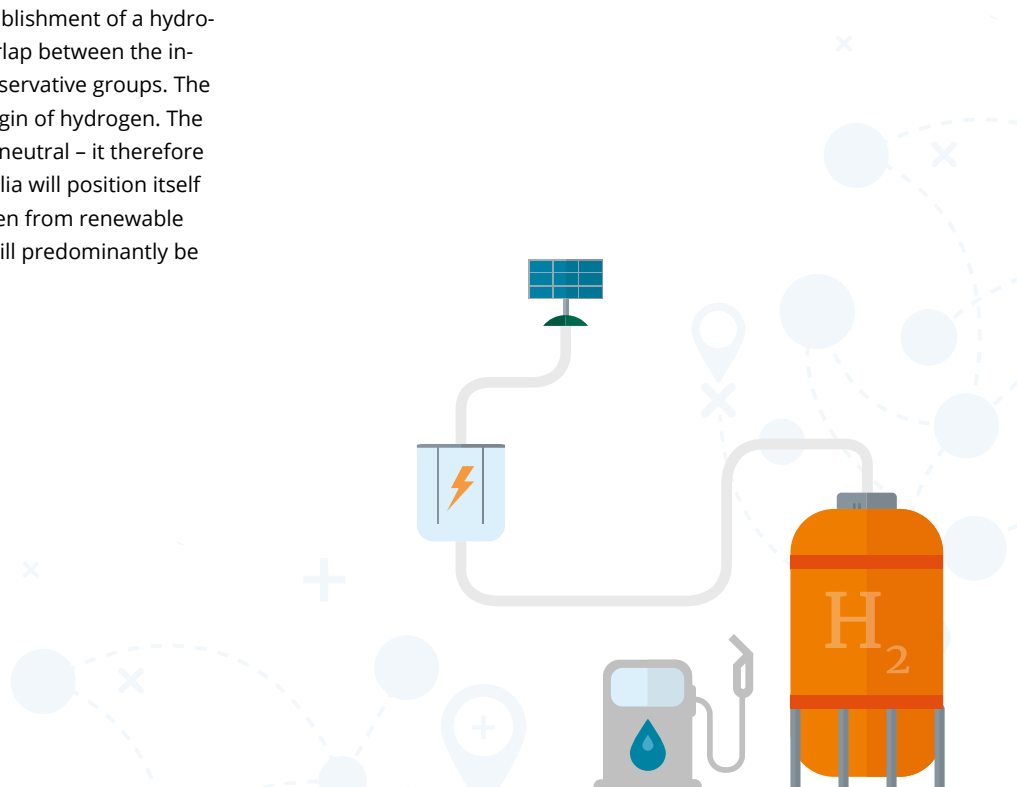


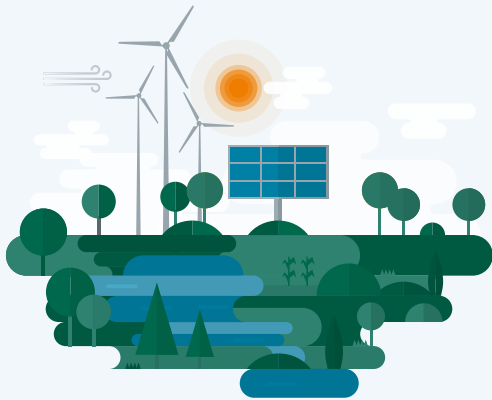
Energy Symposium in Melbourne

The Working Group on Energy held a two-day event in Melbourne in September in cooperation with the Energy Transition Hub. The main topics included the transformation of the energy system, flexibility options, electricity market design issues and hydrogen. The event was opened by Lily D'Ambrosio, Energy Minister of the State of Victoria. The Working Group on Energy, chaired by the Australian Energy Department and the BMWi, met on the margins of the conference. This second meeting of the Energy WG since it was founded in 2017 focused on electricity grid stability, hydrogen, energy efficiency in buildings, decarbonisation of industry, and economic cooperation. The Working Group on Raw Materials met in November.

Study on hydrogen in Australia

In the run-up to the Energy Day, adelphi published a study on the hydrogen debate in Australia. The establishment of a hydrogen export industry represents a rare overlap between the interests of more progressive and more conservative groups. The study also highlights the debate on the origin of hydrogen. The National Hydrogen Strategy is technology-neutral – it therefore remains an open question whether Australia will position itself as a pioneering producer of green hydrogen from renewable energy or whether coal-based electricity will predominantly be used to make the hydrogen.





Energy systems of the future: what are the challenges and opportunities?

German-Brazilian Energy Partnership

Energy systems of the future and their direction are at the heart of the dialogue, particularly as Brazil is diversifying its electricity generation. The partnership is therefore maintaining a constant dialogue on the policy environment, market designs and business models of existing and new stakeholders.

Partner ministry

Energy and Mining Ministry (MME),
Foreign Ministry (MRE)

Office headquarters Brasília

Year of establishment 2017

Priority issues

- Integration into the grid
- Electricity market development
- Support development of a national energy efficiency plan
- Energy efficiency networks and auction designs
- Digitisation

Website

www.energypartnership.com.br



Contact

Carmen Langner

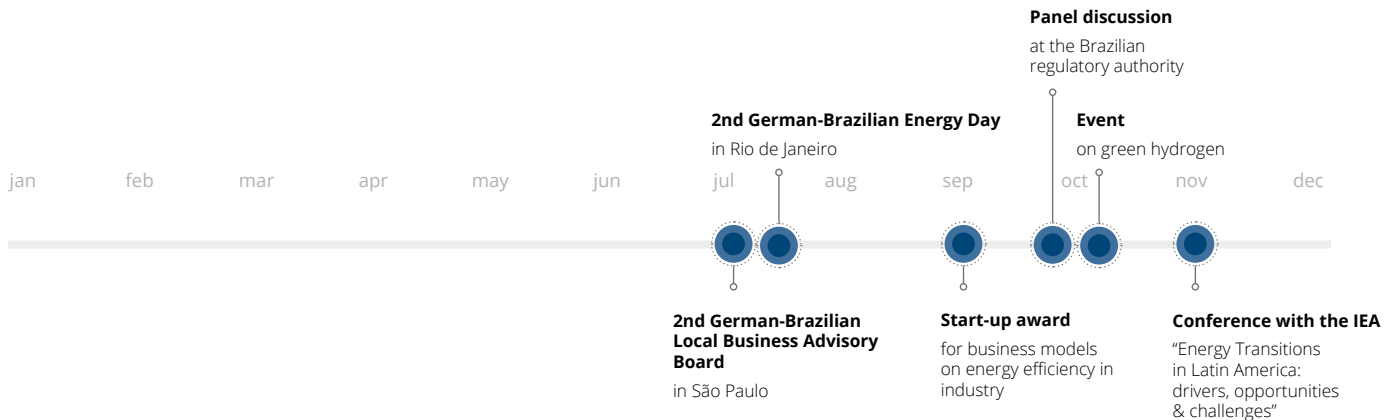
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The second German-Brazilian Energy Day in Rio de Janeiro saw more than 80 guests and experts discussing the strategies of both countries, as well as the market opportunities and challenges of the energy transition. The event was opened by Ursula Borak (BMW) and Carlos Alexandre Pires (MME)

Brazil continued to diversify its electricity generation in 2019, particularly making use of wind, biomass and photovoltaics, fields in which the country offers excellent conditions. The integration of renewable energy is intended to reduce dependence on hydropower, which has so far been dominant, since a lack of rain has repeatedly caused generation shortfalls. Also, the new Brazilian government in place is implementing ambitious reforms to modernise the electricity sector since the beginning of the year. They include measures to liberalise the electricity market, cost and risk allocation in the system, price-formation mechanisms, integration of new technologies and auction rules for new-build.

These developments are entirely in line with the joint declaration by Brazil and Germany of 2015 in which they commit to a complete decarbonisation of the world economy in the course of the 21st century. The new government engaged in numerous activities in 2019 to build on this cooperation.



German-Brazilian Energy Day and regional energy transition conference

One highlight was the second German-Brazilian Energy Day in Rio de Janeiro, at which representatives of the two countries discussed opportunities and challenges resulting from the transformation of their respective energy systems with stakeholders from private sector, science and civil society. Whilst Germany is placing emphasis on decarbonisation, Brazil mainly needs to adapt regulations and technology for increasingly distributed electricity generation.

Another highlight was the regional conference on “Energy Transitions in Latin America: drivers, opportunities & challenges” organised by the IEA in cooperation with the German-Brazilian Energy Partnership, at which the specific experience gained with their respective energy transitions was discussed with five Latin American countries.

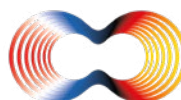
Cooperation with the private sector

The Local Business Advisory Board launched the year before was successfully continued. Eleven German firms explained challenges in Brazil’s electricity sector to the BMWi delegation, as well as showing potential solutions, some of which have since been addressed in dialogue formats of the Energy Partnership. The Local Business Advisory Board will continue to be a key pillar for the feeding of suggestions from the business community into the work Energy Partnership.

Work on reform of net metering

In 2019, Brazil discussed regulation of net metering and the extent to which small installations are to share in grid fees. A seminar held by ANEEL, Brazil’s regulatory authority, drew on relevant experience from Germany via the Energy Partnership. Experts in law presented the Renewable Energy Sources Act and increasing market integration of the distributed generation, from guaranteed feed-in tariffs to an auction model.





Chile – Germany’s partner with enormous potential for renewable energy

Chilean-German Energy Partnership

Chile’s energy policy is strongly oriented to renewable energy. The potential is 100 times greater than current energy demand. The Chilean-German Energy Partnership is fostering Chile’s energy transition and pioneering role in the region.



Chilean delegation visits turbine factory in Berlin

Partner ministry

Ministry of Energy (ME)

Office headquarters Santiago de Chile

Year of establishment 2019

Priority issues

- Renewable energy
- Energy efficiency
- Hydrogen
- Digitalisation
- Phase-out of Coal

Website

www.energypartnership.cl



Contact

Rainer Schröder

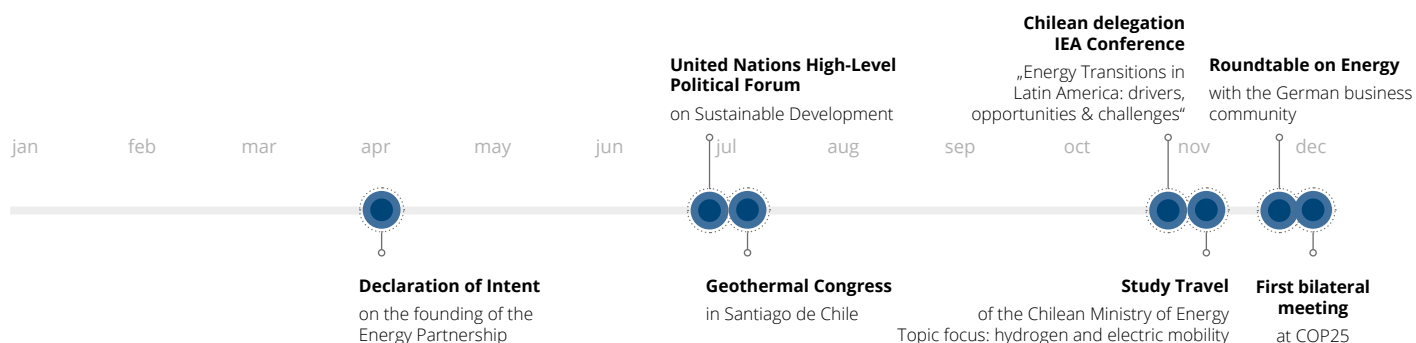
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Chile has a very great potential in terms of non-conventional renewable energy. This includes small-scale hydropower, wind energy, solar energy, biomass, geothermal energy and tidal energy, which, taken together – according to a joint study by Ministry of Energy and GIZ – offers a potential of more than 1,800 gigawatt. The Chilean government has been promoting renewable energy since 2008. The interim goal of 20 percent of power generation from non-conventional renewable sources by 2025 was exceeded in October 2019. This was achieved by technology-neutral auctions and without government subsidies.

The annual solar yield in the Atacama Desert stands at 2,500 kWh/m² (GHI). This is the highest level of solar radiation anywhere in the world, and makes it possible to install large-scale concentrated solar thermal installations, as in the “Cerro Dominador” project.

The new Energy Partnership

Economic Affairs Minister Peter Altmaier and the then Chilean Energy Minister Susana Jiménez signed a declaration of intent on the founding of the German-Chilean Energy Partnership at the Berlin Energy Transition Dialogue (BETD) in April 2019.



Green hydrogen and the coal phase-out

In 2018, Chile decided to gradually phase out coal. Ten coal-fired power plants are to be switched off by 2024, and the share of coal in the energy mix is to drop to zero by 2040. The new cooperation between Chile and Germany has therefore focused from the outset on the phase-out of coal-fired electricity generation and the resulting economic and social problems. The future expansion of renewable energy and the establishment of infrastructure for green hydrogen are forward-looking topics which will improve the greenhouse-gas neutrality of copper mining, which is so important for Chile's economy.

The Energy Partnership has been engaged in numerous activities to drive the energy dialogue and sharing of expertise. The Chilean Foreign Ministry shared Chile's experience with the phase-out of coal with experts at the United Nations High-Level Political Forum on Sustainable Development in New York. Also, the Energy Partnership is actively supporting the Chilean Energy Ministry's "Energía + Mujer" initiative, which aims to boost the role of women in the energy sector. 52 private and public-sector stakeholders in the energy sector signed a declaration committing to the implementation of specific measures by 2022 to raise the participation of women in the energy sector.

At the conference organised by the IEA in cooperation with the German-Brazilian Energy Partnership in Rio de Janeiro entitled "Energy Transitions in Latin America: drivers, opportunities & challenges", representatives of the Chilean Energy Ministry and CNE, the regulatory authority, presented aspects of Chile's energy transition and discussed the potential of the global energy transition with experts from around the world.

The first high-level bilateral meeting following the establishment of the Energy Partnership in April 2019 took place at the COP25 global climate conference, which was chaired by Chile in Madrid in December 2019. The future strategic orientation of the Energy Partnership was discussed on this occasion.





China's energy revolution – a new push for a sustainable future

Sino-German Energy Partnership

Germany and China continued their trusting energy partnership in 2019. In addition to new topics, including biomethane and hydrogen, the focus was on boosting cooperation with the private sector. The highlight was the completion of phase I of the demonstration project “energy efficiency in industry”.

Partner ministries

National Development and Reform Commission of the People's Republic of China (NDRC),
National Energy Administration (NEA)

Office headquarters Beijing

Year of establishment 2007

Priority issues

- Renewable energy and energy generation (electricity market, flexibility, heating, hydrogen, biomethane)
- Energy efficiency in buildings and in industry

Website

www.energypartnership.cn



Contact
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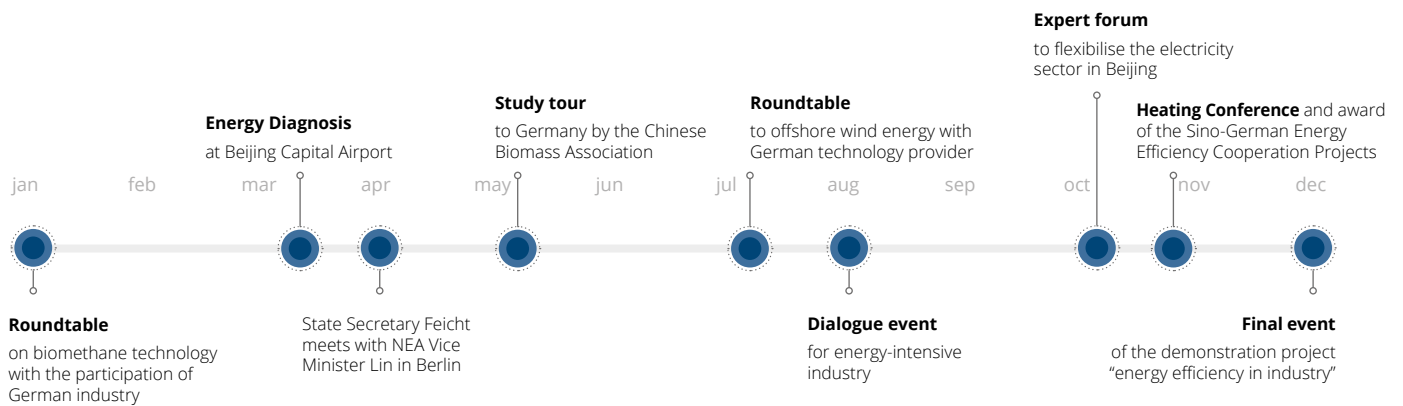
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Sino-German Energy Efficiency Cooperation Projects Award in Beijing in November

The final stage of the implementation of China's 13th Five-Year Plan (2016-2020) began in 2019. It was already clear that most of the goals would be attained or exceeded in the energy sector. The world's largest consumer of energy cut the proportion of coal in primary energy consumption to below 60 percent for the first time, and is thus getting close to this year's 58 percent target. At the same time, renewables-based electricity generation rose by 9.4 percent in year-on-year terms to 2043 terawatt (by Q3/2019). In March 2019, Beijing dropped out of the list of the 100 cities with the worst air pollution.

One factor behind this was the great progress made on implementing the heat transition in northern China. Over the last few years, China has replaced thousands of coal-fired boilers with renewable heat sources and natural gas. At the same time, the issues of energy efficiency in industry and buildings, the implementation of the electricity market reform, and the flexibilisation of the electricity sector remain on the Energy Partnership's agenda. Furthermore, the BMWi and NEA decided in November to expand the dialogue on hydrogen strategies and biomethane and to extend the dialogue between German and Chinese think tanks on the energy transition.



Demonstration project as a platform for industry

One key milestone in the strengthening of economic cooperation was the successful implementation of the first phase of the multi-annual model project "Energy efficiency in industry". Following the completion of energy analyses in six energy-intensive companies – from a cement plant to Beijing Capital Airport – energy efficiency measures were implemented with the support of German firms. A major dialogue event with German and Chinese companies, training events on life-cycle cost analyses, and an exchange of experience on energy efficiency policies in Germany and China rounded off the implementation in China. One special success: China is taking over parts of German standard DIN EN 16427 in its new energy audit standard. A second phase is planned for the ongoing implementation of the measures and dissemination of the results.

The first Sino-German Energy Efficiency Cooperation Projects Award under the auspices of the German Federal Ministry for Economic Affairs and Energy (BMWi) and the National Development and Reform Commission (NDRC), was another highlight in economic cooperation. In total, five German and five Chinese companies were awarded prizes for their outstanding achievements in the joint implementation of energy efficiency measures.

Bilateral expert dialogue

Many bilateral discussions underpinned the sharing of expertise last year. The political dialogue was enhanced by a number of meetings between State Secretary Feicht and his counterparts at NDRC and NEA, including on the sidelines of the Berlin Energy Transition Dialogue (BETD) and the G20 in Japan.

The fact that Germany's phase-out of coal is of interest to China was shown by the visit by an NEA delegation to the Lausitz region and to the mayor of the town of Spremberg. This highlights the importance of the Energy Partnership as a platform for the great challenges of the energy transition.





Prime Minister Narendra Modi and Chancellor Angela Merkel give recognition to work of Indo-German Energy Forum

Indo-German Energy Forum

India and Germany have been discussing the transformation of their energy systems for the last 13 years. The highlight in 2019 was the 8th Indo-German Energy Forum, at which eight implementing agreements and declarations of intent worth more than 200 million euro were signed.

Partner ministries

Ministry of Power (MoP)
Ministry of New and Renewable Energy (MNRE)

Office headquarters New Delhi and Berlin

Year of establishment 2006

Priority issues

- Flexibilisation of existing power plants
- Renewable energy
- Energy efficiency
- Integration of renewable energy into the grid

Website

www.energyforum.in



Prime Minister Narendra Modi and Chancellor Angela Merkel give recognition to work of Indo-German Energy Forum

India has ambitious targets for the expansion of renewable energy. It is planning to invest more than 25 billion euros each year in photovoltaics and wind energy. By 2030, another 370 gigawatt of photovoltaic and wind are to come on stream. Whether these alternative energy sources will result in a smaller expansion of coal-fired power plants by then remains an open question. The integration into the system of large amounts of electricity from intermittent renewable sources is a challenge for India.

German-Indian Energy Forum in New Delhi

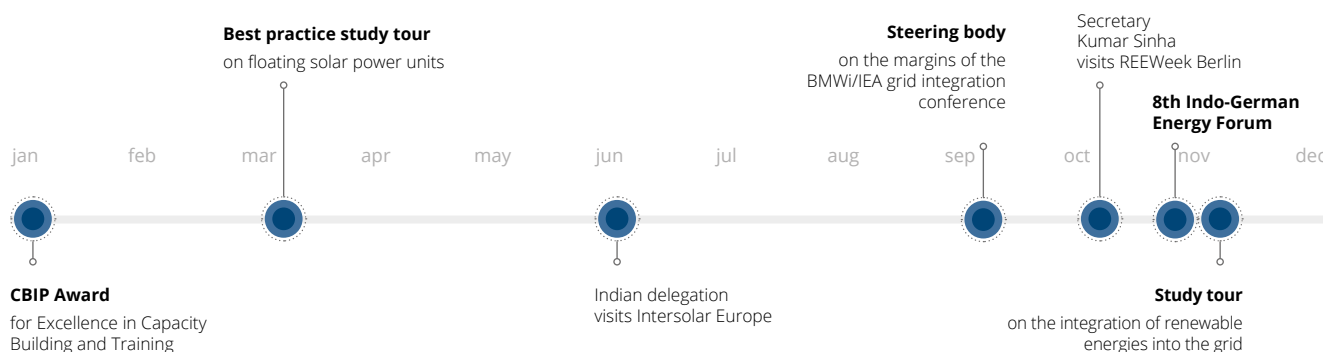
The 8th Indo-German Energy Forum was co-chaired by Secretary Sanjiv Nandan Sahai (MoP) and Parliamentary State Secretary Christian Hirte (BMW) in New Delhi on 1 November 2019. More than 300 high-level delegates from administration, government and commerce adopted the roadmap for the future energy cooperation between the two countries. Eight implementing agreements and declarations of intent worth more than 200 million euros were signed.

Contact

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Zusammenarbeit (GIZ) GmbH

Anil Kumar Bellary
KfW Bankengruppe



In meetings on the margins of the Forum, Germany's Agriculture Minister Julia Klöckner and Research Minister Anja Karliczek were joined by experts from commerce, government and science to discuss the importance of flexibility in the energy system, the positive role of women for the global energy transition, and the potential of offshore wind and vertical photovoltaic systems in India. In a joint final declaration, Heads of Government Narendra Modi and Angela Merkel voiced their appreciation of the "important" and "successful" work of the German-Indian Energy Forum.

Strengthening of German-Indian cooperation at the Renewable Energy India Expo

The IGEF organised a large number of activities to boost cooperation at the largest Indian trade fair for renewable energy, which attracts nearly 37,000 visitors. For example, events on niche photovoltaic markets were held during the Indo-German Energy Day. Experts from government, associations and commerce discussed the market prospects for private rooftop photovoltaic installations with integrated battery storage, and the advantages of agro-photovoltaics for India. At the second Local Business Council, 26 German energy companies joined with the German Embassy, Germany Trade and Invest and the bilateral chamber of commerce to discuss barriers and challenges on the Indian market.

Energy Ministers present awards for excellence

The Indo-German Energy Forum was presented with the 2019 CBIP Award for Excellence in Capacity Building and Training. The prize was accepted by Co-Director Anil Kumar Bellary from Energy Minister R.K. Singh at an awards ceremony. Recognition went to the successes of the IGEF in implementing state-of-the-art training and establishing a pool of committed experts who will be able to deploy technical capabilities to shape the Indian electricity sector in a sustainable and innovative manner.





Initial results from the energy policy dialogue

Good technical cooperation

At the high-level preparatory meeting of the Energy Committee, the successes of the German-Iranian Energy Dialogue were presented and further topics chosen for the continuation of the cooperation.

The focus of the German-Iranian Energy Committee, which met in Berlin in 2019, was on the results already achieved and on future cooperation on renewable energy and energy efficiency. In particular, the technical dialogue on improving the policy framework for renewable energy, the integration of renewable energy into the electricity system, and cooperation on energy efficiency are to be deepened in future.

Renewable energy

In 2019, German-Iranian cooperation particularly focused on the integration of renewable energy into the system. The planned introduction of a grid code was discussed, and a report compiled on Grid Integration of Variable Renewable Energies. The results were also presented on the margins of the preparatory meeting of the Energy Committee in Berlin, and handed to the Iranian side for further use. This work is to be continued.

Energy efficiency

The advisory process on the compilation of a National Energy Efficiency Action Plan (NEEAP) for Iran was stepped up. In cooperation between dena and the Iranian Institute for International Energy Studies (IIES) and other relevant institutions, brief studies and cooperation achieved important progress on the NEEAP for Iran.

A systematic stocktaking of the energy policy situation in Iran and of existing energy efficiency tools made it possible to set out initial goals for the NEEAP in the buildings and industry sectors. The focus of the continuous cooperation will be on the implementation of the NEEAP in these sectors.

The joint Energy Committee decided on in-depth cooperation in the context of the dialogue, particularly in the field of transferring expertise.

Partner ministries

Ministry of Petroleum,
Ministry of Energy

Office headquarters Berlin

Year of establishment 2018

Priority issues

- Regulatory framework for renewable energy
- Energy efficiency incentives

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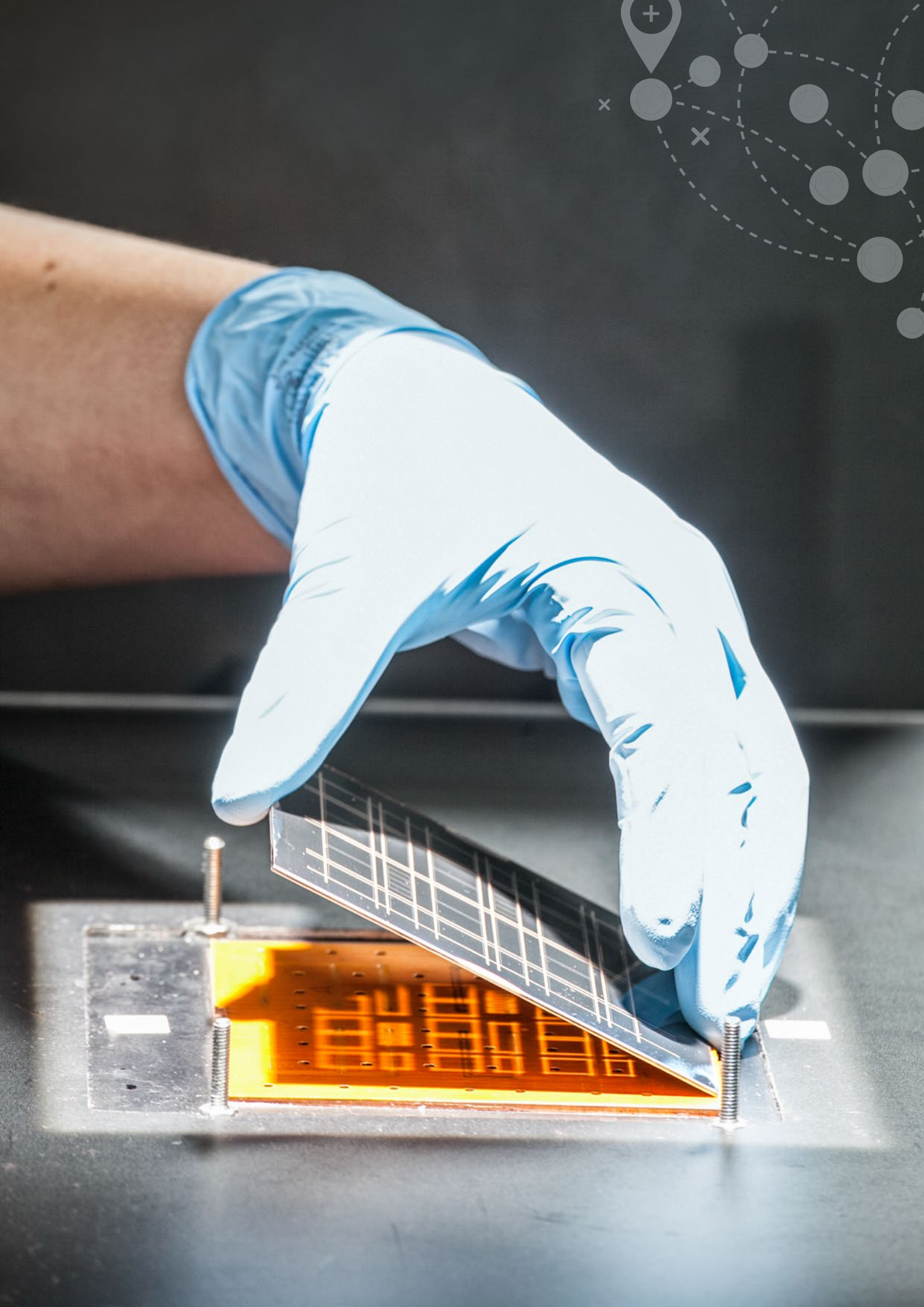
3
steering group
meetings, WG meetings
+ bilateral discussions

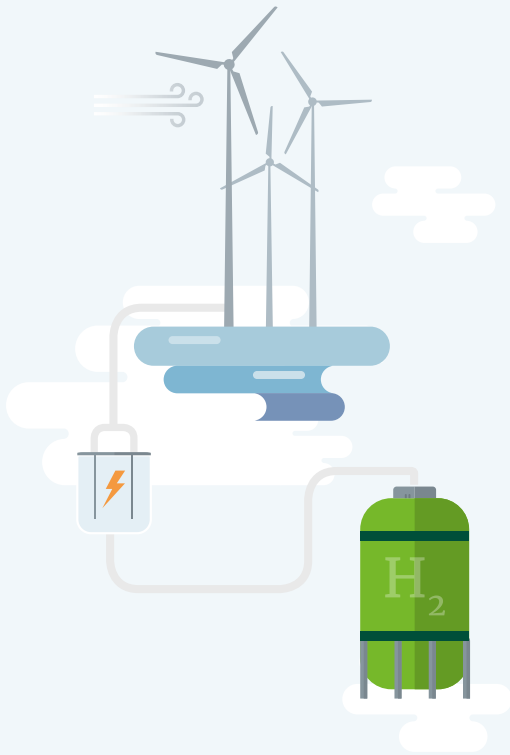
2
key issues

3
study tours/
delegations

3
workshops in the
EP/ED countries







A fresh boost to energy cooperation via agreement on the Energy Partnership on the margins of the G20 Energy Ministers Meeting

German-Japanese Energy Partnership

The highlight in 2019 was the upgrading of the existing Energy Dialogue in June 2019 with the signing of the German-Japanese Energy Partnership, which lays the foundations for intensified and institutionalised energy cooperation. The key issues are to include hydrogen, renewable energy, integration into the grid, and energy efficiency.

Partner ministry

Ministry of Economy, Trade and Industry (METI)

Office headquarters

Berlin (Tokyo branch office)

Year of establishment 2019

Priority issues

- Expansion and integration of renewable energy
- Wind energy including offshore wind
- Energy efficiency and conservation
- Innovative energy systems, e.g. via sector coupling, smart grids and energy storage
- Hydrogen and power-to-X



German-Japanese Environment and Energy Dialogue Forum in Tokyo

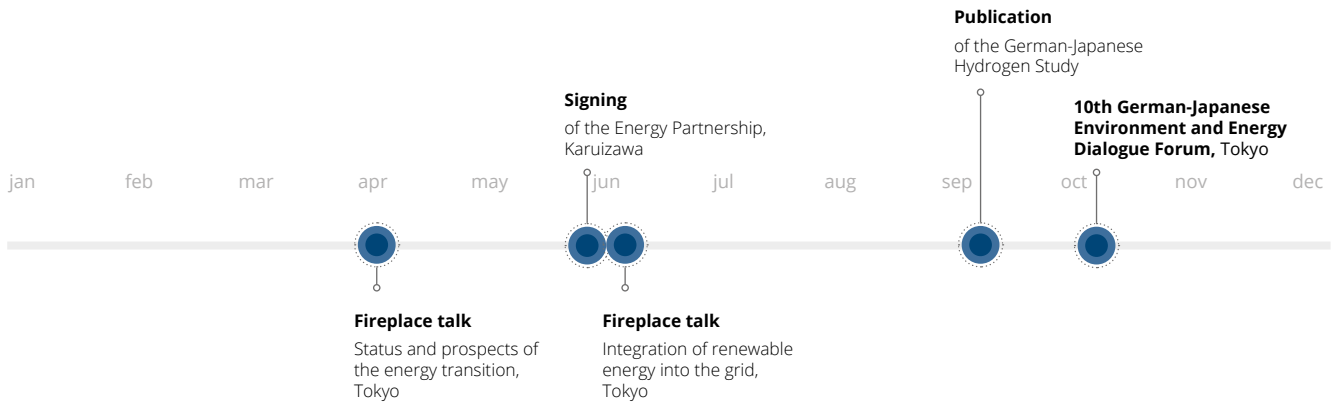
In order to institutionalise and deepen the fruitful energy policy dialogue between Germany and Japan, Andreas Feicht, State Secretary at the Federal Ministry for Economic Affairs and Energy responsible for energy policy, and Taizo Takahashi, Commissioner of Japan's Agency for Natural Resources and Energy of METI, signed a Declaration of Cooperation to establish a German-Japanese Energy Partnership on the margins of the G20 Energy Ministers Meeting in Karuizawa in June 2019.

Following the signing, a German-Japanese fireplace talk was held in Tokyo on the integration of renewable energy into the grid, attended by State Secretary Feicht and a German business delegation from the offshore wind sector. Another fireplace talk on the status and prospects of the energy transformation in Japan and Germany had previously taken place in April. In 2019, the fireplace talks again offered an appropriate forum for a stimulating and constructive dialogue in a small group of experts from government, private sector and science. The 10th German-Japanese Environment and Energy Dialogue Forum



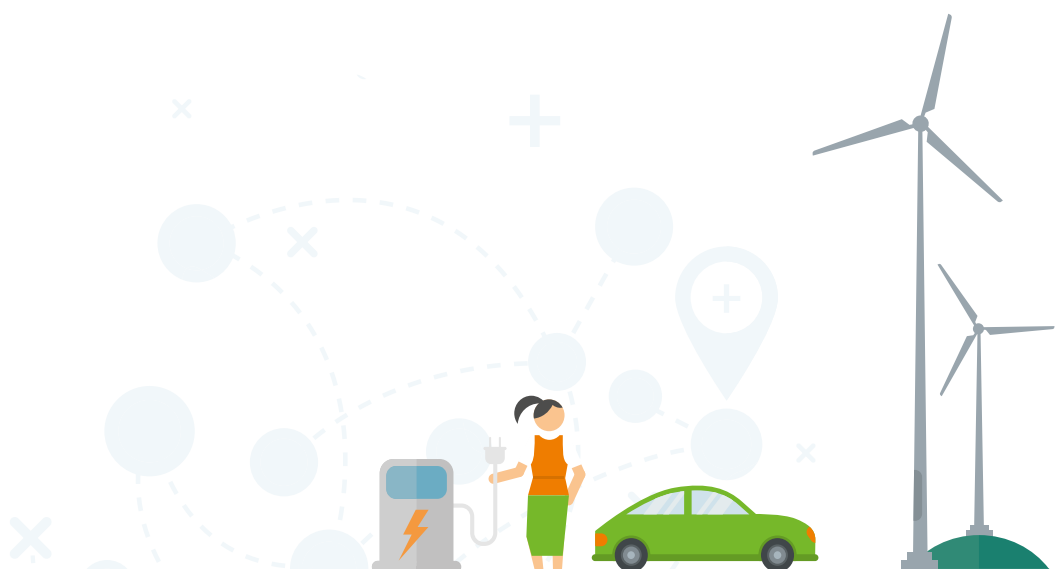
Contact

Jana Narita
adelphi



was jointly hosted in Tokyo in October 2019 by the German Economic Affairs and Environment Ministries and the New Energy and Industrial Technology Development Organization (NEDO) with support from METI. Some 250 Japanese and German experts took advantage of the anniversary forum to discuss policy strategies and innovative solutions for the decarbonisation of the energy system. This included the presentation of a German-Japanese study into the role of hydrogen in the energy systems of the two countries, focusing not least on ways to build up international supply chains for green hydrogen.

Hydrogen was also the subject of a multilateral conference involving METI on the margins of the Berlin Energy Transition Dialogue in April 2019.





Germany and Jordan are deepening their cooperation on energy

German-Jordanian Energy Partnership

The energy transition in Jordan: great potential but also challenges German-Jordanian cooperation is to be expanded in a new Energy Partnership.

Partner ministry

Ministry of Energy and Mineral Resources (MEMR)

Office headquarters Berlin

Year of establishment

2016 as Energy Dialogue,
2019 as Energy Partnership

Priority issues

- Renewable energy
- Energy efficiency
- Integration into the grid
- Digitisation



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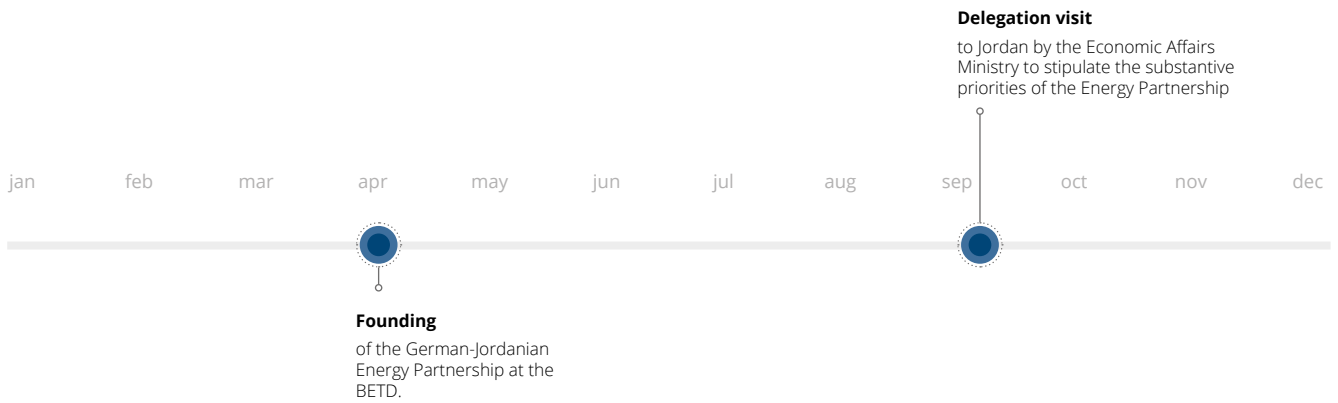


Jordanian delegation at the BETD 2019

The Jordanian energy demand has mainly relied on the import of fossil fuels. There is very great potential for using solar energy, but its integration poses a challenge for the electricity network operator. At the same time, a secure, low-cost and sustainable energy supply is an important driving force for innovation, local economic development and jobs. Lower investment costs, and lower operating costs in many cases, are already making renewable energy competitive. In the light of this, Jordan aims to expand the use of renewable energy, increase local value creation, and boost energy efficiency. Training also plays an important role.

From an Energy Dialogue to an Energy Partnership

In order to support this goal, the two countries agreed in 2016 to set up the German-Jordanian Energy Dialogue with a view to providing an important contribution to the establishment of a sustainable energy system in Jordan. The inaugural meeting of the working group for the German-Jordanian Energy Dialogue was held in Amman in 2018. In further talks, the two countries decided to expand their cooperation. To this end, Minister Peter Altmaier and his Jordanian counterpart Energy Minister Hala Zawati signed a declaration of intent on



the founding of the German-Jordanian Energy Partnership at the Berlin Energy Transition Dialogue (BETD) in April 2019. In September, a delegation of the Economic Affairs Ministry visited Amman to agree on and prepare joint activities between the partners.

Priorities of the cooperation

The main goal of the Energy Partnership is to develop and improve a sustainable energy system, particularly via the increased use of renewable energy and energy efficiency technologies. The fields of action include the dialogue on energy policy, planning and regulation, funding measures and integration into the grid, the funding of energy efficiency, the improvement of the policy environment for private investors, the sharing of expertise, and training in energy technologies and systems.

It was agreed to set up an office in Amman in 2020 to support the new Energy Partnership. The office will foster cooperation between Jordan and Germany in the energy sector.

Socio-economic potential of renewable energy

The increasing use of renewable energy technologies is creating a growing demand for skilled workers, especially with vocational qualifications. For this reason, one of the first joint activities of the Energy Partnership is to work on vocational training in the field of renewable energy and energy efficiency. Not least, the expansion of renewable energy and investment in energy efficiency can create fresh opportunities for the local economy, jobs and growth. For this reason, the Energy Partnership is studying the socio-economic effects of the expansion of renewable energy – particularly with a view to the development of the local labour market and economic effects.





Wind of change in Canada

German–Canadian Energy Dialogue

High-level bilateral discussions and a new government bring fresh energy to the German-Canadian Energy Dialogue. Initial topics for cooperation were defined at expert level, and dialogue sought in the context of multilateral events.

Canada went to the polls in October 2019. The majority of the Canadian people voted for progressive climate and energy goals; the Energy Dialogue is likely to benefit from this in the coming years. However, major regional disparities emerged on questions of using resources and on the degree of climate ambition, so that the dialogue within Canada will be of great significance.

Dialogue with Canada intensified

The 10th Clean Energy Ministerial and the 4th Mission Innovation Meeting were held in Vancouver in May 2019. Representatives of the Ministry for Economic Affairs and Energy met there with colleagues from NRCan and proposed the following potential fields for cooperation, amongst others: the integration of renewable energy, carbon pricing, long-term energy strategies and energy research topics like hydrogen and power-to-X. A bilateral meeting at Director-General level took place later in the year at the IEA Conference on System Integration of Renewables in Berlin. The 2019 Berlin Energy Transition Dialogue (BETD) was attended not least by Jonatan Julien, Minister of Energy and Natural Resources in Québec. Discussions have also taken place at expert level on sector coupling, electrification and energy efficiency in buildings and industry. Further meetings are planned for 2020.

Partner ministry

Natural Resources Canada (NRCan)

Priority issues

- Sector coupling and renewable energy
- Energy efficiency
- Hydrogen



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5
steering group
meetings, WG meetings
+ bilateral discussions

3
key issues



Saving energy across the board: focus on industry and municipalities

German–Kazakh energy cooperation

Cities and the economy in Kazakhstan are growing. Energy demand has also been rising for years. There is particularly great potential to save energy in energy-intensive industry. Municipalities also offer good opportunities for energy efficiency, especially in public buildings.

Kazakhstan has rich resources of raw materials and exports oil and natural gas. In order to overcome the country's concentration on fossil fuels in the long term, and to modernise its technology, Kazakhstan is aiming to shift to a green economy.

Kazakhstan intends to cut its climate-damaging emissions by 15 percent by 2020 from the 1990 level. However, energy consumption in energy-intensive sectors and in buildings is high and continually rising. In view of the great potential for energy saving, bilateral cooperation is focused not least on this issue.

Kazakhstan recognised early on that municipalities can play a key role in the attainment of the energy policy goals. The energy cooperation is supporting municipal administrations by providing practical recommendations for the modernisation of their energy infrastructure. A key element of this was the introduction of the energy and climate management system in a pilot municipality.

Numerous stakeholders from Kazakhstan talked with experts from Belarus, Russia, Uzbekistan, Ukraine and Germany about the latest energy-related challenges facing towns and cities in the “Urban Energy Infrastructure” dialogue.



Partner ministry

Ministry of Industry and Infrastructural Development

Year of establishment 2012

Priority issues

Energy efficiency in industry and municipalities

Website

<http://miid.gov.kz/>



Contact

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4

key issues



6
workshops in the
EP/ED countries



2

steering group
meetings, WG meetings
+ bilateral discussions



1

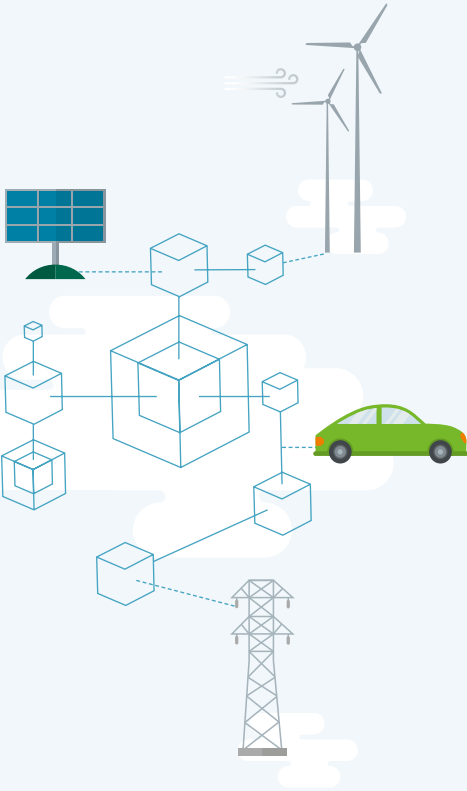
study tour/
delegation



2

publications





Moving towards innovation in the energy sector: decentralisation, blockchain and start-ups

German-Mexican Energy Partnership

Decentralisation and digitisation are key elements of the energy transition and have been priorities in the Energy Partnership. The publications produced on these topics offered food for thought in discussions with representatives of government, private sector and civil society at expert events.

Partner ministry

Energy Ministry (SENER)

Office headquarters Mexico City

Year of establishment 2016

Priority issues

- Inclusive electricity sector
- Integration of renewable energy
- Energy efficiency in industry
- Transparency in the oil and gas sector
- Participation in international forums

Website

www.energypartnership.mx



Workshop with start-ups, established companies and funding institutions at the "Industrial Transformation Mexico" in November 2019 in León, Mexico

The bilateral Energy Partnership between Germany and Mexico has developed into a central dialogue platform for the energy transition for both sides. Whilst in previous years the focus was on the high-level political dialogue, the focus shifted in 2019 to substantive work on decentralisation and digitisation, involving energy experts from both countries.

In-depth expert dialogue between the two countries on trends in the energy sector

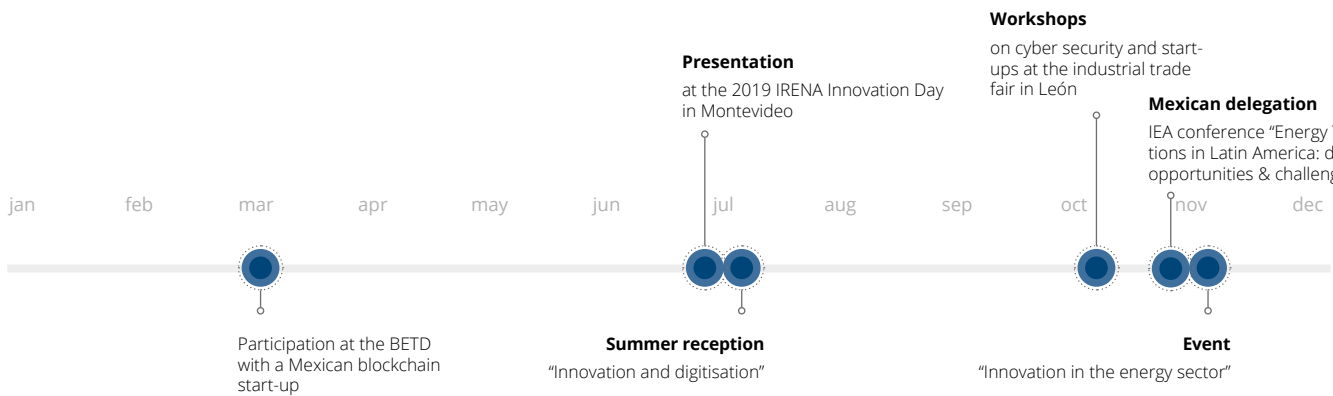
More than 100 participants from the government, the private sector, civil society and the embassies of several countries discussed "Trends in the energy sector: innovation and digitisation" at the summer reception in Mexico City hosted by the Secretariat of the German-Mexican Energy Partnership. The discussions were continued in November, when 200 experts met to discuss "Innovation in the energy sector: digitisation, financing and decentralisation". The event was organised by the Secretariat of the Energy Partnership in cooperation with other GIZ programmes, the Mexican banking association and the Inter-American Development Bank.



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Blockchain, cyber security and start-ups

The increasing degree of digitisation of key areas of commerce and society is boosting the level of interest both in data security and in new technologies like blockchain. Start-ups in particular are driving innovation in the energy sector and offering new technical solutions.

In view of this development, the Energy Partnership helped to fund the participation of a Mexican start-up at the BETD in Berlin in March. In July, the Secretariat of the Energy Partnership presented its publication "Blockchain meets Energy" in Montevideo, at the invitation of IRENA.

October saw the first Industrial Transformation Mexico (ITM), based on the format of Hannover Messe. During the trade fair, the Energy Partnership organised a panel discussion on cyber security and its growing importance against the background of the energy transition. Also, a workshop was held with a German start-up incubator on cooperation between start-ups and established companies.

Furthermore, a study was initiated into ways to use blockchain and similar technologies in the Mexican energy sector.

Decentralisation

Representatives of the states and municipalities in Mexico are displaying a rising interest in the energy transition. The Energy Partnership is a key contact for them.

In November, the president of the Mexican solar power association and the Deputy Environment Minister of the State of Puebla attended the conference "Energy Transitions in Latin America: drivers, opportunities & challenges" organised by the IEA in cooperation with the German-Brazilian Energy Partnership, and presented experience from Mexico with the energy transition at subnational level and in the private sector.





Pulling in the same direction for a sustainable energy future

German–Moroccan Energy Partnership (PAREMA)

A vigorous and intensive energy policy dialogue promotes partnership-based approaches and innovative solutions for a decarbonisation of the energy supply and climate-neutral fuels.



Partner ministry

Ministry of Energy, Mines and Environment (MEME)

Office headquarters Rabat

Year of establishment 2012

Priority issues

- Dialogue on national and regional energy policy
- New technologies and research
- Energy efficiency
- Support for the private sector in the energy sector

Website

www.energypartnership.ma



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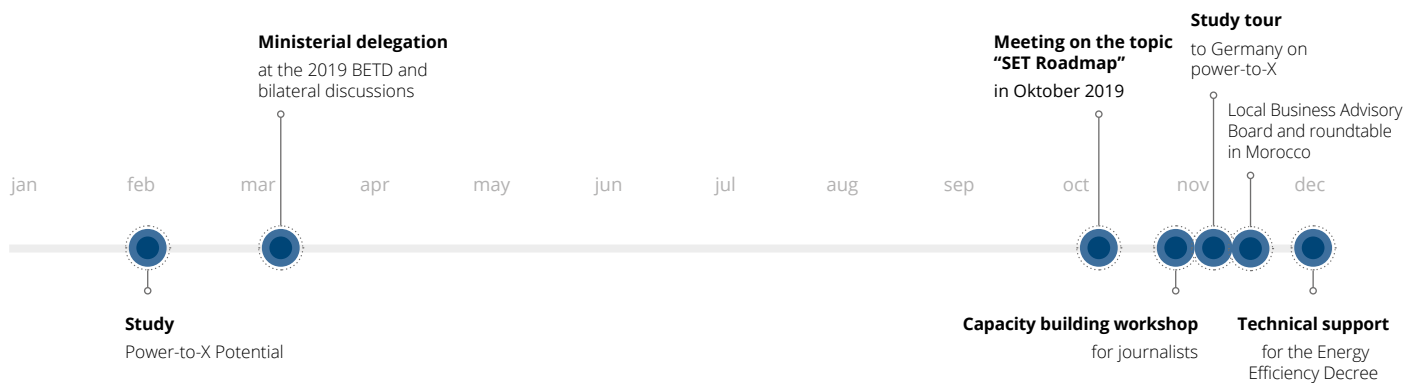
Bilateral meeting between State Secretary Andreas Feicht of the Economic Affairs and Energy Ministry and Aziz Rabbah, Morocco's Minister of Energy, Mines and Environment

Encounters on the margins of the Berlin Energy Transition Dialogue, the Clean Energy Ministerial, the Ministerial Meeting of the International Energy Agency and the 10th German-Arab Energy Forum: the many high-level meetings permitted an ongoing discussion at the level of ministers and state secretaries on national energy policy between Germany and Morocco and a strategic orientation for the two countries' Energy Partnership.

Power-to-X getting going in Morocco

There was an increased willingness and commitment on the part of the two countries to cooperate more intensively on energy efficiency and new technologies, and particularly on power-to-X.

The first analysis of the potential of power-to-X in Morocco was drawn up in the context of the Energy Partnership in cooperation with the Moroccan research institute IRESEN and with the support of the Fraunhofer Institute ISI, IMWS and IGB.



The Moroccan Minister took the opportunity of the findings of the study to set up a power-to-X Commission tasked with producing a power-to-X roadmap. The Commission was helped by a study tour to Germany organised under the aegis of the Energy Partnership. The insights into the technology itself, the industry behind it and the political debate will be taken on board in the roadmap. The analysed potential of Morocco also fed into the overarching policy debate in Germany, because Morocco is interested in producing hydrogen not only for its own market, but also in the long term for export.

Sustainable electricity exchange

The discussion of electricity trading between Europe and Africa was continued last year, because Spain imported electricity from Morocco for the first time in 2019. The Energy Partnership is supporting the process of the Sustainable Electricity Trade (SET) Roadmap, which aims to facilitate cross-border electricity trading of renewable energy between producers and consumers in PPAs. Also, the Energy Partnership has launched a discussion about certification systems for renewable energy in Morocco.

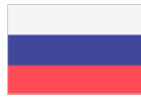
Media for a renewable future

Germany's experience shows that the media play a significant role in the development of the energy transition. For this reason, the Energy Partnership held a workshop on the energy transition in Morocco for Moroccan journalists. It was opened by Energy Minister Aziz Rabbah and German Ambassador Dr Götz Schmidt-Bremme.

Together with the business community

At the second session of the Local Business Advisory Board of the Energy Partnership with representatives of the German energy sector, and at a roundtable in Berlin on the margins of the Ghorfa Energy Forum, the Energy Partnership supported economic cooperation in the private sector to foster more investment and specific projects.





A fresh boost to the dialogue on energy efficiency and renewable energy

German–Russian dialogue on energy efficiency and renewable energy

Russia, one of the world's most energy-intensive countries, has not only oil and gas reserves, but also some of the greatest potential for the expansion of the use of renewable energy and energy efficiency. The ratification of the Paris Agreement, the first steps towards the expansion of renewable energy and the growing importance of hydrogen offer new potential for cooperation.

Partner ministries

Ministry of Energy
Ministry of Economic Development
Ministry of Construction and Housing

Year of establishment 2010

Priority issues

- Expansion of renewable energy
- Energy efficiency
- Powerfuels

Contact

Bärbel Warnig
dena

New aspects emerged in the work, with support for the climate and energy transition dialogue, the first trade fair for renewable energy, the Photovoltaic-Legal project for specific Russian-German pilot projects, and cooperation at municipal level.

In the field of energy-efficient buildings, cooperation was extended to include the improvement of the energy performance of existing buildings. In a first step, three regions were identified for this; these aim to deploy energy efficiency solutions for the first time in the context of existing retrofitting programmes in the coming years.

An energy management and climate action management system offered by dena will help Russian towns and cities to identify their potential for energy efficiency and to develop appropriate measures. Out of more than a hundred municipalities in forty Russian regions, the municipalities of Lukhovitsy (Moscow Oblast) and Neftekamsk (Republic of Bashkortostan) have qualified as pilot areas for the implementation of the dena management system.

Even if the official targets for the expansion of renewable energy are still low, individual measures, such as the new-build of smaller-scale generation capacity, are creating new areas for cooperation. At a roundtable event on hydrogen and new gases in November, the approximately 60 participants from business, science and government displayed great interest in cooperation.

2

steering group meetings, WG meetings + bilateral discussions

3

key issues

14

workshops in the EP/ED countries





Energy debate centred around structural change in coal-mining regions and hydrogen

South African-German Energy Partnership

In 2019, the issues of structural change in coal-mining regions (a just transition) and hydrogen technology / power-to-X were at the centre of the energy debate in both South Africa and Germany. The focus of cooperation between the two partner countries was therefore placed on these core issues.

Partner ministry

Department of Mineral Resources and Energy (DMRE)

Office headquarters Pretoria

Year of establishment 2013

Priority issues

- Structural change in coal-mining regions
- Hydrogen technology / power-to-X
- Energy efficiency

Website

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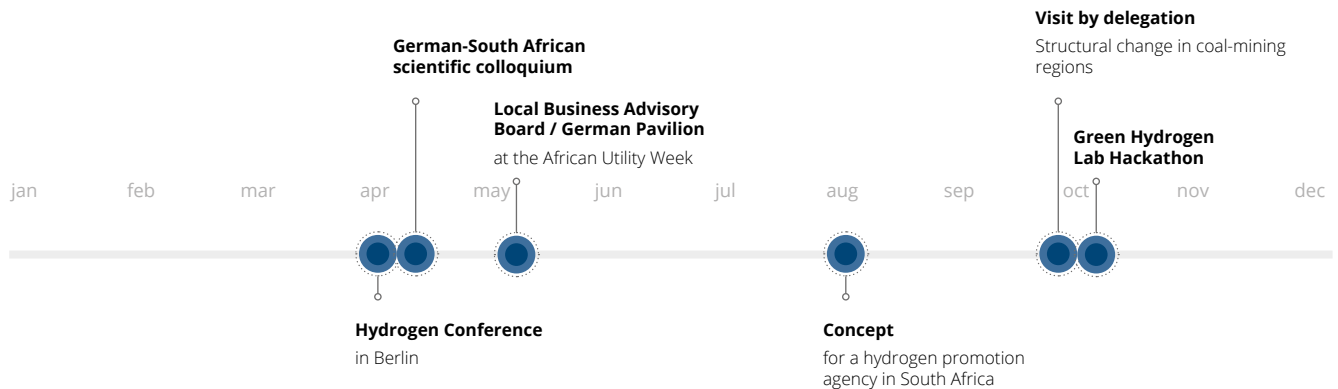


Tour of a biogas plant in Paarl, South Africa

Structural change in coal-mining regions /a just transition

In view of its ageing power plant fleet, South Africa needs to decide how to replace old coal-fired power plants with new capacity. In the period from 2030-2050 alone, roughly 24 gigawatts of coal-fired power plant capacity will reach the end of its lifetime. South Africa published an Integrated Resource Plan for the period to 2030 in October. In it, the South African Government attaches great importance to the issue of the just transition: the question of how the economic restructuring of existing coal-mining regions can take place in a socially acceptable manner.

Germany used the Energy Partnership to share experience made with structural change in coal-mining regions with South Africa. One element of this was a study tour for South African experts to Poland, Germany and Belgium. The delegation visited structural change projects in the Niederlausitz region and gained insights in Berlin into the findings of Germany's "Coal Commission". In South



Africa, the Secretariat of the Energy Partnership integrated experience from Germany into workshops.

Hydrogen technology / power-to-X

If there was a trending energy policy issue in Germany in 2019, then a leading candidate was the debate about hydrogen and power-to-X (electricity-based synthetic fuels). Both countries have been working on this issue in the South African-German Energy Partnership since 2016. In 2019, the partners jointly presented the concept for a South African funding and coordination institution similar to Germany's NOW (National Organisation Hydrogen). South African representatives took part in a conference organised in Berlin in April involving several Energy Partnerships and Dialogues. At the event, they presented the concept and South Africa's potential for hydrogen and power-to-X.

Together with the Southern African-German Chamber of Commerce, the Energy Partnership brought South African start-ups together with established German firms. At a Hackathon workshop, the companies worked together on identifying technological challenges for the further deployment of hydrogen technologies, and developed ideas for products to meet these challenges. The Energy Partnership also helped German and South African firms in the development and discussion of financing options for the restructuring of the current coal-based gasoline and kerosene production in South Africa to use renewable sources.

South African-German scientific and business cooperation

In 2019, the Energy Partnership also supported the German-South African dialogue in the field of research and science (e.g. at a German-South African colloquium in April). In May, it convened a Local Business Advisory Board meeting of the German energy transition companies with a presence in South Africa.





Energy transition partners: from the Energy Dialogue to an Energy Partnership

German-Korean Energy Partnership

The German-Korean declaration of intent on the establishment of an Energy Partnership was signed in December 2019. This further upgrades the intensive dialogue on numerous energy-related issues. The Partnership embraces topics from integration of renewable energy into the grid, to energy efficiency and public acceptance.

Partner ministry

Ministry of Trade, Industry and Energy (MOTIE)

Year of establishment 2019

Priority issues

- Renewable energy
- Energy efficiency and conservation
- Green hydrogen
- Smart networks and energy storage systems
- Decommissioning of nuclear power plants



Contact

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adelphi

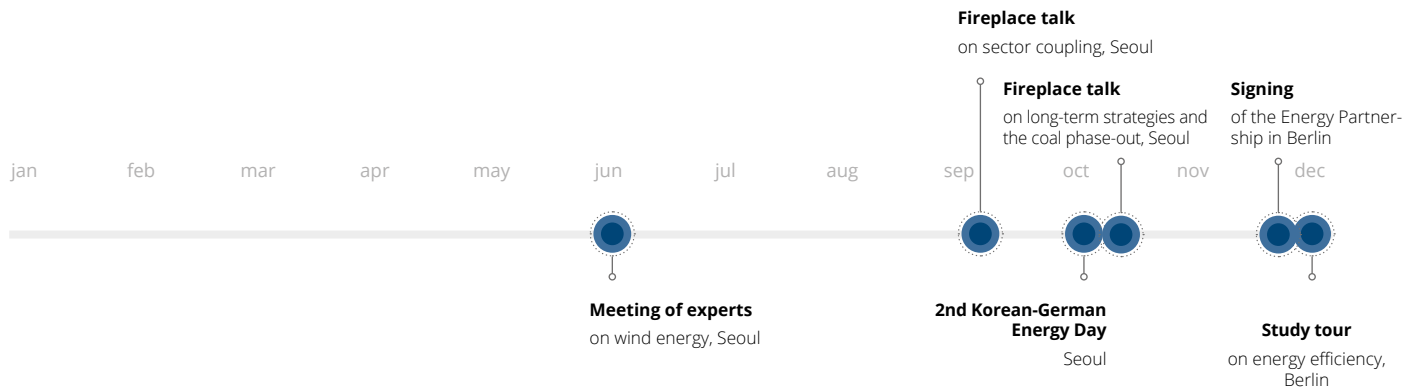


Peter Altmaier, Federal Minister for Economic Affairs and Energy, and Yunmo Sung, Minister of Trade, Industry and Energy (MOTIE) of the Republic of Korea, following the signing of the joint declaration of intent on the establishment of the German-Korean Energy Partnership

In order to upgrade and institutionalise the energy policy dialogue between Korea and Germany, Peter Altmaier, Federal Minister for Economic Affairs and Energy (BMWi), and Yunmo Sung, Minister of Trade, Industry and Energy (MOTIE), signed a joint declaration of intent on the establishment of an Energy Partnership in December 2019. In addition to the dialogue on the expansion of renewable energy and its integration into the system, Korea is particularly interested in Germany's experience with the nuclear phase-out and energy efficiency policy. Germany for its part can benefit from Korea's expertise in the field of smart grids and storage technology, as well as hydrogen mobility.

Even before the founding of the Energy Partnership, 2019 was characterised by a vigorous bilateral dialogue in the form of conferences, discussions and study tours.

The 2nd Korean-German Energy Day was hosted jointly by the BMWi and MOTIE on the margins of the 8th International Renewable Energy Confer-



ence (KIREC) in Seoul in October 2019. The Energy Day was received with great interest. Some 100 experts from government, commerce, science and civil society discussed solution approaches for the integration into the grid of renewable energy and the potential offered by smart grids. Not least, the study on the integration of renewable energy into the system and smart grids in Korea was published in November 2019.

A meeting of experts in Seoul in June 2019 focused on wind energy. Attendees debated policy goals and funding mechanisms, prospects for offshore wind energy, and general questions of public acceptance and participation. The lack of public acceptance for the energy transition is a major challenge for Korea. Against this background, a study was drawn up to discuss possibilities to boost the acceptance of wind and solar energy in Korea, and was presented at the expert meeting.

With regard to the issue of energy efficiency in buildings and industry, a study tour to Germany took place in December 2019, including representatives of MOTIE, agencies, KEPCO the state electricity utility, research institutes and journalists.

The successfully established format of the fireplace talks, a series of discussion forums in Seoul, again offered an ideal setting for smaller groups of experts to talk about various energy issues, such as sector coupling and the coal phase-out.

The organisation of several guest lectures by German experts at Korean universities also helped to whet the appetite of the younger generation in Korea for the discussion on the energy transition and to correct misinformation and prejudices.





Cooperation with a future

German-Tunisian Energy Partnership

In 2019, German firms were successful bidders for renewable energy tenders in Tunisia. In addition to the discussion with the private sector, the Energy Partnership focused on energy policy advice and cooperation with civil society.

Partner ministry

Ministry of Industry and Small and Mid-size Enterprises (MIPME)

Office headquarters Tunis

Year of establishment 2012

Priority issues

- Energy policy, with a particular focus on promoting renewable energy and grid development
- Low-emission strategies
- Local market development

Website

www.energypartnership-tunisia.org



Group work on the margins of the autumn school for civil society stakeholders in October 2019

Energy imports and subsidies are a significant burden on Tunisia's budget. In view of dwindling domestic gas reserves, and the constantly rising demand for electricity, diversifying the energy mix remains the key energy policy challenge for Tunisia. The Tunisian government is pursuing ambitious targets for the expansion of renewable energy: by 2030, renewables are to account for 30 percent of the electricity mix (2019: approx. 4 percent).

Successes for German firms in Tunisia

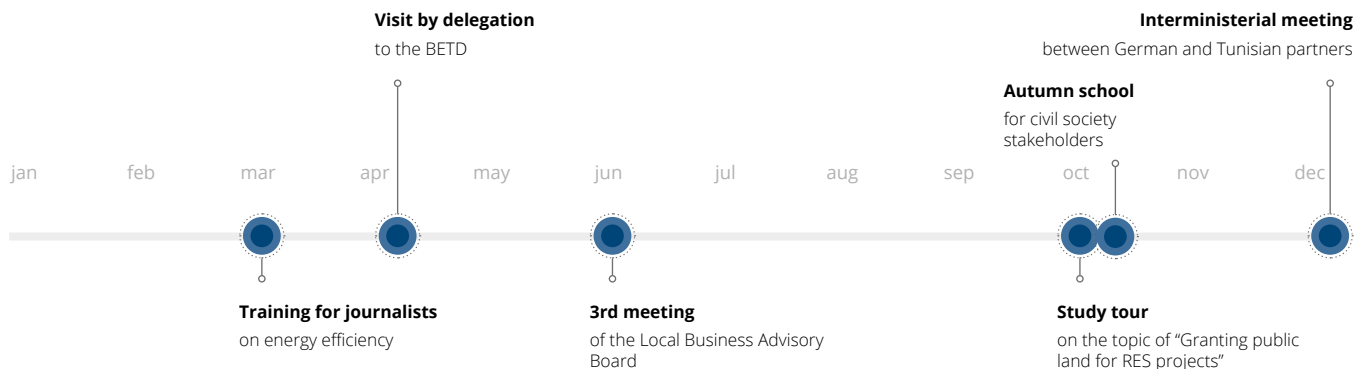
2019 again brought plenty of results for German firms, which won contracts for 60 Megawatt of projects in the Photovoltaic and wind sectors, and now intend to realise them. The Tunisian market remains attractive for German firms and investors in 2020, despite administrative challenges, and the German-Tunisian Energy Partnership is supporting the developments. The Local Business Advisory Board again offered a platform for a lively debate. Regular sessions gave German business representatives the possibility to discuss their challenges and interests with representatives of the Economic Affairs Ministry and the German Embassy.



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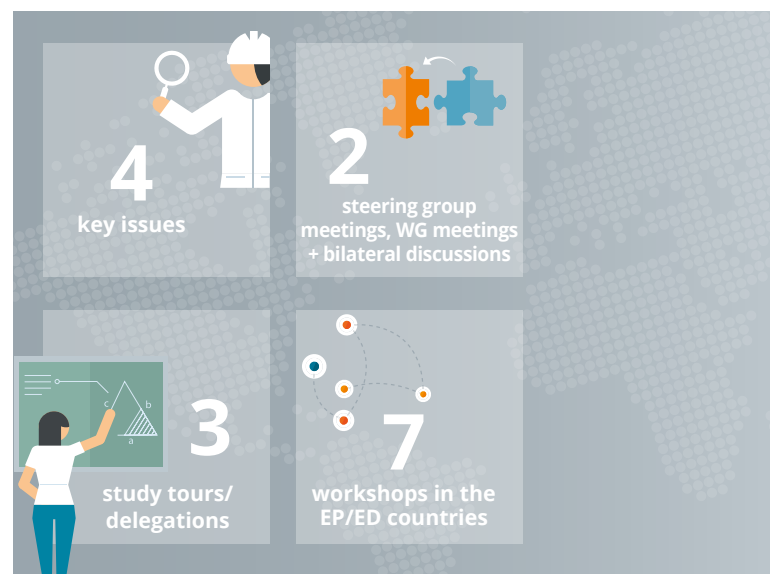
Priorities of bilateral cooperation

One focus of the Energy Partnership in 2019 was on supporting the Tunisian interministerial commission on the use of public land for renewable energy projects; this was assisted by a study tour involving representatives of the commission.

A delegation visit brought together representatives of all the stakeholders involved in the Energy Partnership, and deeper cooperation was agreed on national legislation, electricity market regulation, and the integration of renewable energy into the grid. Further need for support was identified in the fields of biomass and energy efficiency. There was a consensus that the good energy policy cooperation should be continued and intensified in the coming years.

Cooperation with civil society

In order to minimize issues related to public acceptance of the Tunisian energy transition at the outset, a major role is played by the communication of energy transition issues and the engagement of civil society. In order to foster this, the Secretariat of the Energy Partnership organised a number of training events. Following the training sessions on renewable energy issues for journalists the year before, 2019 saw training courses on energy efficiency and conventional energy sources. In addition to learning about energy transition topics, the participants in the autumn school spent a week together in joint activities and discussions with one another and with representatives of the Tunisian energy transition. Those involved included MIPME, the energy agency ANME, and STEG, the Tunisian electricity and gas company.





Partner ministry

Ministry of Energy and Natural Resources

Office headquarters Istanbul

Year of establishment 2012

Priority issues

- Training centre for renewable energy
- Rooftop PV installations
- Offshore wind energy
- ESCO market development
- Energy-efficiency networks
- Storage technology

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German-Turkish Energy Partnership: benchmark for Turkey's energy policy cooperation

Turkish-German Energy Forum

In addition to the expansion and integration of renewable energy into the grid, and the adaptation of the Turkish energy market to the EU energy market, issues new to Turkey like energy performance contracting (EPC), energy efficiency networks and offshore wind energy were discussed in detail.

The German-Turkish Energy Partnership's high-quality expert dialogue between officials and the lasting involvement of the private sector in specific pilot projects has also attracted interest from other countries. It now represents a benchmark for energy relations between the Turkish Energy Ministry and other countries.

Turkey attaches great significance to the market development of Energy Service Companies (ESCO) which deal with energy efficiency. The Energy Partnership has launched two EPC pilot projects which are now being realised by German-Turkish consortia. Technical expertise and project-related experience from Germany will thus help to develop and apply the financing instrument and legal framework in Turkey.

The demand for skilled workers is growing along with the expansion of Turkey's energy market. The involvement of German training providers with the Turkish wind energy association and a Turkish university aims to train up experts for the wind energy market.

Support is being given to Turkey's offshore wind strategy in order to boost the share of renewable energy. High-level Turkish representatives visited an offshore wind farm in Germany in the context of the Energy Partnership. German experts are now working on an offshore wind roadmap.





Establishment of the German-Ukrainian Energy Partnership

A fresh boost to German-Ukrainian energy cooperation on renewable energy, integration into the grid, heat and energy efficiency

Ukraine's economy offers considerable potential for energy efficiency and renewable energy. Ukraine's energy strategy up to 2035 aims to trigger fundamental reforms in the energy sector. Here, Germany is one of the key partners, and significantly expanded its energy policy cooperation with the country in 2019.

Ukraine is experiencing an economic transformation which is being impeded by challenges like high energy intensity and dependence on imports. For this reason, German-Ukrainian energy cooperation in 2019 focused on intensifying the dialogue on renewable energy, integration into the grid, heat and energy efficiency.

In view of the in-depth cooperation, Germany and Ukraine have prepared the conclusion of an Energy Partnership, which is to be signed in 2020. This will place cooperation on energy with Ukraine on a stronger institutional basis. In addition to the improvement of the energy performance of existing buildings, key reforms in Ukraine include the liberalisation of the electricity market and the phase-out of coal. The related questions like integration into the grid and the funding of renewable energy formed a focus for the expert dialogue at several bilateral events.

The municipalities are playing an increasingly important role in the modernisation of Ukraine's energy infrastructure. During a study tour to Germany, numerous representatives from Ukraine were able to gain an impression of the implementation of municipal energy and climate change management; this dialogue was then continued in Kyiv. In future, two pilot projects on the municipal heat transition are to build on this approach.

At the German-Ukrainian Parliamentary Breakfast in 2019, it became clear that Ukraine's efforts to reform its energy sector offer numerous areas for specific cooperation projects – the projected 2020 German-Ukrainian Energy Day offers an ideal platform.



Partner ministry

Energy and Environment Ministry

Office headquarters Berlin

Year of establishment

Project launched in 2020

Priority issues

- Energy-efficient construction
- Integration of renewable energy
- Municipal heat transitions

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The energy transition is continuing to gain traction: support for policy on renewables in the Gulf region

Emirati-German Energy Partnership and energy dialogue with the Gulf region

Renewable energy is being expanded in the United Arab Emirates: costs are falling, and the pace is being stepped up. The Energy Partnership and energy dialogues are constantly supporting this process so that the energy transition can continue successfully in the UAE and other countries in the region.

Partner ministry

Ministry of Energy and Industry

Office headquarters

Berlin (headed by Navigant)

Abu Dhabi (bilateral chamber of commerce)

Year of establishment 2017

Priority issues

- Expansion of renewable energy
- Electricity market, flexibility and grids
- Energy efficiency
- Hydrogen and synthetic fuels
- Sustainable transport



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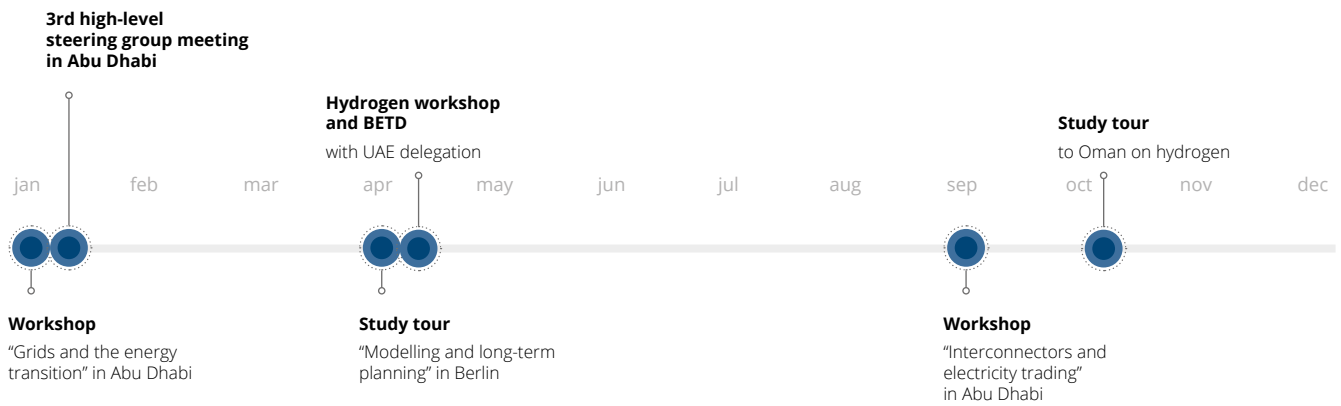
Director-General Herdan of the BMWi welcomed the participants in the expert workshop on sector coupling

The energy system of the UAE is still largely based on oil and gas, but the energy transition is well underway here too. In 2019, the implementation of the expansion of renewables in the UAE again hit the headlines: in Abu Dhabi, a solar farm with a capacity of 1,177 megawatt came on stream – one of the largest such installations anywhere in the world. In Dubai, an auction for funding for a solar farm achieved a record price of 1.5 cents per kilowatt hour.

Since these technologies are new to the UAE's electricity system, the rapid expansion of solar energy is raising issues which the Energy Partnership was able to discuss in its third year, building on what have grown into very close relations.

Close partnership to support the expansion of renewables

In 2019, in order to make joint progress on the energy transition, the Energy Partnership again made use of a blend of various discussion formats. High-level political meetings saw a vigorous dialogue on common ambitions in the field



of renewable energy and energy efficiency. Also, key issues of special priority for the Energy Partnership were identified, such as international trade in renewable energy.

A week-long study tour on long-term planning and modelling took place in 2019 to foster the energy transition in the UAE. The study tour was of great interest to the UAE delegation because the UAE's energy strategy is to be updated in the near future. More precise modelling of the energy system can permit a better estimate of the potential of renewable energy and can thus anchor more ambitious goals in the strategies.

The energy transition requires cooperation amongst different stakeholders both nationally and internationally – and the Energy Partnership serves as a platform for this. Electricity trading between countries, for example, makes it possible to integrate renewable energy in a low-cost and reliable way. To this end, the Energy Partnership produced a detailed study and organised a high-level workshop in Abu Dhabi on the margins of the World Energy Congress, in order to highlight the processes and advantages of international electricity trading, taking Europe as an example. A committee on hydrogen was set up in the UAE in order to further intensify the work on this issue in the context of the Energy Partnership.



Active energy dialogue with countries on the Arabian peninsula

There was also a multifaceted dialogue in 2019 on relevant energy transition issues with other countries on the Arabian peninsula. At a conference in Oman, German and Omani delegations held a detailed discussion on hydrogen strategies and potential exports. Another special focus was on the expansion of the energy dialogue with Saudi Arabia, in order to foster the incipient energy transition in the largest country on the Arabian peninsula. To this end, talks took place in Berlin and Riyadh at political and expert level. Economic Affairs Minister Altmaier and the Saudi Finance Minister signed a declaration of intent on the margins of the Joint Economic Commission on 18 December 2019.



Dialogue intensified with various states

U.S.-German Energy Dialogue

More and more states in the U.S. are committing to ambitious energy and climate targets. The Energy Dialogue supports this development via bilateral discussions. 2019 saw the first Energy Day with the New England states.



Director-General Herdan (BMW) spoke at the 3rd California-Germany Bilateral Energy Conference in San Diego, California

Priority issues

- Long-term vision and scenarios
- Resilience and security of supply
- Electricity market design
- Flexibility sources, storage and hydrogen
- Renewable energy
- Energy efficiency
- Electric mobility



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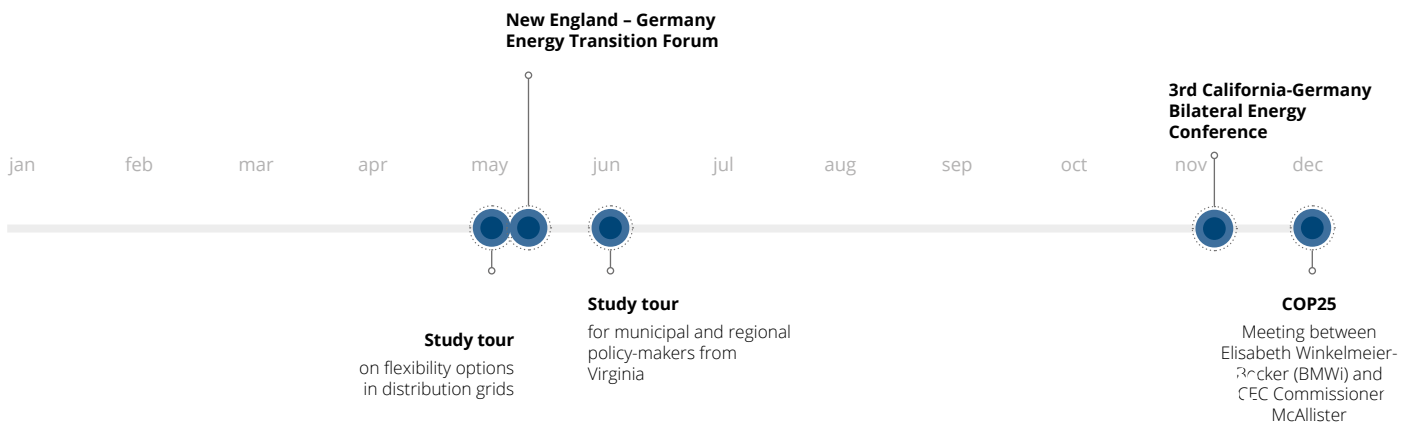
Despite the withdrawal from the Paris Agreement initiated by the federal administration, 2019 was a good year for the energy transition in the United States.

More states than ever before set themselves the target of covering 100 percent of their electricity demand from clean energy, driven not least by the growing demand for this from businesses and consumers. The transformation can also be seen in the very high expansion statistics for wind energy.

The Energy Dialogue with the United States supports these efforts and encourages individual states and electricity system operators to progress their energy transition. Through the bilateral dialogue, experts and decision-makers can share experience and learn from each other.

Energy transition pioneers in discussion

A first, successful Energy Day with the New England states was held in May in cooperation with the government of Massachusetts. High-level government representatives from five New England states met on the campus of Harvard University with Director-General Herdan (BMW) and system operators, industry, science



and civil society from both sides of the Atlantic to discuss the restructuring of the electricity system, the transport and heat sector, and the expansion of offshore wind.

A high-level delegation from Minnesota gathered information about the German energy transition in June. The energy dialogue with Minnesota, which has been ongoing for years, has resulted in initiatives for legislation in Minneapolis aiming to make use of the commercial opportunities of the energy transition and to become a pioneer in the region.

Some 200 energy experts from Germany and California met in San Diego for the 3rd California-Germany Bilateral Energy Conference (CGBEC), which was held this year in the context of Energy Storage North America, America’s largest energy storage convention. The thematic focus included the exploration of flexibility options, and in particular new technologies and energy storage units connected to the grid. Director-General Thorsten Herdan and California’s Lieutenant Governor Eleni Kounalakis and Energy Commissioner David Hochschild expressed their appreciation of the importance of the energy policy partnership between Germany and California, and announced that the 4th CGBEC would be taking place in 2020.

Policy dialogue at all levels

During a study tour to Germany, mayors and regional authorities from the Greater Washington area visited companies, research centres and the Bundestag to learn about Germany’s energy transition. A few weeks before that, in May, Commissioners from North Carolina and Georgia travelled to Berlin with a group of distribution system operators. In December, Parliamentary State Secretary Elisabeth Winkelmeier-Becker (BMW) met with Commissioner Andrew McAllister of the California Energy Commission in Madrid at COP25.

The Energy Dialogue will continue to follow and foster the energy transition of both countries in 2020 by organising targeted activities, undertaking public relations work and focusing on exciting issues.



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