

# ANNUAL 20 REPORT 24

Bilateral Climate and Energy Partnerships and Energy Dialogues



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# Dear reader,

Looking back on 2024, it is clear that we still face challenges – albeit of a kind that also present many new opportunities.

Multiple crises and conflicts, whether on the front lines or in the digital space, whether caused by natural disasters or unforeseen weather conditions, are bringing change across a broad spectrum.

We can harness that very change to develop new ideas and drive progress. In this regard, 2024 was a year of solidarity and strong partnerships. Our sense of common purpose – to drive the energy transition globally through climate-neutral technologies and to become more resilient and competitive – is greater than ever. Now is the right time to pool this collective energy for change and in doing so actively support Germany and the global community on their path to a fair, successful and sustainable energy transition.

In Germany, renewable power set new records in 2024. Almost 60 per cent of the electricity generated came from wind energy, solar and biomass. Coal-fired power fell to a historic low of 22.8 per cent.

To build on this positive trend, we need global alliances, a global team. The opportunities for the German and global economies are enormous – from rolling out grid infrastructure and developing renewable energy storage solutions to trading technology and creating a skilled workforce, all of which are key to generating future wealth and jobs. That is precisely where our 30-plus bilateral Climate and Energy Partnerships come in. In their role as a key German foreign trade and energy policy instrument, the partnerships spent last year building robust foundations and raising

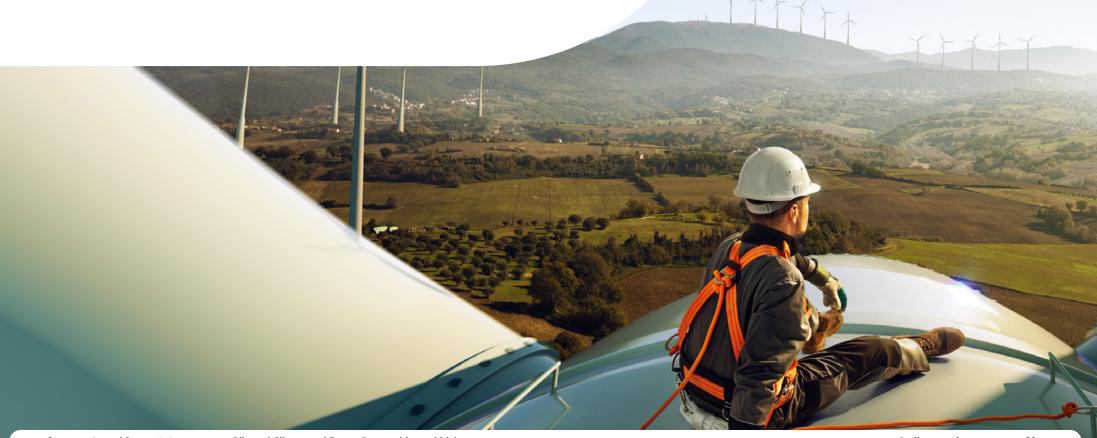
awareness of future solutions – solutions that will guarantee a stable, secure and affordable energy supply, deepen trade relations and drive forward the decarbonisation of the economy in Germany and its partner countries.

This annual report will give you an overview of the main energy-related issues and activities in our partner countries as well as an insight into what has been achieved by the Climate and Energy Partnerships. All these measures have a common purpose in that they bring Germany closer to climate neutrality by 2045, support efforts to make the energy transition a success and drive progress towards the stated goals in our partner countries. They make us more competitive and more socially resilient.

As well as supporting the efforts of our partners to meet their international (climate) treaty obligations, this approach to bilateral cooperation in the form of Climate and Energy Partnerships can also act as a lever and a springboard for new multilateral agreements and global progress.

The German Federal Ministry for Economic Affairs and Climate Action (BMWK)

The Bilateral Climate and Energy Partnerships and Dialogues.



# =

#### **MISSION**

Built on enduring trust and successful collaboration, the partnerships enhance climate cooperation, accelerate the expansion of renewable energy and energy efficiency and support partners in reaching their climate targets.



# The bilateral Climate and Energy Partnerships work globally



Learn more about the formats: 🗷 Climate and Energy Partnership, Energy Dialogue and Hydrogen Partnership



# Three goals to forward the energy tranistion



# **Energy Security**

# Energy security is global teamwork.

The Climate and Energy Partnerships (CEPs) aim to enhance energy security by reducing dependence and increasing diversification. They foster international cooperation to build resilient supply chains and decarbonise energy systems and economies. This helps to secure future supplies of decarbonised energy carriers and strategic products. By driving the global adoption of renewable energy, hydrogen and energy efficiency technologies, the CEPs help to shape a more stable and sustainable energy future.



# **Decarbonisation**

# Clean energy is the foundation of our shared future.

The CEPs contribute to global climate action by supporting the implementation of mitigation measures in the partner countries. Crucial to this is the expansion of renewable energy and energy efficiency. The CEPs offer policy advice, encourage dialogue between businesses and governments and promote industrial cooperation. By fostering trade in decarbonised energy resources and products between Germany and the partner countries, they are helping to achieve Germany's goal of climate neutrality by 2045.



# **Foreign Trade Promotion**

# Climate friendly innovation drives sustainable growth.

Private investment is crucial for transforming energy systems and decarbonising industries. The CEPs act as an intermediary between private sector actors and governments to reduce investment barriers and promote trade. This happens through bilateral exchange at the government level, aimed at supporting private investment in energy projects politically, among other things. In addition, concerns about investment obstacles faced by German and local companies are collected, for example through local business councils, and addressed at the political level.



# The Climate and Energy Partnerships include different forms of cooperation

The declared aim of the Climate and Energy Partnerships (CEPs) is to shape a successful global energy transition that combines security of supply, decarbonisation of industry and foreign trade promotion with effective climate protection. The opportunities, challenges and strategies are discussed via many channels and platforms, for example, regular steering group meetings, workshops, bilateral talks, delegation trips and virtual formats.

# **Energy Dialogues**

Countries that aim to promote private sector activities and seek to strengthen cooperation between the public and private sector are most likely to engage in cooperation in the form of an energy dialogue. An energy dialogue is the preliminary stage of a CEP. As in a partnership, specific dialogue topics and a work plan are defined in an energy dialogue. A central feature is the organisation of an Energy Day, which promotes exchanges on the agreed topics and strengthens cooperation between government and private sector stakeholders.

# **Climate and Energy Partnerships**

CEPs are institutionalised cooperation arrangements based on a JDoI between Germany and one of its partner countries. Most CEPs are supported by a secretariat, a dedicated team based in the partner country that facilitates the implementation of the partnership.

To set the strategic direction of the partnership, a high-level steering committee meets once a year. Parallel to this, technical working groups and task forces ensure a continuous and trusting dialogue between the partners from the beginning of the partnership. They are usually chaired by department heads and serve as a platform for discussing and implementing concrete measures. With an annual Energy Day in the partner country and high-level participation in important conferences, particularly the Berlin Energy Transition Dialogue (BETD), these working groups foster exchanges between the stakeholders.

In addition, regular forums are organised for exchanges with the private sector, including local business councils and dialogues with relevant stakeholders, such as German Embassies and German Chambers of Commerce Abroad (AHK). These activities strengthen cooperation between the public and private sector and contribute to the successful implementation of CEPs.

# **Hydrogen Partnerships**

Germany is working with a growing number of countries to accelerate the expansion of green hydrogen. While hydrogen is also a core topic within the scope of existing CEPs, special hydrogen partnerships have been established with strategically important export and import countries to ramp up the development of green hydrogen.

All forms of cooperation are formally agreed in a Joint Declaration of Intent (JDoI).



# Climate and Energy Partnerships: an opportunity for sustainable growth and trade

Realising the energy transition and achieving the Paris climate targets is not only a global challenge, but also fundamental when it comes to ensuring sustainable economic development and expanding reliable trade relations.

Success in this area hinges on the ability of global stakeholders to systematically increase the proportion of energy generated from renewables and boost energy efficiency. With this in mind, the international community set itself groundbreaking goals for achieving the Paris climate targets when it came together at COP 28 in December 2023. These include doubling energy efficiency and tripling capacity for using renewable energy sources, both by 2030.

It is clear that it will be essential to make the most of sustainable energy sources and diversify suppliers of raw materials and energy in order to attain the COP 28 goals.

A reliable energy supply is needed to enable industrial growth and the emergence of new markets. Developing capacities for renewable energy use has the potential to expand trade networks and unlock import and export opportunities for Germany and its partner countries.

Strong trade relationships and cooperation as partners at governmental level are key in this context. As a country with limited access to energy sources, Germany is dependent on energy and raw-material imports to operate its renewable energy technologies. At the same time, its experience and expertise in the area of energy and climate offer tremendous potential for new and innovative solutions and for employing additional experts.

# Trade partnerships and economic opportunities based on country-specific approaches

Each CEP partner country faces its own unique context and challenges – from fossil fuel dependence to regulatory frameworks – that influence the transformation process in many different ways. This is why context- and country-specific approaches are crucial. Individual strategies strengthen national energy agendas here. Partner

security of both nations.

countries engage in bilateral dialogue, defining their strategic

guidelines at governmental level to ensure that the transition to renewable energy technologies is adapted to national circumstances. At the same time, this dialogue leads to joint initiatives for driving renewable technology transfer, promoting sustainable investment and improving the energy supply



This is where Germany's dependence on imports can be leveraged as an opportunity to generate incentives for sustainable, long-term cooperation with the CEP countries and ensure lasting supply security.

This promotes trade between Germany and its partner countries and helps to bring about mutual economic growth. German Chambers of Commerce Abroad (AHKs), with their knowledge of local markets and large network of German and local companies, play a significant role in deepening cooperation with the CEP countries.

With 150 locations in 93 countries, the AHKs are key actors in building bridges between German enterprises and partner-coun-

try companies. Cooperation between the CEPs and the AHKs generates valuable synergies that give rise to strong networks, drive investment projects and unlock business opportunities for companies from Germany and its partner

# Joining forces for the global energy transition

The key to a successful energy transition is ensuring that all relevant political and economic actors work together in a spirit of trust, as it is essential to adopt a holistic perspective. In this context, the bilateral CEPs serve as an opportunity platform, promoting political dialogue, providing prospects and setting the right trajectory for both Germany and its partner countries. They bring together the interests of German and local companies, improve investment conditions and facilitate market access and stabilisation.

The activities that are carried out in Germany and its partner countries do not just have an impact at bilateral level. In many cases they also kick off and drive multilateral initiatives to accelerate

Team work unlocks
business opportunities
for our partners
and Germany.

global

progress

implementation of international (climate) agreements.

In this way, the Climate and Energy Partnerships combine economic cooperation with sustainable climate action and create long-term development prospects for everyone involved.

countries.



# Facts and Numbers

132 High-Level dialogues

1435 local and German companies connected



240 trainings and workshops

**55** delegation trips

57 published studies



# Additional thematic areas in which the partnerships are active

#### **Carbon Management**

Carbon capture, utilisation and storage (CCUS) technologies can support the achievement of climate targets in climate and energy partnership (CEP) countries. They also impact industrial value creation and the energy sector and have become a decisive factor for economic competitiveness. In 2024, the cross-cutting theme Carbon Management used participatory approaches to determine the level of knowledge and application of CCUS technologies in partner countries. Workshops were held and a survey was conducted with representatives of the implementing organisations. A qualitative analysis is intended to supplement the cross-national assessment of the status of the application of CCUS technologies.

To enhance CCUS expertise in partner countries, efforts also focused on examining German experiences in the area of carbon management, as there have been considerable developments in recent years. Strategies for carbon management and negative emissions are currently being developed. These experiences were summarised in a representative set of slides to facilitate knowledge transfer to partner countries.

#### **Civil Society and Think Tanks**

As a societal transformation, a just energy transition can only succeed if all stakeholders actively participate in advancing it. The cross-cutting topic 'Cooperation with Civil Society and Think Tanks' aims to enable this process, develop innovative solutions and increase overall acceptance of the energy transition. In 2024, the team organised various activities, including a workshop on civil participation and a qualitative needs analysis in partnership countries. It also identified trending topics, provided relevant data and strengthened specialised networks. Since women are key actors in the energy transition, it boosted their crucial role through country activities and the global Women Energize Women campaign.

#### **Communication**

Coherent and strategically planned communication is vital to ensure that Climate and Energy Partnerships have a greater impact in our partner countries and in Germany. Targeted media and public relations work helps to build confidence in Climate and Energy Partnerships as a government instrument while also highlighting what has been achieved and gaining and maintaining the interest of key stakeholders. The primary goal

of communication in this area is to present complex energy transition issues clearly and understandably. In doing so, the focus is on tailoring content to reflect the different local circumstances and needs of each partner country. At the same time, it is important to keep local populations informed about the issues addressed by Climate and Energy Partnerships in order to create a broad understanding of their international activities and their contribution to the global energy transition. As well as promoting transparency, this approach strengthens awareness of the partnerships and their crucial role.

# Digitalisation and Protection of Critical Infrastructure

The objective of the cross-cutting theme Digitalisation and Protection of Critical Infrastructure is to support partner countries in advancing the digitalisation and cybersecurity of energy systems. In 2024, the focus was on organising a multinational cybersecurity exercise that brought together participants from four continents. This initiative included a workshop aimed at exploring opportunities for international collaboration to strengthen the cybersecurity of energy systems globally. Looking ahead to 2025, the primary activity will be the establishment of



the Alliance for Cybersecurity in Energy Systems, a partnership between Germany, Israel, the United States and Australia. In addition, the Germany Energy Agency (dena) will work to identify the specific interests and challenges faced by each partner country. Based on these findings, a tailored portfolio of products will be developed and made available to implementing organisations and the countries involved to further enhance their energy system security.

# Hydrogen

The cross-cutting theme Hydrogen aims to solidify Germany's role as a global technology leader in green hydrogen, secure imports and support climate protection in partner countries. Proven participatory approaches leverage the knowledge of implementing organisations to foster learning between Germany and its partners. In 2024, the primary focus was on enhancing knowledge exchange, identifying cross-CEP needs and fostering synergies. Looking ahead to 2025, activities will prioritise knowledge sharing among implementing organisations to tackle common hydrogenrelated challenges and explore innovative solutions. Insights from these activities will support policy development through comprehensive analyses and briefings with the German Federal Ministry for Economic Affairs and Climate Action (BMWK). Strategic findings will be shared with the BMWK for policy-making and integrated into dialogues with businesses, civil society and experts.

# Skilled Labour for the **Global Energy Transition**

For it to be successful, the global energy transition requires skilled people. German companies and their local partners need a skilled workforce to drive sustainable, decarbonised energy systems. Therefore, the cross-cutting theme Skilled Labour for the Global Energy Transition was established for CEPs. A team of experts initiated key actions for its roll-out in 2024 with the aim of coordinating existing strategies and scaling up best practices to enhance skilled labour initiatives. A kick-off meeting with CEP implementing agencies and a roundtable set the stage for collaboration. Subsequent activities currently being carried out include exchanges, workshops, bilateral sessions and a needs assessment across all CEP partner countries.

## **Start-Up Ecosystems**

Strengthening energy start-up ecosystems is vital for driving innovation in sustainable energy solutions and accelerating the transition to cleaner, more efficient technologies. These ecosystems foster collaboration, attract investment and create jobs, addressing global energy challenges while advancing the achievement of long-term environmental and economic goals. While specific energy demands and objectives differ from one country to another, supporting innovation in the energy sector remains a universal priority. Start-ups and young innovators operate with a flexibility, creativity and agility that larger corporates and government institutions often cannot

match, making it essential to involve them in initiatives in all the energy partnership countries. In 2024, the suggested work packages for the cross-cutting theme focusing on start-up ecosystems included a report showcasing financial instruments and support mechanisms available to energy start-ups and a brief on successful German energy start-ups and best practices that enabled them to develop. They also included a joint workshop with implementing organisations – the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, adelphi, Guidehouse and dena - to discuss and establish the most appropriate ways to collaborate and to plan the most relevant and important initiatives to invest in going forward. Looking ahead to 2025, the task force intends to complete the aforementioned report and brief. In addition to these publications, a workshop meeting with the implementing organisations is planned to discuss the creation of a database of energy start-up ecosystems across energy partnerships.

# Overview of the partnership countries

# Africa (Sub-Saharan)

- **17** Ethiopia
- **19** Namibia
- **21** South Africa

#### Asia

- 24 China
- **26** India
- 28 Japan
- **30** Kazakhstan
- **32** Korea
- **34** Türkiye
- 36 Uzbekistan
- **38** Viet Nam

# Europe

- 41 Ukraine
- 43 United Kingdom

#### Latin America

- 46 Argentina
- 47 Brazil
- **49** Chile
- 51 Uruguay

#### Middle East and North Africa

- 54 Algeria
- **56** Egypt
- 58 Israel
- **60** Jordan
- **62** Morocco
- 64 Oman
- **66** Qatar
- 67 Saudi Arabia
- 68 Tunisia
- **70** United Arab Emirates

# **North America**

- 73 Canada
- **75** Mexico
- 77 United States of America

# Oceania

- 79 Australia
- 81 New Zealand



# Africa (Sub-Saharan)

# Promoting conducive frameworks for energy transition and private sector investment

# Renewable power-to-X (PtX) and green hydrogen takes root in Ethiopia

Energiekooperation

Ethiopia suffers from a high foreign exchange burden resulting from fertiliser imports (USD 1 billion in 2024). As Ethiopia does not produce its own fertiliser, the government is giving high priority to the local production of green fertiliser with green hydrogen produced using excess renewable electricity available in Ethiopia (92% hydropower and 8% wind). Another priority is the development of a local value chain for green hydrogen, green ammonia and green fertiliser. In addition, local production of sustainable aviation fuel for Ethiopian Airlines through the green hydrogen value chain further accentuates the importance of this priority.

With the support of the Ethiopian-German Energy Cooperation project, a national multisectoral technical committee on hydrogen was formed in July 2024 under the Ethiopian Ministry of Water and Energy.

The Energy Cooperation, together with the International PtX Hub, organised basic training on PtX hydrogen pathways for Ethiopia's national hydrogen committee and relevant stakeholders, jumpstarting Ethiopia's national hydrogen strategy development process. The development of a national hydrogen strategy, a stakeholder consultation workshop and deep dive training on green fertiliser and sustainable

aviation fuels are planned for 2025 to further support strategy development.

# Improved framework conditions for energy transition and private investment

The Ethiopian-German Energy Cooperation provided technical and material support to the Ethiopian Petroleum and Energy Authority (PEA) to revise important local regulations with a view to paying the



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way for the energy transition and private sector investment. The regulatory amendments open power transmission and distribution up to local private sector companies, which had been operating under a government monopoly, and enable international investors to import and export power under a public–private partnership with the parastatal monopoly, Ethiopian Electric Power (EEP).

Three new regulatory instruments have also been introduced:

- 1 | Regulations for Energy Service Companies
- 2 | Regulations Establishing a National Energy Efficiency Fund
- 3 | Tariff Regulations and Technical Directives for Electric Vehicle Charging Facilities

The Energy Cooperation provided support by co-organising high-level legal and policy workshops and stakeholder consultation workshops including civil society, the private sector and academia.



In cooperation with the Delegation of German Industry and Commerce (AHK) for Eastern Africa and the German Energy Storage Systems Association (BVES), the Energy Cooperation presented these important amendments and related business opportunities to about 15 German companies taking part in two business delegations to Ethiopia, with a focus on the construction and water sectors and also to the participants in a webinar on energy storage and e-mobility.

18/80 Annual Report 2024 Ethiopian-German Energy Cooperation

# Paving avenues for Namibia's green hydrogen sector through strategic partnerships

In 2024, the Namibian–German Green Hydrogen and Power-to-X (PtX) Partnership played a pivotal role in advancing Namibia's green hydrogen sector through strategic collaboration. By fostering partnerships and facilitating dialogue between governments, industry and civil society, the Partnership aims to support the development of a robust and inclusive ecosystem for sustainable hydrogen development in Namibia and its role in the global hydrogen market.

Namibian German Green

Hydrogen Partnership

# Driving global engagement on green hydrogen

A significant highlight of 2024 was the Partnership's role as a key partner in the Global African Hydrogen Summit endorsed by Namibia's Ministry of Mines and Energy. It provided a platform for high-level discussions among policy-makers, private sector representatives and civil society organisations, reinforcing the importance of collaboration in shaping the future of green hydrogen in Africa.

# BMWK Parliamentary State Secretary Michael Kellner during the high-level steering committee meeting of the Namiban-German Green Hydrogen and PtX Partnership September 2024

# Strategic dialogues and activities

# Leadership roundtable

The roundtable, co-hosted with the German Chamber of Commerce and Industry (AHK) for Southern Africa, brought together political and business leaders from Germany, South Africa and Namibia. Discussions focused on scaling up global and regional hydrogen markets in Southern Africa, increasing private sector investment and addressing challenges in establishing green hydrogen and PtX trade relations with European partners such as Germany.

# High-level civil society dialogue

The Partnership organised a dialogue between Namibian civil society organisations and Namibian and German government representatives to address biodiversity conservation, job creation, transparency and accountability. Participants underscored the need for a responsible and inclusive approach to developing Namibia's green hydrogen sector, ensuring economic growth and local benefits while safeguarding environmental and social interests.

'The Energy Partnership enables the private sector to engage with policymakers and actively contribute to shaping supportive framework conditions for green economic development. A key example is the Leadership Roundtable at the 2024 Global Africa Hydrogen Summit. This exchange initiated meaningful discussions and collaboration on the future of green hydrogen in Southern Africa.'

> **Jens Hauser** AHK Southern Afric

Group photo of the delegates that participated in the Leadership Roundtable at the Global African Hydrogen, Summit, Windhoek, Namibia, September 2024

# Cooperation with the private sector

To support the increasing interest in Namibia's green hydrogen and derivatives, the Partnership facilitated direct engagement between Namibian and German companies, together with AHK Southern Africa and Namibian H2 business associations.

In addition, the Partnership analysed supply structures for H2/PtX projects and new green supply chains (green iron, green lithium, etc.).

#### Institutional capacity development

The Partnership continued to support the operationalisation of the Namibia Green Hydrogen Programme (NGH2P), a key organisation for developing the country's hydrogen industry from the government's perspective. A memorandum of understanding was signed between Namibian and German government stakeholders at the Berlin Energy Transition Dialogue (BETD) 2024 officially launching the additional cooperation in the second half of 2024.



# Driving green industrial growth with South Africa

South Africa's renewable energy sector is growing rapidly, with 4 GW of new photovoltaic capacity added in 2023–2024 and a 130 GW pipeline under development.

**Energy Partnership** 

South Africa - Deutschland

Energiepartnerschaft

Following the 2024 elections, the new government committed to expanding green industries as part of its just transition framework – positioning the country on the global market in green hydrogen, power-to-X (PtX) products, electric vehicles and renewable

energy components. With the first financial and non-financial incentives in place, this effort is set to scale.

For Germany, South Africa's second-largest trading partner, this presents new opportunities. German businesses already have a strong presence in South Africa, particularly in energy, infrastructure, chemicals and automotive manufacturing, which paves the way for deeper cooperation.

Green industrial value chains at the core of the Partnership

In 2024, the South African–German Energy Partnership placed green industrial value chains at its core, with delegation visits and investment showcases.

At the Berlin Energy Transition Dialogue, the bilateral hydrogen task force reviewed major projects of joint interest, while a Hamburg study tour explored landing potential for PtX products from South Africa.



Parliamentary State Secretary Brantner opens the bilateral green hydrogen task force on the sidelines of the BETD. A South African country showcase at Intersolar Europe (Munich) promoted investment opportunities to German and European companies. A South African-German Energy Day at Enlit Africa (Cape Town) spotlighted South Africa's booming renewables market and charted pathways for private sector cooperation.

# Attention on battery metals and supply chain resilience

A standout theme in 2024 was South Africa's push to develop a battery metals and cathode active material precursor sector. German and European industry players are increasingly exploring this opportunity.

The Energy Partnership played a central role in connecting policy-makers, financiers and industry associations, contributing significantly to a new European Union Global Gateway initiative to drive investment in mineral processing and the battery sector.

# Shaping the future: green industrial value chains in focus

These efforts culminated in a major milestone: the inclusion of green industrial value chains as a new focus area in the Energy Partnership. This was confirmed in December 2024 in discussions between Michael Kellner, Parliamentary State Secretary at the German Federal Ministry for Economic Affairs and Climate Action, Parks Tau, South African Minister for Trade

and Industry, and Samantha Graham-Maré, South African Deputy Minister for Energy and Electricity.

With both countries aligned on green industrialisation, the path ahead promises deeper cooperation, stronger investments and a more resilient future for South Africa and Germany.

'The bilateral energy partnership is a very useful instrument for us and our members. It provides us with a good understanding of the energy policy context in South Africa, and it helps us identify new opportunities in emerging areas like the hydrogen economy, e-mobility and raw materials for the energy transition.



CEO of the Southern African-German Chamber of Commerce and Industry





# Asia



# Strengthening Sino-German cooperation for a sustainable energy transition

The National Energy Administration (NEA)

The National Development and Reform Commission (NDRC)

2024 saw Sino-German collaboration on energy transition reach new heights, with high-level dialogue, effective pilot projects and knowledge-sharing.

In June, Minister Habeck and Zheng Shanjie, Director of China's National Development and Reform Commission, co-chaired the high-profile Sino-German Climate and Transformation Dialogue's first plenary session in Beijing, reaffirming the two nations' shared commitment to advancing the green transformation. The outcomes, announced jointly, included the launch of two energy cooperation projects:

- 1 | Provincial-State Cooperation on Green Transformation and
- 2 | the Demonstration Project on Energy Efficiency in Industry.

In November, China passed its first Energy Law, a significant step in establishing a legal framework to secure the country's energy supply and guide its energy transition. The Energy Partnership (EP) supported this development with dialogue on topics reflected in the law's provisions.

Despite progress here, China faces challenges in integrating renewables into its power system and achieving its 2030/60 carbon peaking and neutrality goals.

Showcasing collaborative green energy solutions in cities

December saw the conclusion of a four-year Sino-German collaborative project piloting integrated energy solutions on an industrial park in Jiangsu Province. The initiative applied the German Sustainable Building Council (DGNB) standard in a pilot building alongside green technologies (heat pumps, photovoltaic-storage-heating systems, etc.) to deliver significant energy savings and emissions reductions and establish a replicable energy efficiency

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Agreement on launching Sino-German Energy Efficiency Demonstration Project in Energyintensive Industries signed during the First High-Level Dialogue on Sino-German Climate Change and Green Transformation Cooperation

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concept for climate-neutral districts. It also created a platform for German businesses to showcase green solutions, enhancing their market recognition in China and enabling fairer market access.

By disseminating these practices, the project is supporting China's goal to pilot 100 carbon-neutral industrial parks.

# Fostering mutual learning for grid integration

In September, Baden-Württemberg's largest grid operator Netze BW visited China for grid modernisation dialogue. Addressing cutting-edge topics (medium-voltage transformers, vehicle-to-grid (V2G), virtual power plants (VPPs), an electric hydrogen smart energy station, etc.), discussions and site visits revealed that China is highly innovative in some areas and that there is great potential for mutual learning. By sharing best practices, the Energy Partnership accelerates renewable energy integration and strengthens grid stability, thus contributing to global climate goals.

Looking ahead, the two nations will build on their collaborative strength in energy transition to explore innovative pathways for sustainable development and climate neutrality.

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Annual Report 2024 Sino-German Energy Partnership



Partner Ministry India

Ministry of Power, Ministry of New and Renewable Energy, Bureau of Energy Efficiency

#### Decarbonisation

Since Foreign Trade Promotion 2006

# India and Germany join forces to accelerate the global energy transition

# Launch of the Indo-German **Green Hydrogen Roadmap**

Since 2022, India and Germany have successfully cooperated under the Indo-German Green Hydrogen Task Force, which actively involved over 120 German and Indian companies and other stakeholders in more than 100 joint activities. Against this background, the two governments decided to intensify cooperation with the Indo-German Green Hydrogen Roadmap. It was launched by Minister of Commerce and Industry Piyush Goyal and Federal Minister for Economic Affairs and Climate Action Dr Robert Habeck during the 7th Indo-German Intergovernmental Consultations on 25 October 2024 in New Delhi.

The Roadmap outlines strategies to promote private sector investment, support green hydrogen trade and export and facilitate information exchange on promising sectors, standards and required certification. It will be implemented by various stakeholders from the public and private sector, including ministries and business associations. Implementation of the Roadmap is monitored and steered by the Indo-German Energy Forum (IGEF) working group on green hydrogen former Task Force and supported by the International Hydrogen Ramp-up Programme (H2Uppp).

# **Energy efficiency and** direct electrification first

As reaffirmed in the Roadmap, energy efficiency measures and direct electrification with renewables have been identified as the most effective ways to decarbonise the economy and are therefore to be given priority when decarbonising carbon intensive applications and manufacturing processes.

90% electrification of India's economy is viable with mostly existing technologies.



# 40%

emission reduction can be achieved through energy efficiency gains as electrification does not entail the huge thermal losses that burning fossil fuels does

Decarbonising India. Potential for Electrification across India's Economy and Assessment of Electricity Needs

# Flexibilisation is key

Under the banner Technical Pioneers of the Energy Transition, the IGEF cooperates with the Indian Central Electricity Authority, the Indian Excellence Enhancement Centre for the Indian power sector and vgbe, the technical association of energy plant operators, to facilitate exchange between Indian and

German power plant operators and technical experts on flexible operation of thermal power plants. As recently built thermal power plants are unlikely to retire soon, the Indian Government has given them the important role of supporting the integration of intermittent renewables into the grid.

#### **Private sector cooperation**

Promoting business opportunities for Indian and German energy companies is a central part of cooperation under the IGEF. In 2024, it organised and supported more than 210 events and mixed Indo-German government and business delegations. The Indo-German Chamber of Commerce played an important role in implementing the various activities.

'The Indo-German Energy Forum (IGEF), through its various activities, has played a pivotal role in strengthening the general bilateral economic relations between Germany and India, promoting economic growth, and addressing global climate change challenges.'

Joint Statement by Prime
 Minister Narendra Modi and
 Federal Chancellor Olaf Scholz
 7th India-Germany Inter-Governmental Consultations



Indian business delegation visiting the Lufthansa Hydrogen Aviation Lab in Hamburg

# New technologies for offshore wind and supply chains for the energy transition

# Building lasting partnerships for offshore wind

Japan is one of the most promising countries for offshore wind expansion. The exchange on best practices is a key component of the Japanese–German Energy Partnership (EP).

As part of the EP team, the German Chamber of Commerce and Industry in Japan (AHK) further facilitated business-to-business matching in Japan to bring together leading industry experts from both countries.

The success of a Japanese–German consortium in an offshore wind auction in Japan at the end of 2023 was a promising sign for cooperation. Building on this, an industry roundtable in January 2024 with the partner ministries and industry representatives from both countries allowed for a further exchange of views on key challenges and opportunities for offshore wind expansion.

In 2024, the EP also focused on new technologies. Floating offshore wind technologies are expected to play a crucial role in Japan. This promising outlook was taken up at an expert event at the Global Offshore Wind Summit in Sapporo, giving industry representatives a chance to present their perspectives on the nascent market and their solutions to tackle the challenges ahead.

Mutual learning and networking were a priority, with German experiences in regulation and market ramp-up generating a lot of interest and German companies supporting Japan in unlocking the vast offshore wind potential of its exclusive economic zone.

# New cooperation on supply chains for energy transition technologies

The EP identified supply chains for energy transition technologies as an important new area for cooperation, and 2024 kicked off with a highlight – the 13th German–Japanese Environment and Energy Dialogue Forum in Kawasaki.



Under the theme 'Circular Economy for Climate Action', two sessions were held on circular approaches for critical raw materials and energy transition technologies, with representatives from both countries' political and industrial sectors agreeing on the importance of joint action.

The EP team produced a supporting comprehensive study that identified potential areas for cooperation and set out recommendations for future joint projects and initiatives.

A workshop on photovoltaic (PV) supply chains and new PV technologies was also organised to delve deeper into the subject and develop collaboration approaches. Looking ahead, the EP is discussing collaborations on permanent magnets for the wind industry.

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With a clear focus on future joint action, the Energy Partnership remains a key player in Japanese–German energy and climate cooperation.



Participants of the Industry Roundtable on Offshore Wind in Tokyo, January 2024

Annual Report 2024 Japanese-German Energy Partnership

# Strengthening cooperation for energy-efficient buildings in Kazakhstan

Kazakh-German Energy Dialogue

**Energy Dialogue** 

Germany – Central Asia

In 2024, the Kazakh-German Energy Dialogue continued to support Kazakhstan's energy transition, focusing on contributing to development of its National Hydrogen Concept, advising on harmonisation of energy efficiency standards in industry and improving energy efficiency in buildings.

# Comprehensive approach to large-scale building upgrades

Kazakhstan has made significant progress on its climate agenda, particularly with the adoption of the national decarbonisation strategy to 2060. However, it remains one of the most energy-intensive economies in the world. The building sector is the largest energy consumer in Kazakhstan, accounting for more than 43% of final energy consumption, not including the energy used by the private residential sector. It has overtaken industry, which has accounted for just 31% in recent years.

There are currently several initiatives to improve energy efficiency in buildings, driven by businesses, local authorities, NGOs and international organisations, but they lack

coordination. In view of these challenges, the Energy Dialogue proposed the creation of a specialised coordinating body, which the Kazakh partners called a Project Office. It will act as a platform for cooperation, bringing together stakeholders from politics, business, academia, civil society, financial institutions and international organisations.

Together, they will identify and implement priority development projects in the buildings sector.

#### Bringing stakeholders together and inspire

To initiate the creation of the Project Office, the Energy Dialogue organised two complementary events in 2024: a conference for academic and regulatory stakeholders and a roundtable aimed at fostering cooperation between government agencies and companies. They provided an opportunity to discuss the proposal and also helped build a network of key stakeholders from different sectors.

> Kazakhstan's Deputy Minister of Energy Sungat Yesimkhanov delivers welcome speech at the Energy Dialogue Conference "Future Hydrogen Market in Central Asia", November 2024, Astana



# **Involving the regulator**

These efforts culminated in a decision by Kazakhstan's Ministry of Industry and Construction to consider establishing the Project Office within the Ministry itself.

In addition, the Project Office concept was included in the draft roadmap for Kazakhstan's decarbonisation strategy to 2060.

The project received support from international initiatives such as FELICITY II (GIZ) and the European Union's ENABLE project, both of which focus on energy efficiency in buildings.

The next step is formal approval of the Project Office by the Ministry. This will be followed by the formation of a working group and the development of a work plan. This step represents an important milestone in Kazakhstan's ongoing efforts to modernise its building sector, improve energy efficiency and meet its long-term decarbonisation targets.



'A full-scale partnership with Germany – one of the most developed countries in the world and the largest economy in the European Union – is a priority for Kazakhstan and Central Asian countries.'

**Kassym-Jomart Tokayev**President of the Republic of Kazakhstan

The International Energy Efficiency Forum, Kazakhstan, November 2024

# Advancing cooperation on energy efficiency, coal exit and offshore wind energy

# Phasing out coal-fired power generation

한 독 에너지 파트너십

DEUTSCHLAND - KOREA

Energiepartnerschaft

The Korean–German Energy Partnership (EP) advanced its collaboration to address the global challenge of phasing out coal-fired power generation. The Republic of Korea aims to reduce its heavy reliance on coal while ensuring energy security to reach carbon neutrality by 2050.

The shared challenge of phasing out coal-fired power generation fostered valuable exchanges between the partner countries.

In January, a workshop titled Structural Change and Just Transition was held to discuss Germany's coal phase-out experience and foster mutual learning. The two-day event included a closed session for ministry officials and experts, focusing on policy and structural change in former coal regions. The second day featured a public presentation of the study Coal-Exit and Beyond: Structural Change and a Just Transition in Korea and Germany.

In November, issues of interest to the Korean Ministry of Trade, Industry and Energy, including post-coal phase-out, power supply security, grid stability and additional infrastructure repurposing, were addressed at an expert meeting. In 2025, the EP plans to continue collaborating, with an expert workshop on integrating renewables into the grid, a crucial step towards a comprehensive coal phase-out and transition to a net zero power system.

## Promoting offshore wind development

Offshore wind is a key topic for cooperation within the EP. In October, the Energy Partnership supported the third Korean–German Business Forum on Offshore Wind Energy in Seoul, which was implemented by the Korean–German Chamber of Commerce and Industry, the EP secretariat in Korea and the German Embassy, in close cooperation with the German and Korean offshore wind industry.



The success of German company RWE in securing an exclusive business licence in 2024 to develop the 495 MW Seohae offshore wind project is a promising sign for offshore wind cooperation between Germany and Korea on the business level.

# **Exchange on energy efficiency measures**

The Energy Partnerships continuing Energy Efficiency Exchange series featured three industry-focused sessions in 2024. In March, the monitoring and evaluation of both countries' efficiency measures were actively discussed. In August, a session exploring waste heat utilisation provided an outline of the general policy conditions and the bigger picture of industrial waste heat, and companies developing innovative waste heat solutions presented their business models.

The session was well received and resulted in Korean and German companies forging new contacts.

In November, experts examined the impact of various industrial decarbonisation measures, highlighting renewable expansion, electrification and energy-efficiency appliance overhaul as low-hanging fruits of decarbonisation efforts.

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# From data to action: modelling and advancing future-ready distribution grids

The transition to a more decentralised energy system presents unforeseen challenges for distribution system operators (DSOs), which are not only responsible for distributing electricity but also for managing power flows and system flexibility.

Turkish-German • Türk-Alman

**Energy Partnership** 

Enerji Ortaklığı

Germany and Türkiye face similar challenges in planning, operating and digitalising their grids, and both require appropriate grid models that consider the complex tasks of existing and future grids. In light of this, the Turkish–German Energy Partnership's Working Group on Renewable Energies, Energy Infrastructure and Sector Coupling commissioned the study Integration of Distributed Generation and Electric Vehicles into Turkish Distribution Grids until 2038.

# **Approach and implementation**

A collaboration between the partnership, the consultancy firm APLUS Enerji, Yıldız Technical University and one of Türkiye's largest DSOs, Enerjisa Enerji, the study highlights the regulatory developments required and distribution grid reinforcement needs in Türkiye, with a view to achieving the Turkish

Government's climate goals. It assesses the impact of distributed generation and electric vehicles on part of Türkiye's medium-voltage grids, analysing scenarios for 2023, 2030 and 2038.

The model can be extended to include other DSO regions, different voltage levels and additional parameters. The partnership contributed regulatory insights to the study, emphasising predictive grid planning, controllable load management during congestion and lessons learned from Germany's smart meter rollout.

The study was launched in December in an online event featuring a panel discussion on data quality and confidentiality.

In November, a workshop on strategies for digitalising distribution networks addressed the evolving challenges faced by DSOs in the energy transition.



A follow-on workshop in Berlin gathered Turkish and German DSOs, associations, technology providers and policy-makers to present best practices in grid planning and operations, such as digital twins, process automation and steps for an efficient smart meter rollout.

# **Outcomes and impacts**

By showcasing practical insights from both countries, the study and workshops have contributed to a society-wide discussion and solution-finding on distribution grid planning. The study is intended to promote common central planning of distribution grids in Türkiye in order to improve data availability and transparency at the distribution level and help the DSOs and regulatory authorities reach informed decisions ahead of the five-year investment periods.

German participants were particularly interested in the application of artificial intelligence for customer segmentation in Turkish distribution grids. This and further digitalisation topics will continue to be addressed in deep dives as part of the Working Group's agenda in the coming years.

Ministry of Energy, Ministry of Construction

and Housing and Communal Services

# Developing Green Skills in Uzbekistan: A Step Towards a Sustainable Future

Uzbek-German Energy Dialogue

In 2024, the Energy Dialogue continued its commitment to advancing Uzbekistan's energy transformation through two key initiatives: developing green skills and raising awareness of the need to decarbonise cities and districts.

As part of its Green Economy Transition Programme, Uzbekistan has set ambitious targets for the coming years.

By 2030, the country aims to reduce its energy intensity by 30% (from 2021 levels) and increase the share of renewables in its electricity mix to 40%. Achieving these targets is expected to require the creation of more than 100,000 new green jobs.

### Bringing the training centre concept to life

In response to this need, the Energy Dialogue launched the German–Uzbek Energy Training Centre project, which aims to promote knowledge transfer and capacity building in the fields of energy efficiency

and renewable energy throughout Uzbekistan. The concept for the Training Centre, developed in 2023, consists of three phases, each varying in scope and intensity depending on the funding available. The dialogues goal for 2024 was to implement the first phase – strategic setup of a training centre – which included the following steps.

# Identification of the host partner

Following a series of negotiations, on 14 June 2024 a presidential decree formally

incorporated the Training Centre into the National Scientific Research Institute of Renewable Energy Sources (NIRES) under the Uzbek Ministry of Energy. This institutionalisation positions NIRES as the strategic partner in the Energy Dialogue to drive forward the Centre's activities.



#### **Network development**

A key part of establishing the Training Centre is building links with relevant stakeholders. In 2024, the dialogue held a series of interviews with influential organisations, such as the Ministry of Economy and Finance, Uzbekneftegaz, Tashkent State Technical University, USAID, Siemens Energy and Knauf. These discussions aimed to align the Centre's objectives with national needs, identify synergies and build a collaborative network of partners.

#### Pilot training

In December 2024, two pilot training events were launched, focusing on renewable energy and energy efficiency in buildings. Around 40 professionals attended, including representatives from the Ministry of Energy, research institutions, universities and private sector companies. The sessions included a train-the-trainer component, with NIRES staff acting as co-trainers to ensure sustainability and ongoing knowledge sharing in Uzbekistan.

Looking ahead, the next critical step for 2025 is to implement train-the-trainer courses and introduce new training opportunities in order to establish the Centre as a permanent institution.

'We are confident that Germany's experience in the field of energy efficiency and renewable energy and our mutually beneficial cooperation will contribute to the development of the energy sector in the Republic of Uzbekistan.'

From the letter of thanks after the pilot training
December 26, 2024

First pilot training sessions of the Uzbek-German Energy Training Centre in Tashkent, December 2024



### Viet Nam gears up for the energy transition

In 2024, the Government of Viet Nam initiated crucial legislative reforms, notably to improve electricity pricing, boost offshore wind power development, further promote the wider adoption of rooftop solar and set clear targets for energy efficiency. The new Electricity Law, approved in November, lays important foundations for the implementation of the direct power purchase agreement mechanism, sets out special mechanisms for offshore wind developments and emphasises the role of green hydrogen as the energy carrier of the future.

#### **Energy efficiency policies**

In 2024, the Energy Dialogue (ED) enabled the establishment of two Energy Efficiency Networks (EENs) with around 20 industrial companies. Over the year, six training sessions for EEN members were conducted on key topics, such as energy audits, decarbonisation strategies, compressed air systems, load profile analysis and energy management systems. In October, simplified energy audits were carried out for EEN members in Thai Nguyen and Ho Chi Minh City. The companies identified potential savings and

committed to a minimum 2% reduction in energy consumption and a 19,000 tCO2 reduction with measures to be implemented in 2025. This provides tangible opportunities in 2025 and 2026 to support German technology providers in positioning themselves in the energy efficiency sphere. Through close collaboration with other projects funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK), additional cost-effective services were provided to EEN members, including the development of a greenhouse

gas inventory, prefeasibility studies for the most cost-intensive energy efficiency measures and financing advice.

#### Women in Energy Viet Nam (WEVN) network

The ED also continued to support the WEVN network, which connects over 140 women working in the energy sector and serves as a platform for them. The ED has supported the network from the outset and organised important events, for example a webinar on



just energy transition that gave nearly 100 women electrical engineering students and professionals the chance to discuss opportunities and challenges for women.

#### Foreign trade promotion

Given the importance of the private sector in Viet Nam's energy sector reforms, there is great potential for German companies in the country.

Through specific networking activities, the ED supports German companies in positioning themselves as strong partners in Viet Nam's energy transition.

At one event, for example, five German technology providers pitched their technology solutions to more than 100 stakeholders from the cement sector. Additionally, new types of events, such as business breakfasts, were held, in addition to proven dialogue formats.

'The Energy Dialogue is a great format for PNE. German company PNE aims to build an off-shore wind park of 2 GW at Vietnam's coast. The Dialogue organised an exchange with decision makers from the Ministry of Industry and Trade to discuss possible avenues to implement the project.'

**Thorsten Fastenau**Executive Vice President of PNE Group

Ho Chi Minh city and Thai Nguyen province in November & December: Energy Audit at one of Energy Efficiency Network member companies





# Europe

# The Ukrainian–German Energy Partnership fosters dialogue to rebuild Ukraine's energy sector

The Energy Partnership (EP) serves as a high-level strategic platform dedicated to fostering political dialogue and strengthening energy cooperation between Germany and Ukraine. It plays a pivotal role in enhancing bilateral relations, promoting sustainable energy solutions and supporting the transition towards a more resilient and decarbonised energy sector in Ukraine.

Since the beginning of the Russian invasion of Ukraine, the EP has taken up a key role in Germany's emergency help for Ukraine's energy sector. By facilitating collaboration among key stakeholders, it addresses critical challenges in the energy landscape, accelerates the deployment of renewable energy technologies and promotes the exchange of expertise and best practices.

Ultimately, the partnership reflects the shared commitment of both nations to building a greener and more secure and sustainable energy future.

'We are deeply convinced that the cooperation between the German and Ukrainian Renewable Energy – sector and our governments is strong and a good basis for the green reconstruction of the Ukrainian Energy system after the war. For a renewable future in Europe!'

**Dr. Oleksandr Dombrovskyi** Chairman of the Board of Global 100 RE Ukraine



## Donation campaign for the Ukrainian energy sector

Under the umbrella of the EP, the Donation and Procurement Campaign supports the restoration of Ukraine's energy infrastructure in response to the devastating impacts of the Russian invasion.

To date, more than 15,000 energy-related products have been donated and successfully delivered to Ukraine.

These contributions have played a crucial role in restoring the electricity supply and heating for over one million people, ensuring that essential energy services remain available to households, businesses and critical infrastructure. The partnership mobilises international support through this campaign, reinforcing Ukraine's energy resilience during these challenging times.

#### Ukraine adopts the National Renewable Energy Action Plan to advance the green transition

On 13 August, the Ukrainian Government officially approved the National Renewable Energy Action Plan (NREAP), a strategic framework aimed at accelerating the country's transition to renewable energy.

The finalised NREAP incorporates key proposals put forward by the EP during the drafting process in previous years.

Expert Round Table "Energy Resilience: Ensuring a Green and Warm Future for Ukraine", Kyiv



# Hydrogen Trade and Beyond: Assessing the Feasibility of a Pipeline and Kick-Starting the Hydrogen Market in the UK and Germany

After the hydrogen partnership between the United Kingdom (UK) and Germany was signed in September 2023, the first year of cooperation saw a range of activities to deepen the exchange between the two governments and industry players from both countries.

At the heart of the cooperation lies a joint feasibility study on the construction of a pipeline to transport hydrogen from the UK to Germany.

Alongside this, a number of knowledge exchanges on issues such as standards and certification and onshore networks supported the countries' understanding of each other's approach to strengthening the hydrogen economy and identified areas for collaboration.

#### Feasibility study

In April, the then British Prime Minister Rishi Sunak and German Chancellor Olaf Scholz met in Berlin to signal the strong ties between the UK and Germany. During their meeting, Sunak and Scholz announced, among other things, that a feasibility study would be commissioned to explore the possibilities of importing hydrogen from the UK to Germany.

The study, which is being developed by the British engineering firm Arup, the German Energy Agency (dena) and adelphi, provides a detailed examination of the hydrogen and gas policy landscape in the UK, Germany and the European Union, routing options for the pipeline and technical requirements.



To facilitate implementation of this endeavour, the study outlines the necessary next steps from a regulatory and technical as well as commercial perspective.

The study is expected to be published in March 2025.

#### Policy and knowledge exchanges

Additionally, policy and knowledge exchanges offered the opportunity for both governments to deepen their understanding of the status quo and plans for their respective hydrogen markets. The topics covered in these meetings included each country's hydrogen strategies, hydrogen production and transport, and hydrogen standards and certification. In 2025, a factsheet on standards and certification will be published, and further bilateral knowledge exchanges are planned on topics such as financing instruments for hydrogen, developments in hydrogen storage and hydrogen to power.

'Germany and the UK are close partners in fostering the energy transition, industry and transport decarbonisation, renewable energy, and hydrogen development, in particular from renewable sources. Building on our energy and climate partnership we have agreed on a feasibility study for H2 exports from the UK to Germany.'

**Rishi Sunak**British Prime Minister

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## Latin America

### Cooperation on future-oriented energy markets and economic development

Argentina's energy sector is changing. While its energy mix continues to be dominated by some of the world's largest shale oil and gas reserves, renewable energy is gaining in importance. In 2024, 16.3% of the country's electricity was generated from renewable sources (excluding large-scale hydropower), compared with 2% in 2017.

This transition is being driven by global commitments, technological advances, economic priorities and the private sector's recognition of the significant opportunities offered by renewables. Argentina's geography and climate provide an ideal environment for solar, wind and hydropower projects. Additionally, the country's northern regions are home to vast deposits of lithium - an essential resource for battery manufacture and the global energy transition.

However, challenges remain. Expanding transmission grids is essential to integrating renewable energy into the electricity system. These investments are costly and public budgets are under pressure. Private investors

could help, but clear regulations and incentives are needed to encourage their participation. At the same time, despite the complexities and challenges of Argentina's overall political and macroeconomic situation, the Argentine-German Energy Dialogue is working to maintain discussion with political partners and offers potential for a more in-depth exchange with the local private sector. Addressing the challenges of a successful energy transition within the context of the Energy Dialogue is key to fostering opportunities for knowledge-sharing and technological innovation.

A workshop in August 2024 with partners from the Argentine Secretariat of Energy and several coordination meetings that same year created the main space for the Energy Dialogue to identify key cooperation areas, including renewable energy technologies, energy efficiency and digital solutions.

A particular focus was placed on emerging technologies, such as floating solar panels, which show promising potential in Argentina, especially for hydropower reservoirs. The Argentine partners also expressed a keen interest in better understanding the German and European processes for defining and updating energy efficiency labelling for household electrical appliances and in deepening analysis of the agriculture-energy nexus, particularly when it comes to agricultural applications of photovoltaics, such as solar irrigation systems.

With its renewable energy potential, long trading history and strategic ports, Argentina is well positioned to become a key partner in future energy projects.

By working together, Argentina and Germany can accelerate their energy transitions and unlock new economic opportunities for themselves.

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# Brazil at the helm: shaping a just and inclusive energy transition

#### **Energy policy**

2024 was a milestone for Brazil's energy transition, marked by significant investment in renewable energy, infrastructure development, international partnerships and policy advancements, such as the enactment of the Fuel for the Future Law, the creation of the National Energy Transition Policy and the conclusion of negotiations on the European Union–Mercosur Agreement, which presents growth opportunities and investment in industrial decarbonisation. In addition to this, Brazil concluded its G20 presidency by endorsing principles for a fair and inclusive energy transition, including the formation of the Global Clean Power Alliance.

#### **Private sector cooperation**

With its immense renewable energy potential, its status as an agricultural powerhouse and its role as South America's largest economy, Brazil presents unique business opportunities. In this context, the Energy Partnership (EP) explored the potential of agrivoltaics in Brazil, mapping existing systems, the potential of the technology across the country's

diverse regions, its benefits and challenges, and recommendations for its development in the Brazilian context.

Building on these insights, the EP, with support from the German and Brazilian solar industry associations, organised a workshop at Smarter E South America, in Sao Paulo, bringing together stakeholders from both countries.

In 2024, Brazil made significant strides in establishing a robust policy framework to advance its hydrogen economy. The EP supported these developments by facilitating a series of discussions among German, European and Brazilian stakeholders, providing critical insights into activities along the hydrogen value chain in Brazil. Additionally, during the fifth Local Business Council on Energy, companies highlighted the importance of bilateral cooperation in promoting low-carbon, added-value products.

'Get-Together' on Green Hydrogen, as part of H2Expo 2024 in June, in Rio de Janeiro, in cooperation with the AHK-RJ, with presence of the BMWK representative.



With the support of the EP, Energy Efficiency Learning Networks in Brazil have become a guiding light in optimising energy consumption by sharing best practices, setting efficiency goals and implementing energy-saving measures collaboratively.

In 2024, these networks were recognised as an instrument within the New Industry Brazil 2024–2026 action plan, which outlines the federal government's neo-industrialisation policy for the next decade.

'Together we can unlock sustainable energy opportunities and strengthen business ties while advancing industrial decarbonization. As a German industry player in Brazil, we actively support this alliance, as we share a strong interest in renewable energy and green hydrogen as a clean energy vector for decarbonization. This partnership remains a vital bridge for us and for other companies pursuing a greener, more competitive future.'

**Paulo Alvarenga**CEO, thyssenkrupp South America

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# Working together on integrated solutions to secure a clean and affordable energy supply

Chile and Germany face challenges on the road to climate neutrality. As in Germany, 80% of Chile's energy is to be produced using renewable sources by 2030. The Energy Partnership (EP) strengthens bilateral cooperation on reforms for energy distribution and storage and grid expansion.

NERGY PARTNERSHIP

2050 must be socially just, a key focus is the conversion of coal-fired power plants and the impact of climate change on energy security and critical infrastructure.

### Securing supplies of energy and critical raw materials

President Gabriel Boric's official visit to Germany in June featured many bilateral meetings with German officials, including Chancellor Olaf Scholz, to discuss green hydrogen and lithium supplies.

## Advancing integrated photovoltaics (PV) and foreign trade promotion

Climate variability affects agricultural production in Chile, especially in regions with decreasing water supplies.

Agri-PV systems are an innovative combination of agriculture and decentralised solar PV. The Ministry of Energy's (ME) growing interest in this topic led to pilot project visits and webinars.

In June, the EP organised a study tour for experts from the ME and the National Irrigation Commission to German agri-PV and floating PV projects and the Intersolar fair. Given that Chile's regulatory framework does not yet cover the use of agri-PV, a policy brief was drafted in cooperation with Fraunhofer Chile Research and the Federico Santa María Technical University to provide recommendations on legal, financial and other aspects.



Like the German DIN SPEC 91434:2021-05. the policy brief proposes maintaining agricultural land use with agri-PV systems to enable farming activities to continue.

#### **Business to government (B2G) activities**

Four B2G roundtables were held in cooperation with the German-Chilean Chamber of Commerce and Industry to discuss innovative technology solutions with Chilean and German experts. The Energy Challenge Chile opened up business opportunities for three German start-ups in the Chilean energy sector. Two Local Business Councils analysed the situation of German companies in the Chilean energy market and discussed individual and systemic challenges related to grid bottlenecks and future investment prospects. The issues identified were submitted to the ME.

#### Securing a clean and affordable energy supply

The study Quantitative indices for the effects of the climate crisis on the Chilean energy system contributed directly to Chile's climate adaption strategy. The Energy Partnership also produced the studies Reforming laws and regulations for distributed energy and Analysis of the demand of German offtakers for green ammonia from Chile, which will be published in 2025.

### Uruguay - the hidden green champion in Latin America

The Uruguayan Green Hydrogen Roadmap, launched in 2023 by the Ministry of Industry, Energy and Mining, aims to bring about a major transformation in terms of energy sources and industrial raw materials.

A key component of this initiative is the establishment of a Single Investment Window for Green Hydrogen.

Uruguay aspires to develop a robust green hydrogen industry by 2040, projected to generate an annual turnover of USD 1.9 billion and create over 30,000 quality jobs. This comprehensive strategy aligns the country's industrial development with global sustainability goals, promoting economic growth and job creation through international private sector investments in the green energy sector. The activities of the Uruguayan-German Energy Partnership (EP) are aligned with

these ambitious goals. Productive exchanges between the two countries enable Uruguay to benefit from Germany's expertise and technology to position it as a regional leader in green hydrogen.

Although the country has a largely decarbonised electricity mix, it needs to address the decarbonisation and electrification of transport and industry, which are still partially reliant on fossil fuels. To support this goal, the EP is working to strengthen public sector capacities in electromobility and energy efficiency networks.

#### Capacity building and knowledge transfer

The initiative to enhance knowledge exchange and capacity development through technical training, workshops and educational material on sustainable energy and innovative technologies aims to strengthen Uruguay's technical and institutional capabilities.



#### Sustainable economic development

The aim is to foster sustainable economic growth by promoting partnerships between German and Uruguayan companies, encouraging investment in clean technologies and facilitating Uruguay's entry into international green markets, with a focus on certification, standards and collaborative projects.

In 2024, the Offtaker Roadshow for green methanol in Germany featured as a key highlight in the year's activities.

The delegation trip was designed to enhance collaboration between the chemical and energy sectors of the two countries, focusing on green hydrogen and its derivatives, particularly e-methanol.

Participants gained in-depth knowledge of the German market's green hydrogen and e-methanol requirements and established valuable contacts that could pave the way for future partnerships.

Despite challenges in planning and participant recruitment, the trip laid the foundation for ongoing cooperation, highlighting the potential for significant opportunities in the hydrogen derivatives trade.

Offtaker Road Show for Green Methanol to Germany, visit at Headquarters Evonik with Lead Engineers



'The opportunity provided by GIZ and AHK during the Offtaker Tour was extraordinary. We had the chance to meet and engage directly with representatives from major German companies driving the global demand for green hydrogen.'

**Sabrina Bertolini**Ministry of Industry, Energy and Mining

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# Middle East and North Africa

# A sustainable future in sight: the Algerian-German partnership on renewable energy and green hydrogen

#### A sustainable future in sight: the Algerian-German partnership on renewable energy and green hydrogen

Partenariat Energétique

Energiepartnerschaft

2024 was a year of tangible progress and strengthened ties between Algeria and Germany in their joint efforts to advance the energy transition. Together, both countries translated ambition into action, driving renewable energy and green hydrogen initiatives in line with Algeria's energy diversification goals.

#### A tone-setting visit

On 8 February, German Vice Chancellor and Federal Minister for Economic Affairs and Climate Action Dr Robert Habeck visited Algeria. This key moment in the partnership sent a clear signal of Germany's commitment to advancing cooperation in strategic energy sectors, highlighted by the honourable presence of Algeria's Minister of Energy, Mines, and Renewable Energies, Mohamed Arkab. The ministers were also joined by the German-Algerian Chamber of Industry and Commerce (AHK Algeria)

and many key actors, from CEOs to decision-makers and energy experts.

The Energy Partnership's central activity during the visit was the high-level bilateral round table: 'Renewable Energies and Green Hydrogen: Focus on the SoutH2 Corridor', co-chaired by Mr Arkab and Dr Habeck.

The two ministries also established a hydrogen task force to facilitate collaboration on feasibility studies, production strategies, and the transportation, storage and marketing of hydrogen and its derivatives.

#### **Showcasing solar ambitions**

During the Intersolar Europe conference and exhibition in Munich, an Algerian delegation took part in a round table organised by the Energy Partnership, with support from BSW Solar. This enabled Algeria to showcase the potential of its solar market and position itself as a high-potential partner in renewables.



Signing of the MoU BMWK-MEM on Green Hydrogen, at the El Aurassi Hôtel: Minister of Energy, Mines and Renewable Energies, Mr Mohamed Arkab, Minister BMWK Dr Robert Habeck, February 2024, Algiers

## Tackling CBAM in forward-thinking discussions

A series of webinars in November provided many Algerian public-sector actors with insights into the implications of the European Union's Carbon Border Adjustment Mechanism (CBAM) for electricity and hydrogen exports, ensuring that they remain ahead of the curve.

#### Algeria's vision for green hydrogen

Algeria reaffirmed its pledge to meet 10 per cent of Europe's green hydrogen demand through the SoutH2 Corridor. This ambitious project seeks to export hydrogen from Algeria via Tunisia to Europe with a view to enhancing collaboration on creating new markets and driving climate action.

#### A partnership with purpose

Alongside events and agreements, 2024 also laid the foundation for Algeria and Germany's shared energy future, demonstrating the importance of international collaboration in overcoming challenges and creating local opportunities. February's ministerial visit to Algeria generated the required political momentum for companies from both countries to reach agreements on energy cooperation.

Round Table on Renewable Energy, Green Hydrogen and German Algerian cooperation as part of the visit by Vice-Chancellor and Federal Minister Dr Robert Habeck, February 2024, Algiers



### Advancing the Egyptian-German Green Hydrogen Partnership

The Partnership has made real progress in fostering collaboration between public and private stakeholders, focusing on policy dialogue and knowledge-sharing to position Egypt as a key player in the global GH2 economy.

A detailed baseline assessment was developed to guide project activities. It mapped GH2 projects at various stages, from memoranda of understanding to framework agreements, and analysed planned renewable energy capacities, electrolyser plant sizes and designated land areas. It streamlines decision-making and ensures alignment with Partnership goals.

Following publication of Egypt's Green Hydrogen Strategy in August 2024, the Partnership became fully operational. Attended by Deputy Minister Mohina, Ministry of Electricity and Renewable Energy (MoERE), the operational kick-off meeting on 27 August introduced the German–Arab Chamber of Industry and Commerce as a key partner.

On 4 December, the first public-private exchange platform for Egypt's GH2 market was launched

with MoERE, bringing stakeholders together for regular cooperation over the next two years. 46 participants from key public organisations (e.g. MoERE and the Ministry of Petroleum and Mineral Resources) and the private sector (e.g. Siemens, TAQA Power) discussed value chain responsibilities, regulatory frameworks and technical readiness.



The session identified knowledge gaps, potential collaboration areas and future workshop topics. The platform helps both sectors tackle challenges and seize opportunities.

### Empowering the private sector: supporting GH2 initiatives in Egypt

At the MENA-Europe Future Energy Dialogue (MEFED), the Partnership assisted with agenda coordination for Deputy Minister Sabah Mashaly, ensuring her effective participation in bilateral meetings with State Secretary Wenzel, the Greek Energy Minister, the European Union, European Investment Bank, VNG Group, KfW and International Energy Agency. She also took part in high-level discussions alongside Federal Minister Robert Habeck. Support with strategic engagement included preparing fact sheets and briefing materials for bilateral talks.

Support was provided to German and European companies, giving Benchmark Power Int./Siemens insights into financing mechanisms such as the EIB fund for GH2, and supplying Fraunhofer Institute with market analyses, policy documents and connections to potential partners to aid tender applications. Discussions with Hydrogenious led to guidance on their H2Uppp project grant application. Scatec ASA shared insights on Egypt's Hydrogen Incentive Law at the Donor-Partner Group session and is participating in the first project selected for KfW's power-to-X.

First workshop of the Public Private Green Hydrogen Platform, representatives of public and private stakeholders, December 2024



**Ahmed Mahrous** 

Hydrogen Focal Point Ministry of Electricity and Renewable Energy

essential for addressing

solutions, and ensuring

specific issues, finding joint

effective implementation.'

### Strong partnership for a resilient energy future

The Energy Partnership looks back on a successful year of energy cooperation. In 2024, the focus was on strengthening the resilience of critical energy infrastructure against physical and cyber threats and on energy storage solutions. The activities were implemented by the partnership together with the Energy Secretariat hosted by the German-Israeli Chamber of Industry & Commerce (AHK) Israel.

#### **Cybersecurity cooperation**

The threat to critical energy infrastructure is rising worldwide, be it physical threats to interconnectors and pipelines or cyber threats from increased digitalisation. To counter these risks, different Energy Partnership activities were discussed, with the aim of building a resilient energy system.

In May, a bilateral research cooperation programme was established between the Israeli Ministry of Energy and Infrastructure (MoEI) and the German National Research Center for Cybersecurity (ATHENE). They agreed to spend around EUR 2 million over the next three years on joint research on applied cybersecurity for the energy sector. It promises to have a great impact thanks to direct dialogue between the researchers and policy-makers at the German Federal Ministry for Economic Affairs and Climate Action (BMWK) and the MoEI.

Also in the cyber realm, the first multilateral delegation trip on cybersecurity to Berlin and Bonn took place under the Climate and Energy Partnerships. High-level participants from Australia, Germany, Israel and the United States came together to discuss crisis communication and management in the area of cybersecurity in energy infrastructure. This included a state-of-the-art cybersecurity simulation exercise, which involved managing the operation of a fictitious municipal utility and responding to simulated cyber attacks.



These activities laid the foundations for further multilateral cooperation efforts and seek to support the preparation of the energy infrastructure of Germany and Israel for the cyber threats of tomorrow.

#### **Energy storage solutions**

Energy storage systems play a crucial role in energy security in both countries, serving as a buffer against supply disruptions and seasonal fluctuations in production and demand. A workshop addressed the strategic, regulatory, technical and economic aspects of gas storage, including demand and potential assessments for gas and hydrogen storage and perspectives on Carbon Capture and Storage. It was acknowledged that gas storage will play a pivotal role in the transition to renewable energy by providing a flexible and reliable backup to complement intermittent renewables. A further workshop focused on integrating decentralised storage systems into the energy system. It underscored the importance of such storage systems in enabling the transition to a decentralised and resilient energy grid.

ership

'This partnership contributes much to bolstering the significant ties between the two states, and is important at a time when we are trying to significantly increase power production through renewable energy.'

Yossi Dayan

Director General of the Ministry of Energy and Infrastructure

Tech experts from Israel, Germany and the USA partaking in a cybersecurity-exercise.

# Moving towards more renewable energy: enhancing power grid and energy efficiency

## Advancing grid stability through dialogue with transmission system operators (TSOs)

Jordan and Germany are committed to expanding renewable energy, which necessitates advanced grid management solutions.

To facilitate this transition, the TSO Dialogue was implemented under the Jordanian–German Energy Partnership's Power Grid Working Group in 2024. This enabled structured knowledge exchange between TSOs, equipment manufacturers and research institutions from both countries.

Discussions centred on grid stability, with a focus on frequency, voltage, operational management, grid restoration and cross-border connections. Sessions with the Jordanian TSO NEPCO identified grid needs and included engagement with manufacturers such as Siemens Energy and SMA to explore technical solutions.

A pivotal two-day TSO Dialogue workshop in Amman, opened by Anne Jacobs-Schleithoff from the German Federal Ministry for Economic Affairs and Climate Action (BMWK), facilitated in-depth discussions on challenges and potential solutions, paving the way for further collaboration in 2025.

The TSO Dialogue plays a vital role in supporting Jordan's renewable energy transition and its strategic position as a regional electricity hub.

The Ministry of Energy and Mineral Resources (MEMR) has prioritised legal and institutional reforms to enhance efficiency nationwide. In 2024, the partnership and MEMR discussed the Energy Efficiency. By law, establishing a governance framework for enhanced accountability and awareness. A national steering committee, technical committee and sectoral working groups were proposed to streamline energy policy and stakeholder engagement.



General Meeting and Ratification of the Work Program 2025 in Amman in December 2024, including SG and representatives from MEMR, German Ambassador, representatives from BMWK, dena experts and other stakeholders



A second key area was ISO 50001 compliance.

Jordan's Energy Management System (EMS) landscape was assessed, and incentive schemes were proposed to promote adoption. Additionally, efforts under the National Energy Efficiency Action Plan (NEEAP) included developing a systematic implementation guideline, with defined monitoring and evaluation mechanisms to ensure effectiveness.

Collaboration with Germany's Federal Energy Efficiency Center (BfEE), which is under the legal and technical supervision of the BMWK, provided insights into governance models for strengthening Jordan's institutional framework. Jordan now plans to establish an Energy Efficiency Department in MEMR.

In 2025, the adoption of the Bylaw will further solidify this progress. The governance framework, the NEEAP development guideline and incentive mechanisms for EMS implementation will be integrated into policy, ensuring a long-term impact.

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### Facilitating high-level political dialogue

2024 saw the Moroccan-German Energy Partnership (PAREMA) focus on strengthening high-level political dialogue on renewable energy and green hydrogen. PAREMA made significant strides with a series of high-profile meetings between Moroccan and German political, economic and academic leaders.

A notable example was the visit of Lukas Groove, PAREMA Co-Chair, and Jürgen Friedrich, Ministerial Envoy of the German Federal Ministry for Economic Affairs and Climate Action (BMWK) for International Hydrogen Projects. During their time in Morocco, discussions focused on the 'Offre Maroc', a strategy aimed at boosting Morocco's hydrogen sector.

The framework targets investors planning to develop green hydrogen production projects, including derivatives, both for the Moroccan market and for export.

The Moroccans emphasised Germany's role as a vital hydrogen offtaker and underscored the critical need to ramp up green hydrogen projects in Morocco.

Another example of PAREMA supporting dialogue was Morocco's participation in the Berlin Energy Transition Dialogue (BETD), particularly key side events, where highprofile representatives showcased Morocco's advancements in developing the governance and strategic framework for green hydrogen and power-to-X (PtX) technologies. These side events facilitated valuable discussion with central stakeholders from the German public and private sectors, further strengthening bilateral cooperation.

The 4th World PtX Summit, held in Marrakesh in October, was a real highlight. This major international event brought together global leaders in PtX technologies. The high-ranking German delegation, led by Dr Dorothea Schütz, Deputy Director-General at BMWK and Head of the Subdirectorate. Middle East, North Africa, Trade Fair and Development Policy, participated in numerous bilateral meetings with key Moroccan partners. These discussions reinforced political ties and explored opportunities for deeper cooperation on green hydrogen.



Dr Schütz also took part in an expert panel on Morocco's potential for harmonising its electricity certification standards with international frameworks.

The frequent high-level meetings throughout the year, including numerous bilateral gatherings not mentioned here, underscored the growing significance of cooperation in the energy policy sector.

These interactions consistently highlighted Moroccan–German political dialogue as a cornerstone of the Partnership, cementing both countries' status as key players in the global energy transition.

## Supporting the energy transition and the decarbonisation of industries in Oman

Green hydrogen remained a key focus of the Omani-German Energy Dialogue in 2024 Oman aims to expand green hydrogen production to diversify its economy beyond fossil fuels and create future-proof jobs. The Energy Dialogue supports Oman's efforts to build a hydrogen-based economy by facilitating knowledge exchange and mutually beneficial cooperation with German companies.

On 18–22 March, a high-level delegation of leading Omani government actors and companies in the hydrogen sector, led by Omani Minister of Energy and Minerals H.E. Salim Al Aufi, visited Germany for meetings with

key players along the hydrogen value chain. It featured stops in Leipzig, Berlin (including participation in the Berlin Energy Transition Dialogue), Hamburg and Duisburg–Essen and discussions with around 30 companies. A highlight of the visit was a roundtable organised by VNG with potential hydrogen offtakers from various industries (steel, chemical, automotive, fertiliser) and the signing of a memorandum of understanding between Hydrom and VNG.

Omani stakeholders are eager to collaborate with German technology providers and align with industry stakeholders on hydrogen offtake. Discussions during the trip focused on cooperation opportunities and ensuring Omani hydrogen production meets EU and German requirements.

Site visit to the facilities of Siemens Energy during the high-level delegation visit to Germany

## Knowledge exchange supports alignment on standards and labels for decarbonised industry products

Both the German Government and the EU focus on supporting the creation of climate-friendly and competitive industries. The webinar 'Carbon Border Adjustment Mechanism (CBAM) and Instruments for Industry Decarbonisation' provided a platform for knowledge exchange and discussions on regulations, such as for the CBAM, and support schemes for low-carbon transformation of industrial production processes, such as Carbon Contracts for Difference. A follow-up webinar brought together Omani and German industry stakeholders to discuss definitions and reliable labelling systems for climate-friendly products. Key initiatives, such as the Low Emission Steel Standard of the German Steel Association (WV Stahl) and the global ResponsibleSteel standard, were presented.



Input presentations were met with great interest from participating companies and government actors aiming to work towards the international harmonisation of standards and labels.

At COP29, a joint side event on industrial decarbonisation continued this discussion and encouraged exchanges about challenges, opportunities and concrete measures for the green transformation.

The discussion with representatives from companies such as VNG and Petroleum Development Oman shed light on key initiatives and strategies for reaching net zero targets in both countries.

> Meeting with potential offtakers from aviation and shipping at the Hamburg Chamber of Commerce during Omani delegation visit.



on the CBAM.

The CBAM is a new key EU climate policy

sions Trading System (EU-ETS) in tackling

carbon leakage. The new instrument came

into effect in October 2023. This workstream

builds on a 2023 exchange with Qatar Energy

instrument and complements the EU Emis-

### Exploring new horizons of the global transition

#### Sustainable aviation fuels

The Qatari-German Energy Partnership kicked off in 2024 with an agreement between the German Federal Ministry for Economic Affairs and Climate Action and QatarEnergy to intensify cooperation on sustainable aviation fuels (SAFs). This comes at an important time as both countries are aiming to ramp up their SAF production to cover rising demand. Qatar Airways's target, for example, is to use SAFs to cover 10% of its fuel requirements by 2030. The European Union (EU) has also set out to gradually increase its target to achieve a 70% share of SAFs in the fuel mix by 2050, a key

**Qatari-German Energy Partnership** 

Oatari-German

**Energy Partnership** 

driver being the ReFuelEU Aviation Regulation. To facilitate knowledge exchange on the European regulatory framework and bring together German and Qatari stakeholders, the Energy Partnership organised a workshop on SAFs in May 2024, followed by business pitches from German SAF technology providers to QatarEnergy. Four German private companies had the opportunity to pitch their solutions.

#### **Carbon Border Adjustment Mechanism**

In May 2024, the Energy Partnership facilitated a workshop on the Carbon Border Adjustment Mechanism (CBAM) with a delegation from the Qatari Ministry of Environment in Munich on the sidelines of the IFAT trade fair.

CBAM Workshop participants in Munich, Germany Sharing knowledge early on with key stakeholders in partner countries on requirements under

the CBAM is essential to

implementation globally.

ensure its successful

### Continued hydrogen cooperation and emerging climate dialogue

#### Strengthening existing hydrogen cooperation

Building on the momentum that was created at the offtaker conference and the Saudi-German Energy Day in 2023, the Energy Dialogue continued to facilitate high-level exchanges between project developers for green hydrogen and the respective governments.

These productive exchanges resulted in, among other things, the signature of memorandums of understanding and prepared the ground for collaboration between the German Government-owned gas company SEFE Securing Energy for Europe and the Saudi developer ACWA Power in February 2025.

This set an important milestone for hydrogen cooperation between Germany and Saudi Arabia, foreseeing the yearly delivery of 200,000 tonnes of green hydrogen by sea to Germany by around 2030 (and later potentially via pipeline). To further accelerate hydrogen expansion, a trilateral partnership is envisioned between Saudi Arabia, the Netherlands and Germany. The Energy Dialogue is supporting the implementation of this partnership which aims to work along the entire value chain, including hydrogen production, infrastructure and demand, and on policy and regulation.

Additionally, Saudi Arabia is driving the implementation of infrastructure for hydrogen energy exports to Europe by cooperating with key stakeholders, such as Greece, the Netherlands, Morocco and Germany. The Energy Dialogue is continuously facilitating this exchange and the alignment of ambitions.

### Continued efforts to collaborate on climate action

Following up on several climate action activities from 2023, the Energy Dialogue is promoting efforts to set up an Energy and Climate Dialogue.

In late 2024, the Saudi cabinet approved the bilateral climate cooperation initiative, and the corresponding official note verbale was sent.

This extension is expected to become a major workstream for cooperation between the German Federal Ministry for Economic Affairs and Climate Action (BMWK) and the Saudi Ministry of Energy.

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### Unleashing potential: catalysing Tunisian and German private investment for the energy transition

Since 2012, the Tunisian-German Energy Partnership has been a central platform for fostering collaboration to advance the energy transition in both countries.

Partenariat de l'Energie

Energiepartnerschaft

In 2024, it made significant strides in promoting investment in the energy transition by boosting private sector cooperation and supporting the organisational development of CSPV, the Tunisian photovoltaic (PV) trade association.

#### Accelerating the energy transition: fostering **German investment in Tunisia**

A major focus of the Partnership has been the promotion

of German private sector investment in energy projects in Tunisia, with a view to leveraging the expertise and investment potential of German companies to facilitate the local energy transition.

As part of these efforts, the Local Business Advisory Council was held virtually in November 2024, in collaboration with the German-Tunisian Chamber of Industry and Commerce (AHK Tunisia). It was a platform for exchange for key German private sector stakeholders and German government representatives.

In-depth discussions included insights on recent developments in Tunisia's energy

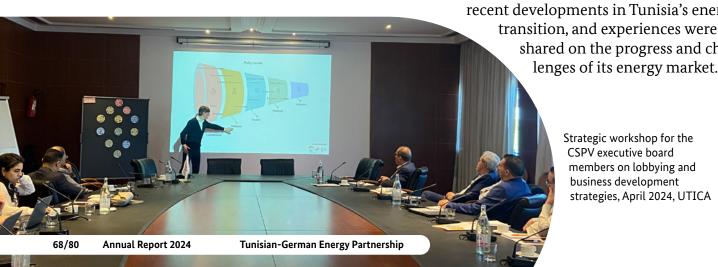
> shared on the progress and challenges of its energy market.

> > Strategic workshop for the CSPV executive board members on lobbying and business development strategies, April 2024, UTICA

While investment challenges persist, Tunisia's new Hydrogen trategy, launched in May 2024, presents a significant opportunity to leverage German energy investments in Tunisia.

#### **Empowering Tunisia's private sector for a** sustainable energy transition

The Partnership has supported CSPV in strengthening its role as a key representative of the PV sector in Tunisia, contributing to its organisational development by improving communication strategies and introducing monitoring tools to track activities. It has also helped CSPV enhance its ability to promote the solar PV market in Tunisia, through an advocacy skills workshop, and strengthened its capacity to build business alliances with European and German associations, further advancing the solar market in Tunisia.



## Deepening German-Tunisian business cooperation for greater impact

In 2024, the Partnership laid a strong foundation for expanding collaboration between Tunisian and German energy stakeholders. Key achievements included strengthening the PV sector, facilitating investment dialogues and supporting regulatory reforms.

Moving forward, the focus will be on maintaining continuous dialogue between the Tunisian and German energy sectors, further strengthening ties between businesses, policy-makers and industry associations.

The ultimate goal is to achieve a meaningful and sustainable impact by fostering long-term investment partnerships, improving regulatory frameworks and promoting knowledge exchange to support Tunisia's energy transition.

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### UAE and Germany making tangible headway on climate action

The Emirati-German Energy and Climate Partnership had another very successful year in 2024.

Through multiple high-level delegation visits and in-depth workshops, the UAE and Germany leveraged business know-how and technology solutions for decarbonisation and hydrogen value chains and laid the foundations for effective climate action.

The Partnership is implemented by Guidehouse and the German–Emirati Joint Council for Industry and Commerce (AHK).

## Germany and the UAE promote implementation of the COP28 consensus

The year kicked off with the eighth annual high-level steering group meeting and the bilateral Energy and Climate Day in Abu Dhabi. Building on successful cooperation on COP28, the event focused on supporting the UAE Consensus – Tripling Up,

Doubling Down. German and Emirati businesses and high-level government representatives discussed how to translate the COP28 consensus into concrete climate action measures.

## High-level Tech Tour with Hydrogen Task Force meetings and carbon pricing dialogues

A major success story in 2024 was the high-level Tech Tour to Germany on

carbon pricing and hydrogen in October.

As both countries strive to meet ambitious climate goals and reduce greenhouse gas emissions, it looked to share best practices and foster collaboration between key stakeholders from the UAE and Germany, addressing the critical challenges posed by the energy transition.



The three-day programme enabled an in-depth technical exchange in key areas of mutual interest: carbon pricing policies, hydrogen infrastructure and technology, power system flexibility and distributed solar energy, and carbon management. Along with a meeting of the bilateral Hydrogen Task Force and start-up pitches, the Tech Tour also featured exchange with the Potsdam Institute for Climate Impact Research (PIK). As a result, the Energy and Climate Partnership will be actively supporting the UAE's journey towards implementing a carbon pricing mechanism.

#### Strides towards climate protection at COP29

At COP29 in November 2024 in Baku, Azerbaijan, the UAE and Germany tackled some of the most pressing issues in the energy and climate sphere. They paved the way for effective carbon pricing policies in the UAE, identified key conditions for building new leading green, hydrogen-based industries in both countries and promoted energy cooperation between Europe and the MENA region.

The discussions took place at two joint side events hosted by the Emirati-German Climate and Energy Partnership in cooperation with PIK and a multilateral side event on the MENA-Europe Future Energy Dialogue. Throughout the year, virtual workshops were organised on the hydrogen core grid, willingness to pay and the Carbon Border Adjustment Mechanism (CBAM).



'The UAE looks upon Germany as a reliable partner with strong technical expertise and innovation capabilities to support our decarbonization efforts. By joining forces, learning from each other, and sharing a willingness to make a difference, we will be in a better position to accelerate the energy transition and tackle the climate crisis.'

H.E. Eng. Sharif Al Olama



## North America

Decarbonisation



## Advancing cooperation on renewable hydrogen and ammonia

Canada and Germany formed a Hydrogen Alliance in August 2022 under the umbrella of the Canada–Germany Energy Partnership and in 2024 advanced key Alliance workstreams.

Most notably, the Partnership hosted the first Canada–Germany Hydrogen and Ammonia Producer–Offtaker Conference in March at the Chamber of Commerce and the City Hall in Hamburg. Minister Habeck and his Canadian counterpart, Minister Wilkinson, opened the conference, toured industrial sites in Hamburg and had a roundtable discussion with Canadian hydrogen producers and German hydrogen offtakers about roadblocks to securing offtake agreements and mechanisms to overcome them.

The conference ended with the two ministers signing a memorandum of understanding to establish a bilateral hydrogen funding window under H2Global. Since then, the German Federal Ministry for Economic Affairs and Climate Action and Natural Resources Canada have cooperated closely to map out the details of the funding window.

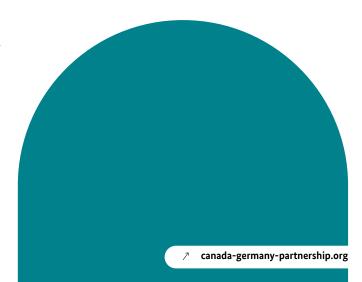
Building on this momentum, the Partnership hosted a Canadian delegation with hydrogen project proponents and policy-makers for a study trip to Berlin, Hamburg and Duisburg in May. The goal was to showcase hydrogen developments and use cases in Germany and to strengthen and build relationships to advance the Hydrogen Alliance in terms of both hydrogen trade to Germany and hydrogen cooperation in technology, education, research and development.

The latter was also the focus of the Partnership's activities around the hy-fcell conference and exhibition in June in Vancouver. Together with the German Consulate General, a roundtable and networking event was organised with German and Canadian hydrogen technology providers and researchers on business opportunities in Canada.

In September, the Partnership Steering Committee approved the Action Plan for the coming 12 months.

Alongside continuing bilateral hydrogen activities, it also focused on successful new and previous workstreams, such as offshore wind, grid modernisation, renewables integration and industry decarbonisation.

The Partnership held a workshop on designing offshore wind auctions with German industry representatives and Canadian policy-makers from the provinces of Nova Scotia and Newfoundland and Labrador, informing their processes and designs as they gear up for their auctions in 2025 and beyond.



Another Partnership initiative, which started in the autumn, was the multistakeholder Canadian-German Task Force on Hydrogen Trade. It brings together industry representatives and experts from hydrogen project developers, energy suppliers, banks and financial institutions, with the aim of developing recommendations for governments to accelerate the transatlantic hydrogen market ramp-up.

Minister Habeck and the Canadian Energy

'We welcome the

made in Canada to

green hydrogen and

Although a number of

challenges still need to

be mastered, we believe

ammonia projects.

develop several

progress that has been





## Mexico and Germany: A Deepening Collaboration for Energy Transition

#### Mexico's energy situation

In October 2024, Claudia Sheinbaum became the first woman president of Mexico. She and the new Minister of Energy, Luz Elena González, are promoting an energy transition and energy sovereignty policy in Mexico. They are continuing with the previous administration's policies, including an energy market reform which seeks to strengthen the state-owned electricity utility and petroleum companies.

#### Boosting renewables is a priority

Mexico has excellent conditions for generating energy from renewable sources thanks to its geographic location and extensive coastline. The government has set the goal of almost doubling the share of clean energy in the electricity generation mix to 45% by 2030.

Kick-off workshop for the green hydrogen potential studies in the state of Campeche

Investments of USD 23.4 billion are planned in electricity generation, transmission and distribution, and new options for private investment in the sector are being introduced.

The Mexican–German EP is supporting the government in reaching its ambitious goals whilst coping with the increasing demand for electricity.

In addition, despite Mexico not having a national hydrogen strategy yet, several green hydrogen projects are being planned in the country.

The EP is assisting in efforts to ramp up the hydrogen market with technical studies, capacity development and dialogue.



## The EP fosters networking and knowledge-sharing

The EP has been actively promoting the energy transition through various events and panels connecting the public and private sector, developing capacities and sharing information. In September, for example, the EP participated in the Intersolar Expo, which is the leading platform for technology trends and business-to-business networking in the Mexican solar market.

'We have a long-standing and powerful collaboration with GIZ and the Mexican-German Energy Partnership that has resulted in critical projects to introduce novel technologies into the Mexican ecosystem such as blockchain and green hydrogen. Specifically, thanks to this collaboration, we have been able to train hundreds of stakeholders on the green hydrogen value chain, providing key understanding and skills to unlock the country's

**José Miguel Bejarano** Innovation Manager, Siemens Energy

potential in the energy transition.'

In collaboration with the German–Mexican Chamber of Industry and Commerce (AHK), the EP organised a series of online and in-person training events, roundtables and webinars on energy transition topics. And the Local Business Advisory Council meeting in November brought together representatives from German companies operating in Mexico to discuss challenges and opportunities in the energy market.

The Green Hydrogen Training Course held in October in collaboration with Siemens Energy was designed for government and private sector participants with the objective of advancing the understanding of green hydrogen as a key enabler for the energy transition. More than 100 decision-makers completed the course, with 85% finding it useful and 56% gaining new knowledge. The course contributed to the development of a hydrogen roadmap, supported efforts to decarbonise the industry and helped build political support for green hydrogen and power-to-X (PtX) projects, including exportation to Germany and Europe

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lier in the year.

German Federal Minister Habeck to the

Bronzeville neighbourhood of Chicago ear-



U.S. Department of Energy (DOE), U.S. Department of State (DOS), U.S. Special Presidential Envoy for Climate (SPEC)

## Broadening and deepening cooperation

The third year of the Climate and Energy Partnership (CEP) between the United States (US) and Germany saw a significant expansion in both the range of topics addressed and the stakeholders involved.

In addition to the ongoing activities in the working groups on hydrogen and offshore wind – including events at both the International Partnering Forum in the US and WindEnergy Hamburg - the CEP

adopted a number of new topics and formats. This included the decision to establish a new permanent work stream on carbon management, but also the final launch of a business-to-business task force on hydrogen trade. This business platform facilitates direct exchange between interested market actors and dialogue on areas that are relevant for the hydrogen market ramp-up. Other topics covered by the CEP in 2024 included energy storage and electricity grids, which was also



only in continuing cooperation in its established formats, but also in diversifying its portfolio by expanding the range of topics it covers and bringing new partners on board.





# Oceania

## Australian-German Partnership becomes an Energy and Climate Partnership

The partnership had an eventful year in 2024, with its expansion into an energy and climate partnership and the announcement of a bilateral EUR 400 million H2Global window. It now has working groups for cybersecurity and cooperation on climate change.

AUSTRALIA - GERMANY

Partnership

**Energy and Climate** 

Collaboration in the existing focus areas – hydrogen and energy efficiency – also made substantial progress. adelphi, the German-Australian Chamber of Industry and Commerce (AHK), the Renewables Academy (RENAC) and Austrade supported the Partnership throughout the year.

#### A good year for renewable hydrogen

Hydrogen engagement led to a delegation trip by State Secretary Anja Hadjuk from the German Federal Ministry for Economic Affairs and Climate Action and German businesses to Australia in September, including the historic agreement on the joint H2Global funding window and the formation of a German project group to cooperate with an Australian project. Other hydrogen activities included the publication of a study on quadrilateral hydrogen trade

cooperation between Germany, Australia, Japan and Korea and roundtables and workshops on e-SAF and H2Global. Hydrogen will remain a key topic for the Partnership in 2025, with a study on e-SAF trade to be published in the first half of the year.

#### Energy efficiency: an area of mutual learning

The Working Group on Energy Efficiency expanded its mandate to include the net zero transition and furthered industrial decarbonisation efforts begun in 2023. In June, a study outlining cooperation opportunities in this field was published, emphasising Germany's energy efficiency networks and heat pumps as key areas for collaboration. This was followed by the release of a comprehensive global guide on energy efficiency networks to support Australian and international stakeholders in understanding this successful initiative. Preparations also began for a delegation of Australian experts to visit Germany



State Secretary Anja Hajduk and Minister for Energy and Climate Change Chris Bowen sign the Joint Declearation of Intent for a H2Global Funding Window in September 2024.

in 2025.

Cybersecurity, climate change and renewables as key areas of cooperation.

The new working groups on cybersecurity and climate change commenced their activities in late 2024 and will continue shaping their work plans in 2025.

A key milestone was reached in November 2024 when the Australian Government participated in a multilateral training exercise on crisis communication and management in the energy sector.

Renewable energy expansion and the power sector are also central to the Partnership. In 2024, offshore wind emerged as a focal issue following Australia's significant progress in establishing this market. With Germany's well-developed offshore wind industry and extensive experience, Australian stakeholders eagerly engaged in a delegation trip in March to gain insights and learn from Germany's



'German Vice Chancellor and Minister for Economic Affairs and Climate Action, Robert Habeck: This partnership is not just a declaration; it's a pathway to tangible action that strengthens our economies and supports the global transition to net zero. We are convinced that the Energy and Climate Partnership will provide numerous opportunities for fruitful private collaborations.'

Press release
Federal Ministry of Economic Affairs and Climate Action

experiences.

## Decarbonisation of industry a key topic in the Energy Dialogue in 2024

#### Industrial decarbonisation holds potential for cooperation

In 2024, the Energy Dialogue between Germany and New Zealand focused on industrial decarbonisation and energy efficiency networks.

New Zealand-German

**Energy Dialogue** 

A key milestone was the publication of a study on industrial decarbonisation cooperation, highlighting areas where Germany and New Zealand face similar challenges and can benefit from collaboration.

Recommendations included knowledge exchange on Germany's energy efficiency networks and joint efforts to reduce emissions in both countries' dairy sectors. The study was presented at the Carbon and **Energy Professionals Conference in May** and a digital session in July.

#### **Business-driven energy efficiency networks** prove to be an interesting approach

In October, the Energy Dialogue and the German-New Zealand Chamber of Com-

merce Inc. (AHK) organised two digital sessions on energy efficiency networks, a German business-led initiative that can enable industrial decarbonisation without requiring new regulation or subsidies.

Experts provided insights into the networks and their impact, and New Zealand and German experts discussed practical applications. The New Zealand Energy Efficiency & Conservation Authority (EECA) participated, and the possibility of a New Zealand pilot network is being explored.

at the CFP Conference in

Christchurch, May 2024



## High-level visit underlines interest in energy cooperation

In April, Director General Schnichels from the German Federal Ministry for Economic Affairs and Climate Protection visited New Zealand, speaking at a breakfast briefing on the status and future of Germany's energy transition. His discussions with the Ministry of Business, Innovation & Employment (MBIE) focused on New Zealand's renewable energy expansion.

# The visit highlighted the ongoing interest in collaboration and knowledge sharing.

The bilateral Economic Advisory Board also met in April, featuring updates on key Germany–New Zealand energy collaborations, including the hydrogen research centre of Helmholtz-Zentrum Hereon and the University of Otago and the activities of German company MAN Energy Solutions and Hamburg Airport in New Zealand.

#### **Outlook for 2025**

Another presentation of the industrial decarbonisation study will take place in Christchurch, with strong interest in implementing its recommendations. Further engagement on energy efficiency networks is planned, with EECA currently reviewing a potential New Zealand pilot project. If interest persists, adelphi and AHK will provide more support.



Renewable energy will remain a key topic, with potential cooperation on grid integration of variable renewables and offshore wind, for which the New Zealand Government established its first regulatory framework in late 2024. Hydrogen collaboration may also be further explored.



## MENA-Europe Future Energy Dialogue 2024 A Focus on Energy Infrastructure

On 8 September 2024, over 300 high-ranking decision-makers from Europe and the Middle East and North Africa (MENA) region met in Thessaloniki for the second conference of the MENA-Europe Future Energy Dialogue 2024 (MEFED24). The conference, co-hosted by the German Federal Minister for Economic Affairs and Climate Action Robert Habeck and his Greek counterpart, Theodoros Skylakakis, highlighted the key role played by strong energy partnerships in ensuring future energy security and driving forward the global energy transition.

As the German Government's hydrogen import strategy and other documents demonstrate, increased regional cooperation is crucial to the energy transition for Germany and the EU. North Africa and the Gulf region are essential partners for achieving a resilient, sustainable, reliable and diversified energy supply in Europe.

Group picture of high-level representatives with MEFED co-hosts and the Thessaloniki Declaration, September 2024

The 2024 conference brought together high-ranking representatives from 25 countries, including (deputy) ministers and leading representatives from the energy industry, the financial sector, international organisations and the European Commission. Together, they set out the next set of milestones in energy policy cooperation. Production of renewable electricity and hydrogen and expansion of infrastructure enable cross-regional energy trading and have the potential to increase economic prosperity and reduce greenhouse gas emissions in both regions.

The Thessaloniki Declaration was adopted as part of the conference. The Declaration calls for intensified dialogue on the development of integrated energy infrastructure planning with a view to accelerating the expansion of energy trade between Europe and the MENA region.



A key factor in ensuring implementation of these projects is the mobilisation of financial resources. For this reason, additional proposals for financial mechanisms to bridge funding gaps are to be developed.

MEFED24 was organised by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Guidehouse as part of the bilateral Climate and Energy Partnerships and Dialogues.

Group picture of the MEFED organisation team and Dr Habeck, September 2024



'To better tackle these shared challenges, it is crucial that we gain a clear understanding of the current status of relevant projects between the MENA region and Europe, further concentrate on key priority projects, exchange experiences from initial flagship projects, learn from each other, and in doing so, develop new ideas to deepen the transformative collaboration between the MENA region and Europe.'

**Dr Robert Habeck**German Vice-Chancellor and Federal Minister



# Women in the energy sector: accelerating the energy transition with female energy experts

A successful energy transition requires the active involvement of women – unlocking the untapped potential of billions will accelerate progress exponentially. Offering unique perspectives, innovative solutions and a deep commitment to sustainable development, women and diverse teams play a crucial role in transforming the energy sector.

To meet the 1.5°C climate target, the global energy sector will likely expand its workforce to 134 million by 2030. This will require 67 million new workers, including female professionals.

inclusion in renewable energy policies is therefore not only a moral imperative and a response to the talent shortage, but also a strategic necessity for a swift and just energy transition.

In 2024, bilateral climate and energy partnerships (CEPs) led impactful activities to amplify women's role in the energy sector.

Building on previous and new collaborations, the global Women Energize Women (WEW) campaign and the CEPs gathered female energy professionals worldwide for women-led energy- and climate-specific panel discussions (e.g. at Intersolar and the Ukraine Recovery Conference), strategic networking sessions (e.g. at the Africa Forum and Intersolar South America) and best-practice workshops. 2024 also saw the campaign and the CEPs focus on strengthening women's networks (in Brazil, China, Ukraine, Ethiopia, Viet Nam, etc.), building strategic alliances with them, and collecting and evaluating strategic data, for instance on female skilled workers (Türkiye) and energy policies in the G20 countries (Brazil).

Furthermore, the meeting between Federal Minister Dr Robert Habeck and young women leaders at BETD 2024 addressed the urgent need to bridge the energy sector's talent gap by tapping the potential of women.



Ukraine Recovery Conference 2024

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