

## Energy Newsletter



**Bimonthly news on GIZ's work on energy and climate protection**

A service by GIZ Energy

**Dear readers,**

The global energy landscape continues to evolve at a remarkable pace, marked by significant challenges and progress that provide reasons for optimism. Wind and solar are now the fastest-growing sources of electricity in history, with last year witnessing days when a gigawatt of solar PV was installed within a single day. At the COP28 meeting in Dubai, the world committed to tripling the installed renewable capacity by 2030; according to the IEA's latest Renewables Report, achieving two-and-a-half times the current capacity wouldn't even necessitate new policies. Battery technology is advancing rapidly, with production output soaring. In 2015, around 36GWh of lithium-ion batteries were produced; last year, the figure reached approximately 1TWh. In the past decade, battery cell costs have plummeted from \$1,000 to \$72 per kWh, while energy density has doubled and degradation per cycle has been cut in half. Meanwhile, global sales of electric vehicles have increased from 10.5 million to 14 million.\*

However, despite these advancements, the COP28 conference has reemphasized the world's focus on the existing gaps in climate commitments and the actual implementation of climate goals. There is a pronounced need for more ambitious efforts to meet the targets of the Paris Agreement. The dual challenges of energy security and climate change continue to be central themes, especially as

the frequency of climate-related disasters underscores the urgency. Our commitment is essential in meeting these challenges.

This newsletter is designed to inspire and inform, highlighting both successes and opportunities. From community-impacting projects to policy developments that promote a cleaner future, the stories within illustrate the tangible outcomes of our collective endeavors.

We wish you an enjoyable read!

**André Eckermann**  
**Head of Competence Centre Energy and Transport**

**Mike Enskat**  
**Head of Infrastructure – Energy, Water, Mobility**

\*the figures are taken from the following article, which we highly recommend:

» [Net Zero Will Be Harder Than You Think - And Easier. Part II: Easier, Michael Liebreich, February 2024](#)

## UPCOMING EVENTS

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- » Bringing German Utility Expertise and Know-how to our Partners
- » A small monster

## PUBLICATIONS

## GIZ JOB OFFERS

## INFORMATION AND LINKS

## UPCOMING EVENTS

**17 March to 18 March 2024**

**Strategietreffen REN21**

Berlin, Germany

**18 March 2024**

**20 Years Renewables Celebration (REN21) TBC**

Berlin, Germany

**19 March to 20 March 2024**

**Berlin Energy Transition Dialogue (BETD)**

Berlin, Germany

**16 April to 18 April 2024**

**IRENA Assembly**

Abu Dhabi, United Arab Emirates

**20 May to 24 May 2024**

**ESMAP Consultative Group Meeting**

Washington DC, USA

**03 June to 07 June 2024**

**Asia Clean Energy Forum 2024**

Manila, Philippines

**12 June to 14 Juni 2024**

**IRENA-Rat**

Botschaft Abu Dhabi

**19 June to 21 June 2024**

**Intersolar 2024**

München, Germany



••• **AFRICA** •••

## « One project, one territory » : a model for integrated rural electrification in Madagascar

Support to the development of a methodology for the integrated least-cost planning of rural electrification projects in Madagascar



Bay of Antongil © GIZ

Faced with a low electrification rate of around 30%, the Malagasy government aims for 70% by 2028. GIZ's project "Promotion of Rural Electrification through Renewable Energies (PERER)" assists the Ministry of Energy in implementing an integrated electrification model, IDF, which prioritises universal electricity access at minimal cost. IDF combines decentralised renewable sources (hydroelectricity, solar, biomass, etc.) and several solutions (grid, mini-grids, solar kits, etc.), currently tested in Antongil Bay, aiming for "one territory, one project" expansion. Over 50,000 grid and mini-grid connections, powered by 9.3 MW of solar and hydro energy, plus 16,000 solar kits, are planned, with an 87.2-million-euro investment over 30 years.

Beyond electrification, the project includes road rehabilitation, promoting productive electricity use, empowering women, reducing poverty, and watershed protection. GIZ conducted a 2023 preliminary study, while Tozzi Green prepares a feasibility study for KfW financing. GIZ also explores EU co-financing options for broader implementation in Madagascar.

**Contact person** [Carlos Miro](#)

#### **Project description**

» [Green electricity: driving Madagascar's development - giz.de](#)

» [L'électricité verte : un moteur du développement de Madagascar - giz.de](#)



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## Uganda Showcases Carbon Pricing Tool for Climate Action

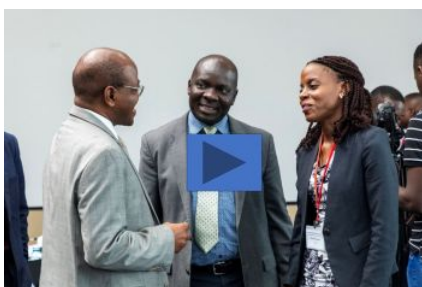
Uganda, Kenya, Tanzania, Rwanda, Burundi, Ethiopia





Participants at the Carbon Pricing pose for a group photo during the event © GIZ Uganda

Stakeholders convened at Protea Hotel, Entebbe in mid-February 2024, for a workshop on Carbon Pricing. Their discussion focused on instruments that set a price on carbon emissions as a method to address climate change. During the event, Uganda piloted the Carbon Pricing Incidence Calculator, a tool that facilitates evidence-based decision-making for socially responsible carbon pricing.



Workshop discussion © GIZ Uganda

The workshop, jointly organised by GIZ on behalf of the German Government and Uganda's Ministry of Finance, Planning and Economic Development, brought together 40 practitioners and policy makers.

Ugandan Minister of State for Finance and Planning, Hon. Amos Lugolobi, expressed gratitude to GIZ and the Mercator Institute on Global Commons and Climate Change for the support in developing the tool.

The discussions were enriched by insights from the UN Framework Convention on Climate Change/Regional Collaboration Centre East and Southern Africa, local authorities including the Uganda Revenue Authority, and country experiences from Kenya and South Africa.

**Contact person** [Eric Wakabi](#)

### **Project description**

The Global Carbon Markets project strengthens capacities of public & private sector decision makers in use of new & existing market-based climate protection instruments for national and regional climate action.

### **Further information**

» [Carbon Pricing Incidence Calculator](#)



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## Flexibility that pays off

Ghana



The GIZ team is shown the voltage stabilisers installed in the server room by hospital technicians © GIZ

Hospitals consume an enormous amount of power. Making them more energy efficient and helping them to produce their own climate-friendly solar power brings costs down and energy security up. Therefore, the project "Sustainable Energy and Energy Efficiency for Climate Protection in Ghana" (SustainE4Climate) supports the Korle-Bu Hospital in Accra with energy-efficient equipment and a solar power system. The measures have already had a significant impact - albeit in a different way than originally planned.

After a fire in the data center, power supply was interrupted, and the hospital was unable to work reliably. The SustainE4Climate project reacted quickly, and automatic voltage stabilizers were not installed in the main administration building as originally planned, but in the damaged server room. This allowed the hospital to resume operations. Once the damage has been repaired, the voltage stabilizers will be moved to the planned location to further advance the energy transition in Korle-Bu.

**Contact persons** [Katja Schuler](#) and [Kerstin Kreß](#)

#### **Project description**

In Ghana, power is expensive and harmful to the climate. The project supports the expansion of renewable energies and thus promotes Ghana's climate targets.

» [Green energy for climate protection in Ghana - giz.de](#)

#### **Further information**

» [Download the energy efficiency strategy Mali](#)

» [Read about the energy efficiency workshop in Burkina Faso](#)



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## Making markets work for the most vulnerable – clean cooking in Rwanda's refugee camps

Can you design a market-driven, demand-side cookstove subsidy that reflects the complexities of vulnerabilities in humanitarian settings?



National consultation on the RBF scoring approach © Vivine Umucyo/Practical Action

This is the question that GIZ and Practical Action (PA) are exploring as part of a new EnDev project on “Results-based financing for Refugees” (RBF4R). PA is already implementing a Swedish funded project on Renewable Energy for Refugees in and around the camps in Rwanda. Complementing this, RBF4R offers a top-up subsidy on improved cookstoves for the most vulnerable households in a vulnerable population – with the joint aim to make markets work for all. Yet, how to select the eligible households? For this, EnDev designed a scoring approach building on the vulnerability criteria recorded in UNHCR’s database. The rationale: The more criteria a household fulfils, the higher the likelihood to be among the most vulnerable. To discuss this approach, PA conducted camp consultations with refugees and local stakeholders followed by a national consultation on the approach. Now, it’s time to make it work in implementation.

**Contact persons** [Nathan Moore](#) and [Dorothee Merkl](#)

#### **Project description**

The RBF4R project aims to facilitate access to clean cooking markets for the most vulnerable households in Rwanda’s refugee camps, while leveraging the Renewable Energy for Refugees (RE4R II) project, which is funded by Sweden and implemented by Practical Action.



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## Celebrating Influential Women in Energy in Ethiopia 2023

Ethiopia





Awarded influential woman photographed with the GIZ-EnDev Ethiopia Programme Project Manager and The Ethiopian German Energy Cooperation Project Manager © EWiEn

We are thrilled to have partnered with the Ethiopian Women in Energy Association (EWiEn) for the exciting Influential Women in Energy Ethiopia 2023 event! It was a celebration showcasing the extraordinary achievements of trailblazing women reshaping the energy sector.

Throughout the event, a diverse array of talented professionals being honored for their groundbreaking contributions. Their stories of strength and leadership were inspiring, and a powerful reminder of the key aspects diversity plays in driving the energy sector forward.



Please watch the event on YouTube © EWiEn

Congratulations to all the deserving awardees! Their extraordinary successes mark a significant milestone in their careers and serve as shining examples of the remarkable advances and innovations achieved by women in this field. These success stories will surely motivate more women to join Ethiopia's energy sector.

GIZ-EnDev Ethiopia Programme and the Ethiopian German Energy Cooperation stand alongside with the Ethiopian Women in Energy Association (EWiEn) in supporting the key role of Ethiopian women in the collective efforts to ensure energy access for all.

**Contact person** [Honey Girmai](#)

### **Project description**

Energising Development is a global programme financed by four core donor countries and co-financed by the EU in several countries, including Ethiopia. Energising Development Ethiopia aims to create self-sustaining markets for clean energy, focusing on renewable energy and improved cooking solutions for low-income homes, social facilities, and small to medium-sized businesses.

» [Energising Development](#)





## International Best Practices in Solar and Wind Power Forecasting

GET.transform Technical Brief compiles global insights into variable renewable energy forecasting

Latin America and the Caribbean, Peru, Mexico, Dominican Republic, Chile



Wind and solar are variable renewable energy sources © GIZ

A main challenge of the energy transition is the weather-dependent and thus fluctuating power production of wind farms and solar plants as it demands updates to power system operation and planning.

In a technical brief, GET.transform delves into international best practices in forecasting solar and wind power, emphasising the value precise predictions provide for power system stability and an economic integration of renewable energies. Drawing on over two decades of global experience in expanding variable renewables, the report outlines fundamental techniques, data requirements, and key factors influencing forecast accuracy.

Authored by the forecasting experts of energy&meteo systems, the brief represents an extract from an in-depth study on Peru's power forecasting system that GET.transform undertook. The study offers 11 concrete recommendations aimed at significantly improving the quality of solar and wind power forecasts in the country. The implementation of these recommendations marks a crucial stride toward a more sustainable energy future in Peru.

**Contact person** [Daniel Cumpa Exebio](#)

### **Project description**

GET.transform is a technical assistance programme supporting national and regional partners in advancing their energy transitions. GET.transform is part of the European multi-donor platform Global Energy Transformation Programme (GET.pro), and supported by the European Union, Germany, Norway, Sweden, the Netherlands and Austria.

### **Further information**

» [Global Energy Transformation Programme](#) » [GET.pro \(global-energy-transformation.eu\)](#)

» [GET.transform – Transforming Energy Sectors Globally \(get-transform.eu\)](#)

Longer news version of the above: International Best Practices in Solar and Wind Power Forecasting

» [GET.transform \(get-transform.eu\)](https://get-transform.eu)

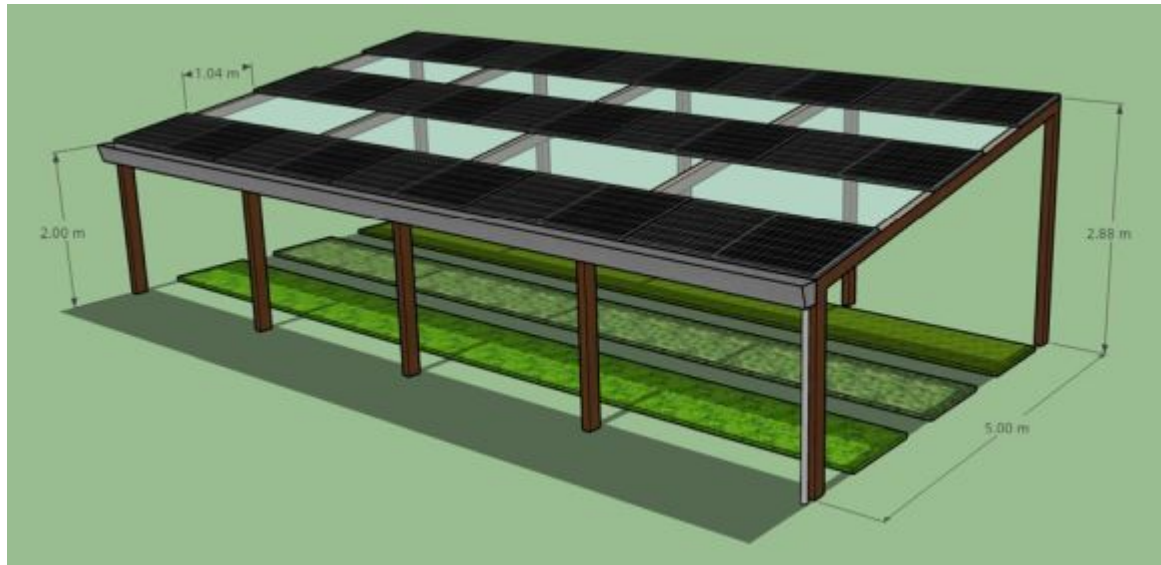
Downloadlink of the best practice study » [GET.transform-Brief\\_VRE-Forecasting-Solar-Wind.pdf \(get-transform.eu\)](#)

» [Peru study mentioned in the text](#)



## Agrivoltaics: Bridging the Gap for Clean Energy Access and Rural Empowerment in Brazil

Research suggests that the use of agrivoltaics can boost access to clean energy and strengthen rural communities



Model of Agrivoltaic vegetation house © GIZ

A recent study commissioned by the German-Brazilian Energy Partnership has culminated in the publication of "An evaluation of the potential of agrivoltaic systems in Brazil" in the Energy Applied journal (February 2023). The research highlights the challenges of food insecurity and energy poverty in Brazil's rural communities, proposing agrivoltaic (AV) technology as a transformative solution. By integrating energy generation with agriculture, AV systems optimize land use, showing particular promise for small farmers. This aligns with global trends in seeking multifunctional solutions for sustainable energy production, with the potential to positively impact Brazil's energy sector by addressing rural energy poverty and promoting sustainable agriculture.

**Contact person** [Kristina Kramer](#)

### Project description

The German-Brazilian Energy Partnership provide a forum for high level political dialogue and bring together representatives from different sectors in order to support a broader use of renewable energies and energy efficiency.

» [German-Brazilian Energy Partnership](#)

### Further information

Read the full article in English here » [An evaluation of the potential of agrivoltaic systems in Brazil - ScienceDirect](#)



# Bolivia visits electromobility projects in Santiago, Chile: an enriching experience



Visit to the electro-terminal Los Espinos METBUS – ENEL-X. Santiago, Chile © PEERR/GIZ

With the aim of learning about Chile's experiences in the implementation of electric mobility, and the related actions that allow its adequate development from the public and private sectors, a mission from Bolivia, made up of different government institutions in the electricity sector, made a tour of several entities to learn about their successful experiences.

All companies provided key insights into how e-mobility can be a sustainable and cost-effective solution for public and private transport. The experience for the participants was an important step for the consolidation of electric mobility in Bolivia.

The energy transition seeks a change in the automotive industry with the incorporation of electric vehicles. In recent years, Bolivia began to implement regulations, such as Supreme Decree No. 4539, which modify the rates of the tariff levy for the import of electric and hybrid vehicles, etc. The goal for 2030 is to achieve a 10% growth in the share of electric vehicles in the public transport vehicle fleet in Bolivia.

**Contact person** [Michael Mechlinski](#)

## **Project description**

The Renewable Energy Program has been working in Bolivia since 2016 and aims to improve the technical, economic, legal and institutional conditions for the integration of renewable energies into the electricity system, and for the development of energy efficiency.

» [Expanding the use of renewable energy - giz.de](#)

## **Further information**

» [Renewable Energies in Bolivia - energypedia](#)







# Financial service launched for green hydrogen projects in Chile

Chile



Presentation of the financial service to private sector © 4e Chile GIZ

The Financial Service Assistance (FSA) was launched on 11 January 2024, with more than 70 attendees from the private sector, identifying the main key factors for the financing and development of green hydrogen projects.

The FSA will accompany companies and projects in the financial structuring for obtaining financing. This service is open to national and international companies that are present in Chile.

Among the major needs of the sector is to have new types of contracts and instruments that allow the viability of projects, such as Contracts for Difference (CfD's), which would allow new investors to enter the market, among others.

The FSA is part of the project "Renewable Hydrogen Development in Chile", which is co-financed by the European Union in the framework of the Team Europe Initiative and the German Federal Ministry of Economics and Climate Protection (BMWK) and implemented by GIZ.

**Contact person** [Cristian Fuentes](#)

## **Project description**

The Team Europe Project for the Development of Renewable Hydrogen in Chile, co-funded by the European Union and the German Federal Ministry of Economics and Climate Protection (BMWK), and implemented by GIZ, is the main vehicle for implementing the Team Europe Initiative for the Development of Renewable Hydrogen in Chile, a joint effort of the European Union and its Member States to foster cooperation with Chile in the development of its renewable hydrogen economy.





## German-Chilean consortium aims to design a sustainable hydrogen and green ammonia park in Antofagasta

Chile



The seminar was attended by representatives from the public and private sector and academia © 4e Chile GIZ

The seminar "Conditions for the competitiveness and sustainability of the Green Hydrogen Industry and derivatives in Antofagasta", which was organised as part of the International Hydrogen Ramp-Up Programme (H2Uppp), which is commissioned by the German Federal Ministry of Economics and Climate Protection (BMWK) and implemented by GIZ, was held on 24 January in Antofagasta (Chile).



Watch the recording and download the presentations of the seminar (Spanish only) © 4e Chile GIZ facilities.

At the event the German-Chilean consortium consisting of the companies Soventix Chile, SI Solar Investments and Pabettin, presented the results of the Public-Private Partnership (PPP) project "SolarNH3-Pool Chile: concepts for the development of a sustainable industrial park for H2V and derivatives in the Antofagasta Region", whose objective was to design a sustainable hydrogen and green ammonia park in Antofagasta, optimising the regional infrastructure through a technical-economic analysis for the design of the

**Contact person** [Cristian Fuentes](#)

### Project description

The International Hydrogen Ramp-up Programme (H2Uppp) of the German Federal Ministry for Economic Affairs and Climate Action (BMWK) promotes projects and market development for green hydrogen in selected developing and emerging countries as part of the National Hydrogen Strategy.

» [International Hydrogen Ramp-up Programme \(H2Uppp\)](#)

### Further information



••• ASIA •••

## “What can three women possibly do for Vietnam's energy sector?”

Viet Nam



[Link to YouTube: Wind turbines and livestock](#) © GIZ

"What can three women possibly do for Vietnam's energy sector?" Over a decade, this question still lingers in the mind of three women who laid the foundation for the GIZ Energy Support Programme.

The doubtful sayings, however, didn't let them down. They first actively looked for possible locations to install wind measuring stations and developed first courses on wind measurement and quality analysis following international standards in Vietnam.

From the beginning, the huge wind turbines caused a lot of concern to provincial leaders, for example electrical leak might kill people and cattle, or the poles might fall, Mai, GIZ ESP Officer recalled.

With relentless efforts, gradually, everything has changed.

Once the provincial leaders got informed, they realized that wind was clean and safe energy. They went from concern to absolute trust. It was a complete turn-around, Mai shared.

From zero, Vietnam now leads the region in renewable energy.

**Contact person** [Philipp Munzinger](#)

**Project description**

The GIZ Energy Support Programme aims to contribute to Viet Nam's emissions reduction strategy and green growth strategy by improving the existing regulatory framework for Renewable Energy and Energy Efficiency.

» [GIZ Energy Support Programme](#)



## 4.97 TWp – India's potential for new and innovative solar applications (NISAs)

GIZ developed GIS based Solar Technology-Atlas application to carry out technical potential estimation for NISAs in India



Conducting an exemplary state level analysis in Maharashtra with the STAAI to explore the estimated potential of NISAs © GIZ/STAAI

Space-efficient New and Innovative Solar Applications (NISAs) are imperative for scaling up renewable energy capacity in India and overcoming challenges such as land utilisation and power evacuation rights-of-way in conventional ground-mounted solar installations. GIZ along with a consortium considered scientific approaches and developed robust methodologies for estimating the technical potential of NISAs in the Indian context. The total potential for NISAs was estimated at 4.97 TWp whereby AgriPV accounts for the largest share with 3.16 TWp.

The Solar Technology and Application Atlas for India (STAAI) enables users to use the filter function and select NISAs on the GIS map of India, choose a desired area (city/district) for installation, and set the installation capacity and LCOE ranges to analyse and compare the desired outputs. The innovative part of this atlas is that it is multi-layered and GIS based.

**Contact person** [Abhinav Jain](#)

### **Project description**

India's renewable energy targets require a substantial increase in installed solar PV capacity. However, limited land availability makes it necessary to explore new innovative solar areas across the country.

» [Developing innovative new solar areas](#)

### **Further information**

Explore the » [STAAI \(Beta-Version\)](#)

» [New reports on the NISAs](#)





# Seeds of Empowerment: Ibu Suhaeni's Solar Irrigation Revolution

Indonesia, ASEAN



Lush greens flourish under Ibu Suhaeni's care, as solar-powered irrigation turns her field into a testament to sustainable farming in Indonesia © Rahma/REEP2, GIZ Indonesia & ASEAN

The story is told from the perspective of Ibu Suhaeni, a female farmer who has experienced firsthand the benefits of integrating renewable energy-based irrigation system into her farming practice, showcasing the important role of women in bringing agricultural innovation and sustainability. "Sun power turned my endless watering chores into a breeze," Ibu Suhaeni, a forward-thinking vegetable farmer from Kaledupa Island, tells us. Her story is a glimpse into how clean energy is making a difference in Indonesia's countryside, turning old ways into new opportunities.

Kaledupa Island in Southeast Sulawesi is known for its farming potential. But the old way of watering crops by hand was holding farmers back. That's where the PV-Agri Pilot Project comes in. Led by GIZ implemented project, REEP2, bringing in solar-powered automatic irrigation to make farming easier and greener. Ibu Suhaeni who was initially outside the circle of main beneficiaries, observed the success of PV-Agri installations in neighboring fields, inspired seeing the work wonders nearby, she decided to give it a go. With a little help from GIZ, she set up her own solar irrigation, cutting down her watering time and boosting her crops quality, all while saving a lot of water (up to 70%).

"This new way of watering isn't just good for the crops; it lifts our whole community," she says. It's a big win for women in farming and for taking care of our planet.

Ibu Suhaeni's success shines a light on Indonesia's big shift towards cleaner energy, showing how it can bring better jobs and healthier environments. Her farm is more than just a place where things grow – it's a sign of hope and change, led by women like her who are ready to make a difference for the future.

**Contact person** [R. Rahma](#)

## **Project description**

The 1,000 Islands-Renewable Energy for Electrification Programme Phase II (REEP2) is a project that focuses on renewable energy grid integration, which aim to improve the institutional, regulatory, and technical conditions for achieving the policy target of 23% of RE by 2025 at national and regional level. The project is implemented by Directorate General for New Renewable Energy and Energy Conservation (DG-NREEC) on behalf of Government of Indonesia and Deutsche



REEP2 also attached the PV-Agri Kaledupa Factsheet as knowledge products that we produce.

» [PV-Agri Kaledupa Factsheet](#)



## E-Learning Sparks: Igniting Indonesia's Renewable Energy Skills

Indonesia, ASEAN



In a dynamic exchange of ideas, Pak Hansen Hartado Tarigan actively contributes to the discourse, exemplifying the robust engagement that fuels Indonesia's renewable energy training sessions ©Masri Vani/REEP2, GIZ Indonesia & ASEAN

The story is narrated from the perspective of Hansen Hartado Tarigan, a participant in the E-Learning program and PPSDM DJ EBTKE, KESDM, staff, providing a firsthand account of the impact and effectiveness of the training.

"Stepping into the future, we're not just prepared; we're inspired to innovate," shares Hansen Hartado Tarigan from Pusat Pengembangan Sumber Daya Manusia, Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi, Kementerian Energi dan Sumber Daya Manusia (PPSDM DJ EBTKE, KESDM) encapsulating the transformative power of knowledge in Indonesia's renewable energy sector. Amidst the global push for sustainable practices, Indonesia is at a pivotal juncture, aiming to decentralize its energy resources to harness the vast potential of renewable energy. This ambition, however, is met with the challenge of equipping regulators and energy professionals with the requisite expertise to navigate and foster this green transition effectively.

GIZ implemented project, REEP2, tailored to address this gap through development and implementation of E-Learning modules. These digital courses, covering Demand Forecasting, Smart Grids, and Battery Energy Storage Systems (BESS), represent a significant leap towards democratizing knowledge in a sector that's rapidly evolving. The modules blend theoretical foundations with practical insights, offering an immersive learning experience that transcends traditional boundaries.

The training has already made a difference for the experts at DJ EBTKE, DJK, and PLN. The integration of E-Learning into PPSDM DJ EBTKE, KESDM's system, signifies not only a milestone in educational innovation but also a strategic alignment with Indonesia's broader energy transition goals.

This story of E-Learning's role in empowering Indonesia's energy professionals resonates beyond individual success, symbolizing a collective stride towards a more sustainable and resilient energy future. Through this lens, Indonesia's journey towards renewable energy mastery is not just about technological advancement but also about building a community of knowledgeable, skilled, and inspired individuals ready to lead the charge.

**Contact person** [R. Rahma](#)

### **Project description**

The 1,000 Islands-Renewable Energy for Electrification Programme Phase II (REEP2) is a project that focuses on renewable energy grid integration, which aim to improve the institutional, regulatory, and technical conditions for achieving the policy target of 23% of RE by 2025 at national and regional level. The project is implemented by Directorate General for New Renewable Energy and Energy Conservation (DG-NREEC) on behalf of Government of Indonesia and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of German Federal Ministry for Economic Cooperation and Development (BMZ).



## Successfully Launched: Digi-Twin Simulator-based Trainings Initiative

Virtual Reality Based Training Simulators for Energy Efficiency



Mr. R. K. Singh launching Digi-Twin © GIZ India

On the occasion of the Bureau of Energy Efficiency's (BEE) 22nd Foundation Day on 1 March in Delhi, Mr. R. K. Singh Hon'ble Cabinet Minister of Power and New & Renewable Energy, India successfully launched "Digi-Twin", a joint initiative of GIZ India's Energy Efficiency in Industry and Data project and BEE.

“Digi-Twin” is a virtual reality-based training tool on energy efficiency for Medium Small and Micro Enterprises (MSME) workforce to get hands on experience on major energy guzzling utilities like boilers, furnaces and combustion system, compressed air systems, induction motors, fans and blowers and pumping system. This simulation mirrors real utilities enabling workers to grasp cause-effect-action-relations and learn best practices of energy conservation.

The VR based training simulators intend to train over 3,000 MSME workforce and is scalable to more than 20,000. Some of the major highlights of the Digi-Twin are:

- It operates and behaves as per the actual equipment
- Evaluates equipment’s performance in various operating conditions
- Provides hand-on training without any operational risks

**Contact persons** [Nitin Jain](#) and [Ayan Ganguly](#)

### **Project description**

The ‘Energy Efficiency in Industry and Data’ project is funded by BMZ and implemented by GIZ India together with the Bureau of Energy Efficiency, Ministry of Power. The project seeks to improve the ability of companies in the non-PAT industries in India’s steel and pulp and paper industries to implement energy-efficiency measures.

### **Further information**

» [Promoting energy efficiency in Indian industry - giz.de](#)



## Lessons learned from Germany: Kazakhstan launches its first pilot project on deep refurbishment of multi-apartment buildings

Kazakhstan



Kazakh decision makers learning about building deep refurbishment in Germany. Selected pilot building for refurbishment in Kokshetau © giz Marie-Anne Serve

In Kazakhstan, the building sector is the 2nd most energy intensive sector after industry, with about 40% of the national energy consumption. Approximately 70% of the residential building stock of the country was built between the 1950s and 1980s, and is, therefore, in need of major thermal modernisation. Despite several initiatives, Kazakhstan doesn’t have, to this date, full-fledge

examples of energy efficient, climate resilient refurbishment of buildings.

During a study tour in Berlin organized by GIZ in October 2023, decision makers from Kazakhstan learned about East-Germany and Eastern Europe experiences in deep refurbishment of multi-apartment (panel) buildings. One month later, at the 5th International Energy Saving Forum in Astana, GIZ signed a Letter of Intent with the municipality of Kokshetau to refurbish a multi-apartment building according to German standards. Through this pilot projects, local companies and governmental institutions will be trained in order to deliver high-quality project preparation eligible to international climate funding, in a view of possible replicability.

**Contact person** [Marie-Anne Serve](#)

### **Project description**

Financing Energy for Low-Carbon Investment – Cities Advisory Facility (FELICITY), is financed by the International Climate Initiative (IKI) of the BMWK, and co-implemented by between GIZ and the European Investment Bank (EIB) in Kazakhstan, Ukraine and Uzbekistan. By providing policy advice to the governments as well as capacity development to project promoters and financial intermediaries, FELICITY II aims to prepare a pipeline of bankable projects for EIB's concessional financing.

### **Further information**

» Хотим, как в Германии: сфера ЖКХ - самая кризисная в Казахстане? ([tengrinews.kz](https://tengrinews.kz))



## ••• EUROPE •••

### Chervonohrad Vocational Mining and Construction Lyceum switches to green energy

Ukraine

Solar panels were purchased and installed thanks to the project "Supporting Structural Changes in the Coal Regions of Ukraine", implemented in Chervonohrad by GIZ Ukraine with the support of the German Government.

Today, 360 square meters are served by solar panels, providing the lyceum with renewable energy and saving money. But it is not only practical, but also educational! Students get the opportunity to learn practical skills in the field of solar panel maintenance.

Also, in the near future, the lyceum will launch the "Renewable Energy Center" with workshops, laboratories and recreation areas, where students will be able to deepen their knowledge and gain practical experience.

The Chervonohrad Vocational Mining and Construction Lyceum already has two courses where students master the profession "Electrical fitter for repair and maintenance of solar panels". They plan to recruit another group next year.

**Contact person** [Yana Timon](#)



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### Women Energize Women at COP28: Women's Role in Tripling Renewables





Women Energize Women and Allies panel COP28 on "All in for 1.5°: Accelerating Technologies and Gender Equality in Renewable Energy" © BEE / Maria Göckeritz

COP28 emphasized the importance of tripling renewable energy by 2030. Utilizing women's currently largely untapped labour power is crucial for this task. While gender was one of the buzzwords at the COP28 – a whole conference day was dedicated to the gender environment nexus – there is still a lot of work to be done. Women continue to be underrepresented in the energy sector, and during the COP28 negotiations women made up only 38% of the party delegations.

Thus, showcasing presence at this conference with BMWK's initiative Women Energize Women (WEW) was crucial to push forward a gender-based approach for the energy transition. WEW held two events on 6th December with over 120 participants and was involved in a range of activities and high-level-events. The conference also marked the successful start of the "Male Allies"-Series with opening words by BMWK State Secretary Stefan Wenzel. This series is an effort to address men to employ their privileges in favour of gender equality in the energy system.

**Contact person** [Katarzyna Rezza Vega](#)

### Project description

"Women Energize Women" is a communication campaign for the global empowerment of women in the energy sector by the Federal Ministry for Economic Affairs and Climate Action (BMWK). It is implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and German Renewable Energy Federation (BEE) within the framework of BMWK's Bilateral Energy Partnerships.

» [Women Energize Women – Conference](#)



## EnDev Officially Launches its Demand-Side Subsidies (DSS) Component

Global



Demand-side subsidies (DSS) can directly reduce the price of energy product for customers © GIZ

With launches in Liberia and Uganda, EnDev has officially begun implementation of the DSS component. Funded by the Dutch Directorate-General for International Cooperation (DGIS), the DSS component aims to facilitate access to modern energy services (cooking and electricity) by bridging the affordability gap for low-income and/or displaced populations who are not currently reached by commercial markets. The component operates pilots in four countries: Liberia, Malawi, Niger, and Uganda.

By piloting innovative financing schemes, the component contributes to global learning and knowledge-sharing on DSS design as well as provide recommendations for future replication at scale via e.g. the End-User Subsidy Lab. EnDev collaborates closely with the World Bank to facilitate scale-up of successful mechanisms.

The DSS pilot in Liberia supports Solar Home Systems (SHS) for multidimensionally poor countries, while the Uganda pilot supports SHS and cookstoves for refugees, host communities, and the rural poor. The pilots in Malawi and Niger are not far behind, with launches forecasted for the coming months.

**Contact persons** [Christian Borchard](#) and [Olivia de Veschi](#)

### Project description

Energising Development (EnDev) is an international flagship programme for providing energy access. The driving force behind EnDev is the partnership of Germany, the Netherlands, Norway, and Switzerland.

» [Enabling access to climate-friendly energy supply - giz.de](#)

### Further information





## Is green hydrogen and Power-to-X trade already governed in international law?

What countries can do now to make their regulatory systems fit for the emerging green hydrogen and Power-to-X trade



Trade in green hydrogen and Power-to-X products such as green ammonia is only just emerging © william william/Unsplash

Between 12 and 25 % of the available green hydrogen will be traded internationally by 2050. Countries such as Germany and Japan have committed to importing, and countries such as Argentina and Morocco have committed to producing and exporting green hydrogen.

But what rules are already in place for global hydrogen trade?

“The main challenge is that a global standard and definition of green hydrogen is missing,” explains Frank Mischler, Director of the International Power-to-X Hub as one of the key findings of a new study on legal considerations for the global trade of green hydrogen and Power-to-X. The study provides a comprehensive overview of existing regulations and develops guidelines for countries wishing to engage in global hydrogen trade. It emerges that harmonisation of national regulations is crucial: “The emerging global trade in green hydrogen and Power-to-X products based on green hydrogen clearly shows: a regulatory patchwork does not allow for a transparent, efficient, sustainable, and inclusive trade.”





“Cover PtX Hub Trade study”

Contact person **Maren Schöttler**

**Project description**

The International PtX Hub is a centre of expertise and collaboration for innovative and sustainable green hydrogen and Power-to-X value chains. Through policy and regulatory advice, training, and cross-sectoral stakeholder dialogues, the PtX Hub advocates for hydrogen and PtX approaches that promote sustainable market development

» [Start - PtX Hub \(ptx-hub.org\)](http://ptx-hub.org)



## First results of Partnerships to Accelerate the global energy transition in Indonesia, Nigeria and Thailand

Indonesia, Nigeria, Thailand, Global



Solar System © GIZ

Since launching the cooperation between GIZ and the Net-Zero World Initiative (NZW) during COP 28, three cooperation countries were defined: Nigeria, Indonesia and Thailand. In Nigeria and Indonesia local experts were already onboarded to the GIZ project Team “Partnerships to Accelerate the global energy transition” (EM PACT).

In all three countries the working agenda is currently being defined. In the short term, NZW and GIZ will cooperate in the area of energy sector modelling. In addition, the cooperation in Indonesia is aimed at developing the mid-



COP 28: Net Zero World: Implementing Pathways to Achieve Clean, Secure Energy Systems (youtube.com)

term development plan (RPJMN) 2024-2029. In Thailand, another focus is on the development of a more comprehensive strategy for battery energy storage systems (BESS) and in Nigeria on the country's energy transition plan.

Additionally, the teams in Germany and the partner countries are scouting opportunities to cooperate with further international initiatives and institutes that share the goal of decarbonizing the energy sector.

Contact person [Steffen Behrle](#)

**Further information**

» [Net Zero World Initiative](#) | [International Activities](#) | [NREL](#)



## Bringing German Utility Expertise and Know-how to our Partners

All Countries where GIZ has energy projects



Mr. Bernd - GEPP expert exchanged with EVN Deputy Director of Business Department @ GIZ Viet Nam

In January 2024, the German Expert Placement Programme (GEPP) facilitated the first peer-to-peer exchange between Mr. Bernd Hagenbuch from Stadtwerke Pforzheim, Germany, and senior experts from the Vietnamese national Utility EVN. During the one-month engagement, Bernd and the EVN team co-created strategies to manage electricity load demand, to expand e-vehicle charging infrastructure and improving customer care services.



German Expert Placement Programme (GEPP) Poster - ESP (gizenergy.org.vn)

The GEPP's second expert from one of the big 5 German energy utilities is underway to work with the Viet Nam Energy Women Network in May 2024.

Through this new format for knowledge transfer we can give our partners direct access to high-level expertise from Germany in an unbureaucratic and highly cost-effective way.

The German experts remains employed at his/her utility while GIZ will covers travel and accommodation costs.



Although considerable legwork is still needed to facilitate match-making process, there has been great interest both at corporate and at individual level to participate GEPP.

**Contact person** Markus Bissel

### **Project description**

The German Expert Placement Programme is a new format developed under the TUEWAS network to promote the engagement of German utilities in development cooperation through exchange and transfer of knowledge and knowhow critical to accelerate the energy transition.



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## A small monster

Global



Electric infrastructure © Iqram-O-dowla Shawon / Unsplash

While it is crunch time for protecting the world's climate, one greenhouse gas that has received oddly little attention so far, is the most harmful of them all! Sulphur hexafluoride – or SF<sub>6</sub> – has a global warming potential 24,300 stronger than carbon dioxide (over a 100-year period) and remains in the atmosphere for some 1000 years!

SF<sub>6</sub> is an industrially produced gas, used mainly as an insulation gas in electricity infrastructure, particularly switchgear. Emissions are on an upward trajectory, as leaks occur during the production, maintenance and dismantling of SF<sub>6</sub>-containing equipment. They will continue to increase if unchecked, as power grids are – necessarily! – expanding, especially in developing economies.

The German Federal Ministry for Economic Affairs and Climate Action intends to launch an international multi-stakeholder initiative on SF<sub>6</sub> in the power sector, to help curb emissions swiftly by supporting countries in properly handling and ultimately phasing out SF<sub>6</sub>.

This dedicated initiative is to create awareness among policymakers around this neglected topic, support regulation and industry commitments, establish monitoring and reporting frameworks, offer scientific and technological know-how and training, propose financing solutions and incentives for



alternative technologies.

**Contact persons** [Philippe Lempp](#)

### **Project description**

The GIZ project “Preparation of an international initiative to mitigate sulphur hexafluoride emissions in the power sector” has been set up to support BMWK in this effort. We are currently reaching out to all interested projects in energy and climate for collaboration.

### **Further information**

» [Carbon Mechanism Review Vol. 11, No. 4 Winter 2023 - Will Dubai Deliver? \(carbon-mechanisms.de\)](#)



## **PUBLICATIONS**

### **IRENA: Sustainable bioenergy potential in Caribbean small island developing states**

This study assesses the potential for bioenergy production using various feedstocks such as sugarcane, oil palm, and municipal solid waste in six Caribbean small island developing states – Cuba, the Dominican Republic, Haiti, Jamaica, Trinidad and Tobago, and Guyana.

» [Sustainable bioenergy potential in Caribbean small island developing states](#)

### **IRENA: Renewables readiness assessment: Solomon Islands**

This renewables readiness assessment (RRA) identifies key actions to accelerate the deployment of renewables and ramp up energy transition efforts in the Solomon Islands.

» [Renewables readiness assessment: Solomon Islands](#)

### **IRENA: Green hydrogen for sustainable industrial development: A policy toolkit for developing countries**

This report by the United Nations Industrial Development Organization (UNIDO), IRENA and the German Institute of Development and Sustainability (IDOS) explores the benefits of green hydrogen production in developing countries.

» [Green hydrogen for sustainable industrial development: A policy toolkit for developing countries \(irena.org\)](#)

### **IRENA: Sustainable bioenergy pathways in Latin America: Promoting bioenergy investment and sustainability**

This report presents the outcomes of an IRENA workshop, held in São Paulo in March 2023, that explored potential pathways for the development of bioenergy in Latin America and issued key recommendations to facilitate the creation of a bioenergy market in the region.

» [Sustainable bioenergy pathways in Latin America: Promoting bioenergy investment and sustainability \(irena.org\)](#)

### **IEA: CO2 Emissions in 2023 A new record high, but is there light at the end of the tunnel?**

CO2 Emissions in 2023 provides a complete picture of energy-related emissions in 2023. The report finds that clean energy growth has limited the rise in global emissions, with 2023 registering an increase of 1.1%. Weather effects and continued Covid-19 reopening played a significant role in driving emissions in 2023. Advanced economies saw a record decrease in their emissions, which are now back to the level of fifty years ago. This release brings together the IEA’s latest analysis, combining the Agency’s estimates of CO2 emissions from all energy sources and industrial processes.

» [CO2 Emissions in 2023 – Analysis - IEA](#)

### IEA: Clean Energy Market Monitor – March 2024

This report aims to fill a gap by providing a timely, high-level overview of clean energy technology deployment for 2023 for a selected group of technologies. It is intended to be the first in a series, bringing together the most recent trends for a group of key clean energy technologies and assessing the implications for energy markets more broadly. It is not intended to be a comprehensive tracking exercise or to provide detailed analysis by technology.

» [Clean Energy Market Monitor – March 2024 – Analysis - IEA](#)

### IEA: Electricity 2024 - Analysis and forecast to 2026

the International Energy Agency's Electricity 2024 is essential reading. It offers a deep and comprehensive analysis of recent policies and market developments, and provides forecasts through 2026 for electricity demand, supply and CO2 emissions. The IEA's electricity sector report, which has been published regularly since 2020, provides insight into the evolving generation mix. In addition, this year's report features in-depth analysis on the drivers of recent declines in electricity demand in Europe; the data centre sector's impact on electricity consumption; and recent developments in the global nuclear power sector.

» [Electricity 2024 – Analysis - IEA](#)

### IEA: Renewables 2023 - Analysis and forecasts to 2028

Renewables 2023 is the IEA's primary analysis on the sector, based on current policies and market developments. It forecasts the deployment of renewable energy technologies in electricity, transport and heat to 2028 while also exploring key challenges to the industry and identifying barriers to faster growth.

» [Renewables 2023 – Analysis - IEA](#)



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(German only)

Job-ID: V000057750

Application Deadline: 04/25/24



## INFORMATION and LINKS

GIZ – International Fuel Prices

To subscribe, please contact [Armin Wagner](#).

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» [The Global Energy Transformation Programme - GET.Pro](#)

» [Energising Development – EnDev](#)

» [Energypedia](#)

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» [IRENA](#)

» [IEA](#)

» [SE4ALL](#)

» [Powering Agriculture \(energypedia.info\)](#)

» [German National Hydrogen Council \(NWR\)](#)



#### **In a nutshell**

The National Hydrogen Council published its statement on the import strategy in January. The German version is already online, we expect the statement to be available in English in a few days' time.

» [position papers](#)

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