



Ministry of Industry and Trade



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GIZ Energy Support Programme

Together for a better energy future



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Programme Background

Since 2009, Germany's implementing agency Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has supported the Government of Viet Nam to achieve its political targets on the promotion of renewable energy and energy efficiency. In 2013, the GIZ Energy Support Programme (ESP) was established as a priority area of cooperation between the two governments.

The ESP is a partnership between Viet Nam's Ministry of Industry and Trade (MOIT) and GIZ. The 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 to foster private sector investment and by increasing the professional and organizational capacities of key institutions and stakeholders.

A number of projects have been implemented or are ongoing:

- Renewable Energy and Energy Efficiency (4E): 2015 - 2023
- Smart Grids for Renewable Energy and Energy Efficiency (SGREEE): 2017 - 2021
- Climate Protection through Sustainable Bioenergy Markets in Viet Nam (BEM): 2019 - 2023
- Commercial and Industrial Rooftop Solar (CIRTS): 2021 - 2025
- Solar-Aquaculture Habitats as Resource-Efficient and Integrated Multilayer Production Systems (SHRIMPS): 2019 - 2023
- Clean, Affordable and Secure Energy for Southeast Asia (CASE): 2020 - 2024
- Project Development Programme (PDP): 2011 - 2023
- Support to the Up-scaling of Wind Power in Viet Nam (DKTI WIND): 2014 - 2018



Working closely with the MOIT, the ESP is supporting Viet Nam to achieve the UN's Sustainable Development Goals in Renewable Energy and Energy Efficiency.





The ESP works across all projects in the following three action areas:

- Legal and Regulatory Framework
- Capacity Development
- Technology Cooperation

The simultaneous implementation of these three action areas across projects and technologies contributes to the sustainable development of the Vietnamese energy sector.



Action Area 1

Legal and Regulatory Framework

ESP activities aim to reduce barriers for domestic and international investments in Viet Nam's market, provide a fair playing field for all actors in the value chain, promote the qualitative renewable energy development, and make renewable energy and energy efficiency more competitive. They are aimed at both policymakers and the private sector to enable a comprehensive mix of political incentive schemes for private investment, as while offering solutions to monitor and adjust support measures provided by public authorities for the energy sector sustainable development.



Action Area 2

Capacity Development

As the market is at an early stage of development, knowledge on renewable energy and energy efficiency technologies, and know-how to develop relevant projects, also need to be expanded further. Capacity development activities for partners and stakeholders through various trainings, workshops, and study tours are in place to further build knowledge and experience.



Action Area 3

Technology Cooperation

Technology cooperation activities have a two-fold objective. The first one is to foster technology transfer by bringing extensive experience in renewable energy and energy efficiency from Germany to Viet Nam. Secondly, the ESP aims to facilitate partnerships between universities and private companies from Viet Nam and Germany.



Funding Agencies and Partners

Funding Agencies

The main commissioning party of the GIZ Energy Support Programme is the German Federal Ministry for Economic Cooperation and Development (BMZ).

Other commissions come from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the German Federal Ministry for Economic Affairs and Energy (BMWi), the German Federal Ministry of Education and Research (BMBF), and the European Union (EU).

Partners

Line Agency and Political Partner:

Viet Nam's Ministry of Industry and Trade (MOIT)

Principal Implementing Agencies:

Electricity and Renewable Energy Authority (EREA)

Department of Energy Efficiency and Sustainable Development (DEESD)

Electricity Regulatory Authority of Vietnam (ERAV)

National Assembly (NA)

Vietnam Electricity (EVN)





Joining Hands for a Sustainable Energy Future in Viet Nam



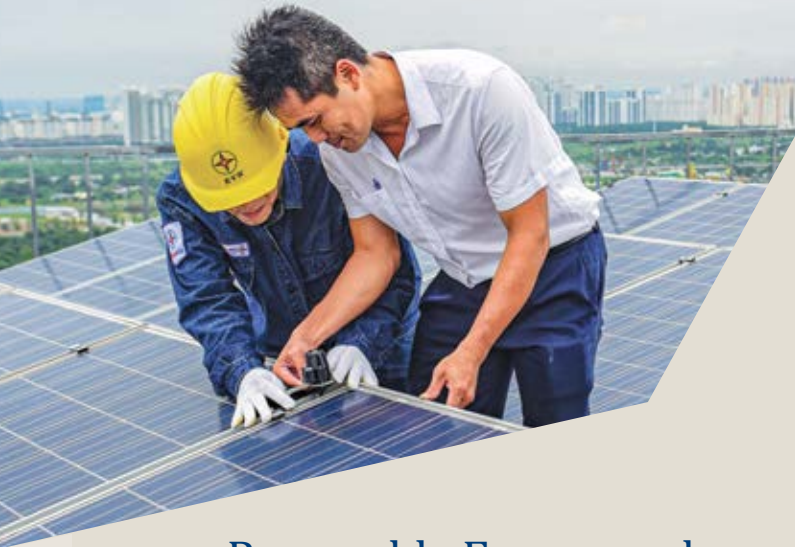
ENERGY ACCESS
Ensuring Clean and Affordable Energy for All

ENERGY DATA & STATISTICS
Smart Data: Collect it, Use it, Share it

RENEWABLE ENERGY
Unlocking Vietnam's Clean Energy Potential

ENERGY EFFICIENCY
Save Energy, Be Profitable

ENERGY SECTOR REFOR



Renewable Energy and Energy Efficiency (4E): 2015 - 2023

Commissioned by:

German Federal Ministry for Economic Cooperation and Development (BMZ)

Partners:

Political Partner:

Viet Nam's Ministry of Industry and Trade (MOIT)

Implementing Agencies:

Electricity and Renewable Energy Authority (EREA)

Department of Energy Efficiency and Sustainable Development (DEESD)

The main objective of Phase I (2015 - 2018) was to further develop the legal, regulatory and institutional preconditions as well as related capacities to channel investments towards renewable energy and energy efficiency. Phase I included a Component on Climate Finance Readiness (CF Ready) which was co-funded by USAID and the Czech Government.

The objective of Phase II and Phase III (2018 - 2023): The prerequisites for using renewable energy and increasing energy efficiency have been improved at key players from government and industry.

Exemplary activities include:



Legal and Regulatory Framework

- Development of support mechanisms for further expansion of renewable energy and energy efficiency
- Support to national solar and biomass energy assessments
- Development of a database for energy efficiency



Capacity Development

- Trainings for policymakers, project developers and investors
- On-the-job training for local consulting firms and key energy companies



Technology Cooperation

- Support to renewable energy and energy efficiency technology transfer to Viet Nam
- Study trips and match-making events between Vietnamese and German companies

3rd HIGH-LEVEL MEETING VIET NAM ENERGY PARTNERSHIP GROUP (VEPG)

Joining Hands for a Sustainable Energy Future in Viet Nam

Hanoi, 10 December 2019



EU – Viet Nam Energy Facility (EVEF): 2018 - 2021

The project “Technical Assistance for the Implementation of the EU - Viet Nam Energy Facility” is co-financed by the European Union and the Federal Republic of Germany and implemented under the framework of Phase II of 4E Project.

The project complements the EUR 100 million sector reform contract (SRC) component of the Energy Sector Policy Support Programme (ESPSP) concluded between MOIT and the EU in December 2017.

The aim of the project is to contribute to the enhancement of governance of the energy sector with a view to facilitating the shift to a more sustainable energy development path in Viet Nam. The project will also contribute to the implementation of the regulatory framework needed to achieve Viet Nam’s commitment to reduce its energy-related greenhouse gas emissions in the context of the country’s Nationally Determined Contributions (NDCs).

In addition to the 4E’s initial exemplary activities, the Project includes the following components:

For further information, please visit:

EVEF’s website at <http://energyfacility.vn/>



Component 1:

Implementation of a demand-driven technical assistance facility proposed by MOIT and non-MOIT agencies



Component 2:

Secretariat to the Viet Nam Energy Partnership Group (VEPG)
Find more at <http://vepg.vn/>



Component 3:

Monitoring of Sector Reform Contract (SRC) implementation



Component 4:

Cross-cutting activities



Smart Grids for Renewable Energy and Energy Efficiency (SGREEE)

The Smart Grids for Renewable Energy and Energy Efficiency (SGREEE) project is supporting the Government of Viet Nam in the implementation of its Smart Grid Roadmap, which aims to promote the modernization and automation of the national power transmission and distribution system.

Funded by the BMZ, the project is working closely with ERAV to support experts of the Vietnamese power sector in developing a “Smart Grid”, i.e. the digitalization and flexibilization of the power supply system, which allows the integration of an increasing share of renewable energy and supports greater energy efficiency.

Period: 07/2017 - 12/2021

Commissioned by

German Federal Ministry for Economic Cooperation and Development (BMZ) within the German Climate Technology Initiative (DKTI)

Partners:

Political Partner: Viet Nam’s Ministry of Industry and Trade (MOIT)

Implementing Agency: Electricity

Regulatory Authority of Vietnam (ERAV)





Exemplary activities include:



Legal and Regulatory Framework

- Strategic advice on future power system development and establishment of a sector-wide stakeholder dialogue
- Supporting the development of regulations with the emphasis on the grid integration of renewable energy as well as the flexibilization and digitalization of the power system with smart technologies



Capacity Development

- Establishing a Knowledge Network on smart grid technologies for Vietnamese experts in power system
Find more at <http://smart-grid.vn/>
- Trainings on Smart Grid technologies, innovative power system operation and planning with high shares of renewable energy



Technology Cooperation

- Promoting the application of state-of-the-art Smart Grid technologies
- Intensifying applied research and development, e.g. feasibility tests for smart technology system configurations in laboratories

The project is organised in three main action areas:



Legal and Regulatory Framework

- Facilitating and supporting adjustments to the regulatory framework on planning and licensing biomass energy projects, in particular at the provincial level
- Updating or assessing governmental stakeholders' needs to facilitate the development of biomass energy
- Developing strategies for provincial biomass development plans and drafting recommendations for the improvement of the approval process of biomass energy investment projects



Capacity Development

- Building capacity for private sector companies on the design and development of modern biogas energy investment projects
- Enhancing national financial institutions' capacities to finance biomass energy investment projects
- Supporting the design for a financing mechanism based on biomass energy financing needs and official development assistance (ODA)/climate funding sources
- Building capacities of public authorities



Technology Cooperation

- Supporting and enhancing technology cooperation and networks between Vietnamese and international enterprises, research institutions and universities on the use of biomass resources for electricity and heat generation





Period: 04/2019 - 03/2023

Commissioned by

German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)

Partners:

Political Partner: Viet Nam's Ministry of Industry and Trade (MOIT)

Implementing Agency: Electricity and Renewable Energy Authority (EREA)

Climate Protection through Sustainable Bioenergy Markets in Viet Nam (BEM)

The Climate Protection through Sustainable Bioenergy Markets in Viet Nam (BEM) project aims to improve the preconditions for a sustainable use of biomass for electricity and heat generation in the country. The project focuses on the improvement of planning, technical and financial capacities of respective actors in the biomass energy sector in order to realize bankable investment projects.



Commercial and Industrial Rooftop Solar (CIRTS)

The Commercial and Industrial Rooftop Solar (CIRTS) project aims to improve the preconditions for a sustainable development of the market. Its focuses are the adaptation of relevant regulatory and technical regulations, the development of key stakeholders' capacities and the improvement of the EVN's information base.

The project will support the implementation and achievement of energy-related goals set in the Viet Nam Renewable Energy Development Strategy, the revised National Power Development Plan VII and the Green Growth Strategy (GGS) as well as the respective actions plans for fulfilling these strategies and plan.

Period: 02/2021 - 01/2025

Commissioned by

German Federal Ministry for Economic Cooperation and Development (BMZ)

Partners:

Political Partner: Viet Nam's Ministry of Industry and Trade (MOIT)

Implementing Agency:

Electricity and Renewable Energy Authority (EREA)
Vietnam Electricity (EVN)





The project is organised in three main action areas:



Legal and Regulatory Framework

- Gap analysis for technical rules and standards for rooftop solar grid integration
- Recommendations for adapting international best practices to the Vietnamese context
- Facilitating a technical working group to clarify the need for further updates on rules, standards, and regulations



Capacity Development

- Improving the EVN's operational knowledge for technical and administrative management to adjust their power supply activities with an increase in commercial and industrial rooftop solar
- Strengthening relevant stakeholders' access to knowledge and services of commercial and industrial rooftop solar systems to ensure quality and safety aspects



Information Base Improvement

- Identifying potential commercial and industrial rooftop solar and developing scenarios to optimize the resources
- Introducing international experience associated with the rooftop solar business models in Viet Nam
- Providing advices to the EVN to ensure sustainable business operations
- Mobilizing innovations (e.g. hackathons, competitions)



The project consists of three phases:



Phase 1: Development of SHRIMPS Systems

- Doing research on the most promising production techniques and developing a concept for the following phases accordingly, which take into account the photovoltaics (PV) level
- Investigating the load-bearing capacity of the Vietnamese shrimp company's production halls and developing the hall structure's necessary reinforcements
- Examining and evaluating (i) the pilot plant's grid construction and connection, internal upscaling & external downscaling, (ii) the legal ground to clarify land use related issues



Phase 2: Installation of SHRIMPS Pilot Plant

- Placing the pilot plant with the installed capacity of approximate 100kW_P on the Vietnamese shrimp company's site in the Mekong Delta province of Bac Lieu
- Using the plant to demonstrate the potential of aqua-PV for shrimp breeding using the bio floc process



Phase 3: Monitoring, Evaluation and Rollout

- Monitoring the prototype to ensure that the constructed plant is reliable and can be used as a reference for industry not only in Viet Nam but also in other countries
- Transferring the aqua-PV systems to small and medium-sized enterprises in the Mekong Delta region, with the particular emphasis on the region's social and economic conditions



Period: 08/2019 – 05/2023

Commissioned by

German Federal Ministry of Education and Research (BMBF)

Partners:

Implementing Agencies

Fraunhofer Institute for Solar Energy Systems (ISE)

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Ho Chi Minh City's Nong Lam University

Johann Heinrich von Thünen Institute

SMA Sunbelt Energy GmbH

Suntrace GmbH

Viet Nam's Institute of Energy (IoE)

A major Vietnamese shrimp production company

Associated Partners

Department of Agriculture and Rural Development of Bac Lieu

Solar-Aquaculture Habitats as Resource-Efficient and Integrated Multilayer Production Systems (SHRIMPS)

The SHRIMPS project aims to reduce freshwater consumption, wastewater, CO₂ emissions and pollutant inputs as well as achieve farms' greater resilience to the impacts of climate change. It will also improve the economic situation of rural areas in the Mekong Delta region, contribute to greater energy security, promote sustainable shrimp breeding methods and create a platform for international and interdisciplinary knowledge transfer.

SHRIMPS combines aquaculture research and solar energy expertise to identify challenges and opportunities of combined aquaculture and solar systems, and to gain a deeper understanding of the synergies and interactions.

The project is organised in five main activities:



Research and Evidence

- Identifying and addressing research gaps and missing evidence for an energy transition in Southeast Asia
- Repackaging existing evidence to increase the understandings
- Researching and providing new evidence and facts to support decision making in the energy field



Dialogue (non-energy sector)

- Identifying relevant non-energy issues and public stakeholders impacted by energy transition-related problems
- Supporting public dialogue and ownership of the long-term impacts and co-benefits of energy transition and ambitious climate policy



Technical Assistance (energy sector)

- Training key energy institutions and decision-makers on energy transition-related (technical and regulatory) issues
- Quality data and information to drive dialogue on energy transition among energy stakeholders
- Supporting knowledge exchange among key energy stakeholders
- Building a sustainable network of energy think tanks in Southeast Asia



Transparency and Mapping

- Continuous stakeholder mapping to facilitate coordination
- Knowledge platform to facilitate information sharing and retention of expertise



Public Information

- Developing communication activities around the energy transition in Southeast Asia to inform the general public about energy transition challenges, issues and benefits



Period: 03/2020 - 02/2024

Commissioned by

German Federal Ministry for the Environment,
Nature Conservation and Nuclear Safety (BMU)

Partners:

In the region:

Agora Energiewende
NewClimate Institute

In Viet Nam:

National Assembly (NA)
Vietnam Initiative for Energy Transition (VIET)

In other countries:

Institute of Energy Studies and Research
(IESR) in Indonesia
Institute for Climate and Sustainable Cities
in the Philippines
Energy Research Institute and Thailand
Development Research Institute in Thailand

Clean, Affordable and Secure Energy for Southeast Asia (CASE)

The Clean, Affordable and Secure Energy for Southeast Asia (CASE) project aims to support Southeast Asian partner countries in the transition to a future energy system that provides reliable and affordable energy to the people while increasing political ambition to comply with the Paris Agreement. Through a comprehensive approach, including public, private and research organisations, CASE contributes to shifting the narrative of the energy sector in Thailand, Indonesia, the Philippines and Viet Nam towards an evidence-based energy transition.



Project Development Programme (PDP)

The Project Development Programme (PDP) is a regional programme in Southeast Asia and Sub-Saharan Africa, commissioned and funded by the German Federal Ministry for Economic Affairs and Energy (BMWi) under the German Energy Solutions Initiative that supports German companies in creating successful and context-adaptive business partnerships in foreign markets.

Regarding the Vietnamese context, PDP provides a range of services, for both the participating German and local companies. These include information sharing, establishing contacts, support for showcase projects and marketing, awareness-raising, and advisory services on the prevailing business conditions. In countries where there is a local infrastructure of German foreign trade promotion, e.g. the Delegate of German Industry and Commerce (AHK), PDP cooperates closely with and contributes to its energy and development expertise. This brings together the synergies, experience and networks of foreign trade promotion and development cooperation.

Period: 2011 - 2023

Commissioned by

German Federal Ministry for Economic Affairs and Energy (BMWi)

Partner:

Delegate of German Industry and Commerce in Vietnam (GIC/AHK)





The project includes three modules:



Module 1

Sharing information and establishing contacts

This module aims to provide German companies with information about markets as well as to raise awareness of potential partners in the target countries about the advantages of renewable energy technologies and German products and services. It also supports bilateral business partnerships through the facilitation of contacts.



Module 2

Reference projects and capacity development

This module positions German products and services in reference projects in the target countries. Activities include project identification and assessment of business opportunities, supporting the development of on-site generation projects for local industries and capacity development for local project developers via e.g. the German Training Week.

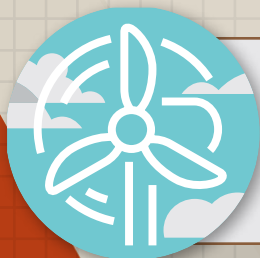


Module 3

Management of framework conditions

Investment into renewable energy need attractive legal framework conditions. Part of a targeted PDP policy advice are the preparation of analyses and policy papers for current topics, a targeted advice concerning ongoing decision processes, as well as seminars for decision-makers and their employees, participation in delegation visits as well as bilateral meetings of investors and decision-makers.





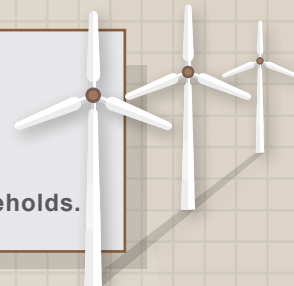
Building incentive mechanisms for renewable energy development, in particular, the **feed-in tariffs (FIT)** for wind and solar power, bioenergy and waste-to-energy.



Savings potentials from **246 Key Energy Users** identified; if realized, could supply annual electricity demand of **210,000** households.



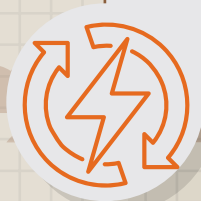
Private sector investments facilitated in wind power plants, which had the total installed capacity of 377 MW by December 2019. The plants have produced **clean electricity for 264,000** households.



3,860

participants from the public and private sector benefited from **ESP's trainings** during the period

2016 – 2019.



40



Policy Recommendations were given by **VEPG Technical Working Groups** for discussion and implementation.

Viet Nam's first public platform on Smart Grid was set up: <http://smart-grid.vn/>. The **Smart Grid Viet Nam Knowledge Hub** includes a professional network on Facebook: <https://www.facebook.com/groups/smartgridvn/> for members to discuss and share their experience about **Smart Grids solutions**, its applications and trends in Viet Nam and worldwide.



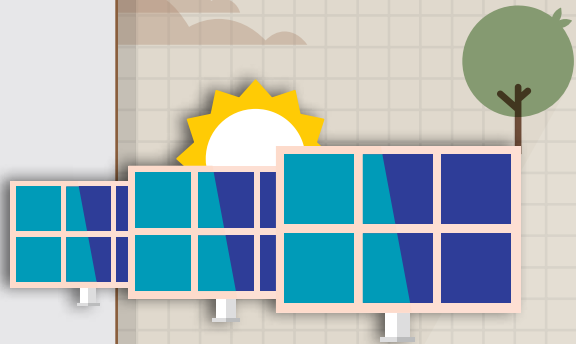
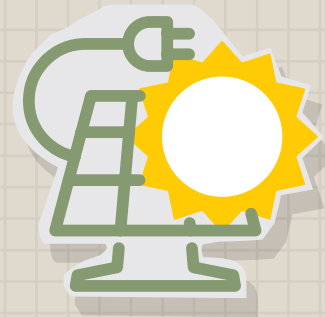
690 000

690,000 tons of CO₂ equivalent were avoided attributable to ESP's activities (The figure is equivalent to 132,900 passenger vehicles driven for one year)

Successful cooperation between **Vietnamese and German businesses** led to the installation of many solar photovoltaic projects, namely a solar power plant of

- **330 MW_p** of BIM Group in Ninh Thuan province
- **850 kW_p** system at Cat Tuong factory in Long An province
- **308 kW_p** system at Emergent Cold factory in Bac Ninh province
- **150 kW_p** system at Esquel factory in Binh Duong province
- **22 kW_p** system at Viet Uc farm in An Giang province

Many other supported projects will become online in the coming time.





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