



Ministry of Industry and Trade



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Smart Grids for Renewable Energy and Energy Efficiency (SGREEE)

GIZ in Viet Nam | MOIT/ERAV

Tuesday, November 05, 2019

Smart Grid Project at a Glance

What we are doing?

Legal and Regulatory Framework Advisory



Strategic advice on future power development by supporting the development of regulations for SG technologies and RE grid integration and the initiation of a stakeholder

Capacity Development



Establishing a Knowledge Network on SG technologies to provide trainings on Smart Grid technologies and innovative power system operation and planning.

Technology Cooperation



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



State-of-the-art
Smart Grid
technologies



Power system
operation with
increasing shares of
variable RE



Grid Integration of
variable Renewable
Energies



Scenario-based
planning of future
grid requirements



Flexibility of the
power system and
Demand Side
Management

Smart Grid Project at a Glance

Exemplary activities

- Supported ERAV to analyze and review the gap in existing legal frameworks to ease vRE integration
- Supported ERAV to revise transmission and distribution grid codes for renewable energy sources
- Promoted the implementation of Demand Response
- Assessed the past and current development of smart grid projects in Vietnam
- Assessed international state of the art technologies with respect to smart grids and promoted for their application in Vietnam power sector
- Presented global smart grid technologies in Smart Grid Steering Committee

SGREEE Project At Glance

Interest in exchanging on Smart Grids in Vietnam?

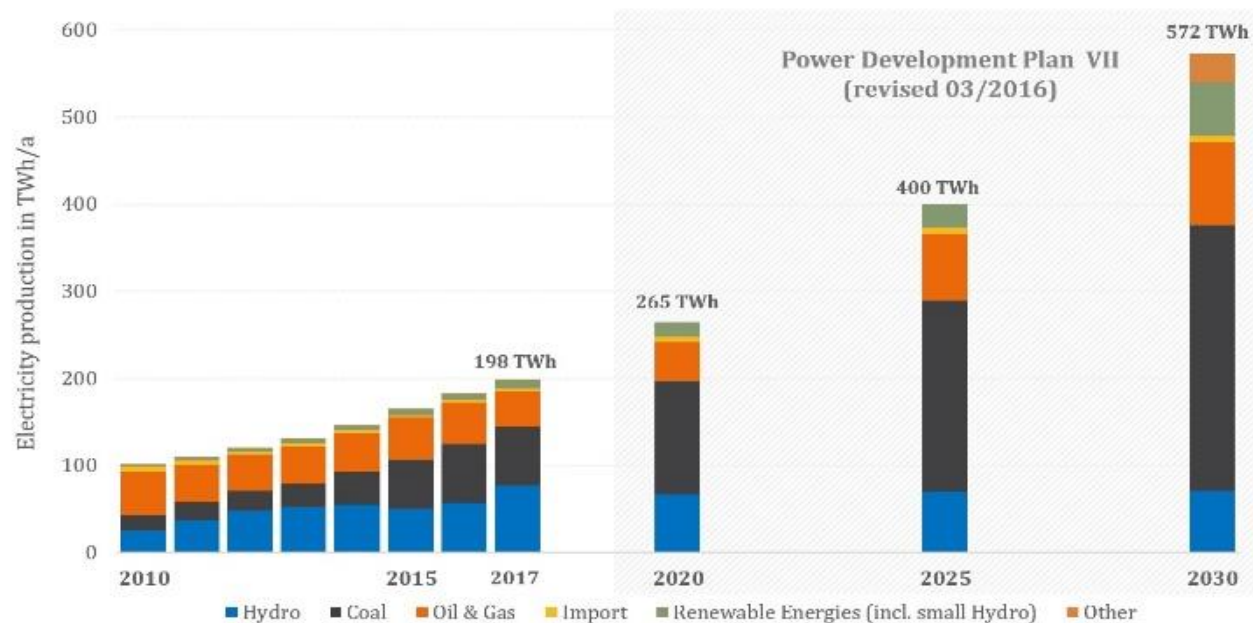
Expert group on Facebook



Smart Grid Week Vietnam: 2-5 December in Hanoi

Energy Situation in Vietnam

(Planned) Annual electricity production in Vietnam

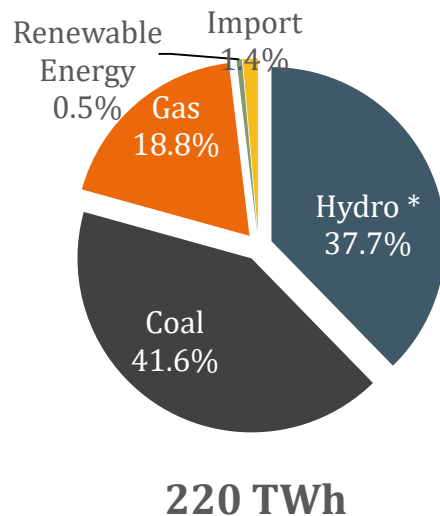


Source: EVN NLDC 2018

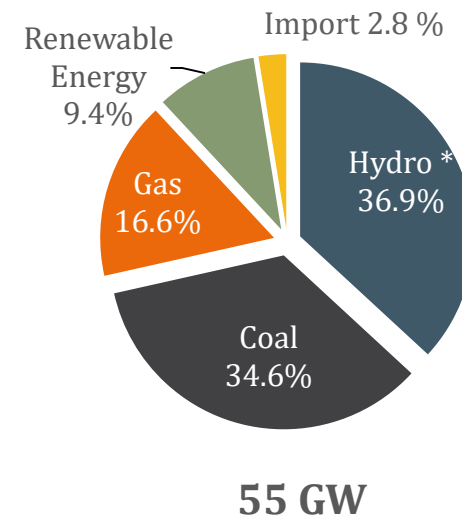
Energy Situation in Vietnam

(Actual) Annual electricity production in Vietnam

Annual electricity production 2018



Installed Generation Capacity (Mid 2019)



* Including small hydro power

Source: EVN NLDC 2019

Development of Smart Grids in Vietnam

An important solution to deal with such a fast growing of vRE energy sources?

Smart Grid Road Map (Decision No.1670/QD-TTg dated 8 th Nov 2012)		
Phase 1 (2012-2016)	Phase 2 (2017-2022)	Phase 3 (after 2022)
Enhancement of system operation efficiency and ICT in the Transmission Power Grid and 110kV Substations	Enhancement of system operation efficiency and ICT in the Distribution Power Grid	
Pilot projects implementation	Deployment of Smart Grid applications	
Revision and development of legal framework, technical procedures and standards		
Public awareness of Smart Grid development		
	Competitive wholesale market and pilot competitive retail market	Operation of the competitive electricity retail market

Development of Smart Grids in Vietnam

Update about SG development in Vietnam?

- All 500 kV transformers as well as important 220 kV transformers are equipped with **Dissolved Gas-in-oil Analysis (DGA)**.
- **Advanced Metering Infrastructure (AMI)** and Smart Meters have only been very limited deployment with AMI being installed in a few hundred households at some of the power corporations.
- Most power corporations are successfully deploying **Automatic Meter Reading (AMR)** to most of their customers. Most of them have the target of covering 100% of customers with AMR within the next one to two years.

Development of Smart Grids in Vietnam

Update about SG development in Vietnam

- ✦ EVNHCMC has conducted a pilot on **Demand Response (DR)**, where a few commercial and industrial customers participated through a Curtailable Load Program (CLP) and a Voluntary Emergency Demand Response Program (VEDRP), including the pilot operation of a demand response management system (DRMS) software.
- ✦ The recent decision 249/2018/QĐ-TTg at 8/3/2018 regulates the national **Demand Side Management (DSM)** program for the 2018-2020 period. So far, only EVNHanoi reported that some customers are participating in a pilot DSM project
- ✦ **Energy storage** has not yet been deployed on a wider scale.

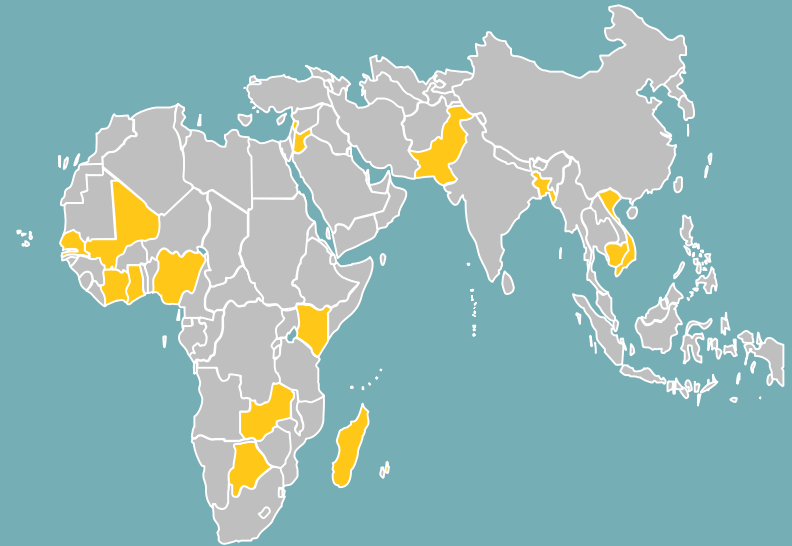
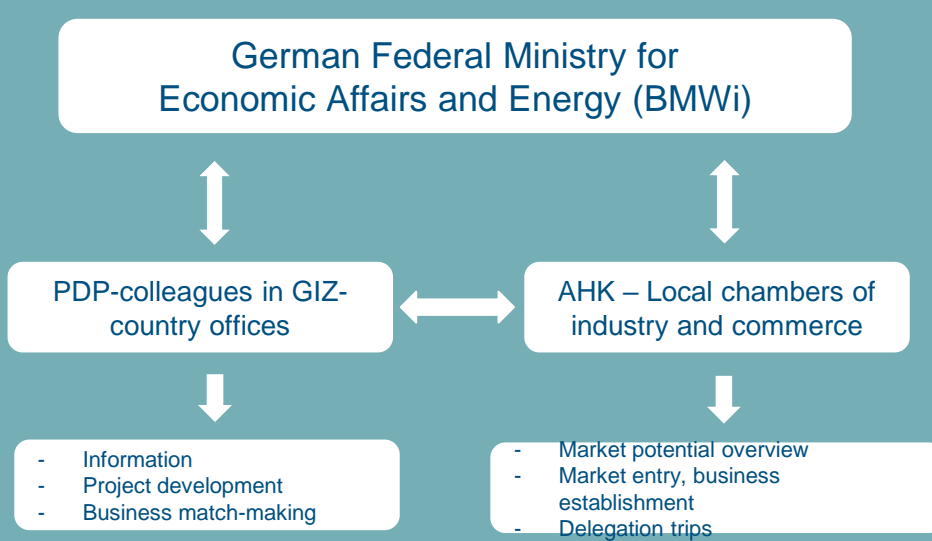
Development of Smart Grids in Vietnam

Update about SG development in Vietnam

- Recent updates in the **SCADA/EMS** system have extended monitoring and automatic control to most of the transmission grid as well as AGC connection capability to all power plants above 30 MW (152 in total including 85 renewable power plants). Furthermore, protection control systems have been updated for the transmission grid.
- Microgrids** are available only on some islands. The island Phu Quy has installed 6 MW of wind power alongside 10 MW of diesel capacity, with another 1 MW of solar power expected in 2019.
- Electric Vehicles (EVs)** and EV charging stations are not widely available. Only in some tourist locations some electric cars are available and EVNCPC has further developed one fast-charging EV charging station.

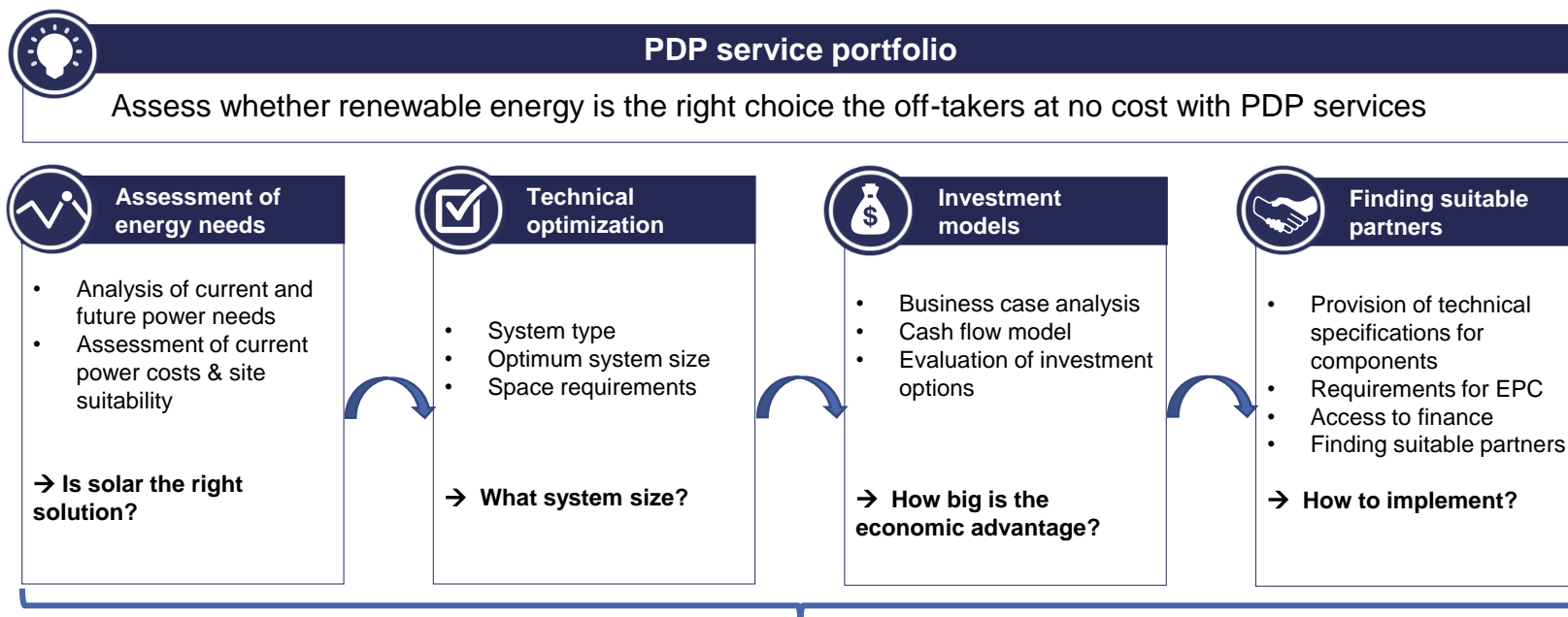
Project Development Programme (PDP)

German Energy Solutions Initiative



Current countries in focus (16)

We support C&I customers all steps of rooftop solar project development



Finding the best system for C&I business and ensuring successful project implementation

Our advise has led to many happy renewable energy users worldwide



Copperbelt Energy Corporation,
Zambia – 1 MWp



Viet Uc Seafood, Vietnam
– 22 kWp



Swissport Kenya Limited,
Kenya – 110 kWp



Emergent cold, Vietnam
– 308 kWp



Star Aire, Thailand – 1 MWp



Travessia Lodge,
Mozambique – 10 kWp

We support German solar suppliers with market entry

- Reduction of project development costs
- Scalable reference projects
- Free and impartially assessment of project opportunities
- Networking in public and private sector
- Simplified access to project financing and risk insurance
- Increased market visibility

Successful
market entry

Contact Project Development Programme for free support!

Name	Email
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Thank you for your attention

Tobias Cossen, Project Director

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