

# VIETNAM BUSINESS REVIEW

## ENERGY INDUSTRY

2020.09.24

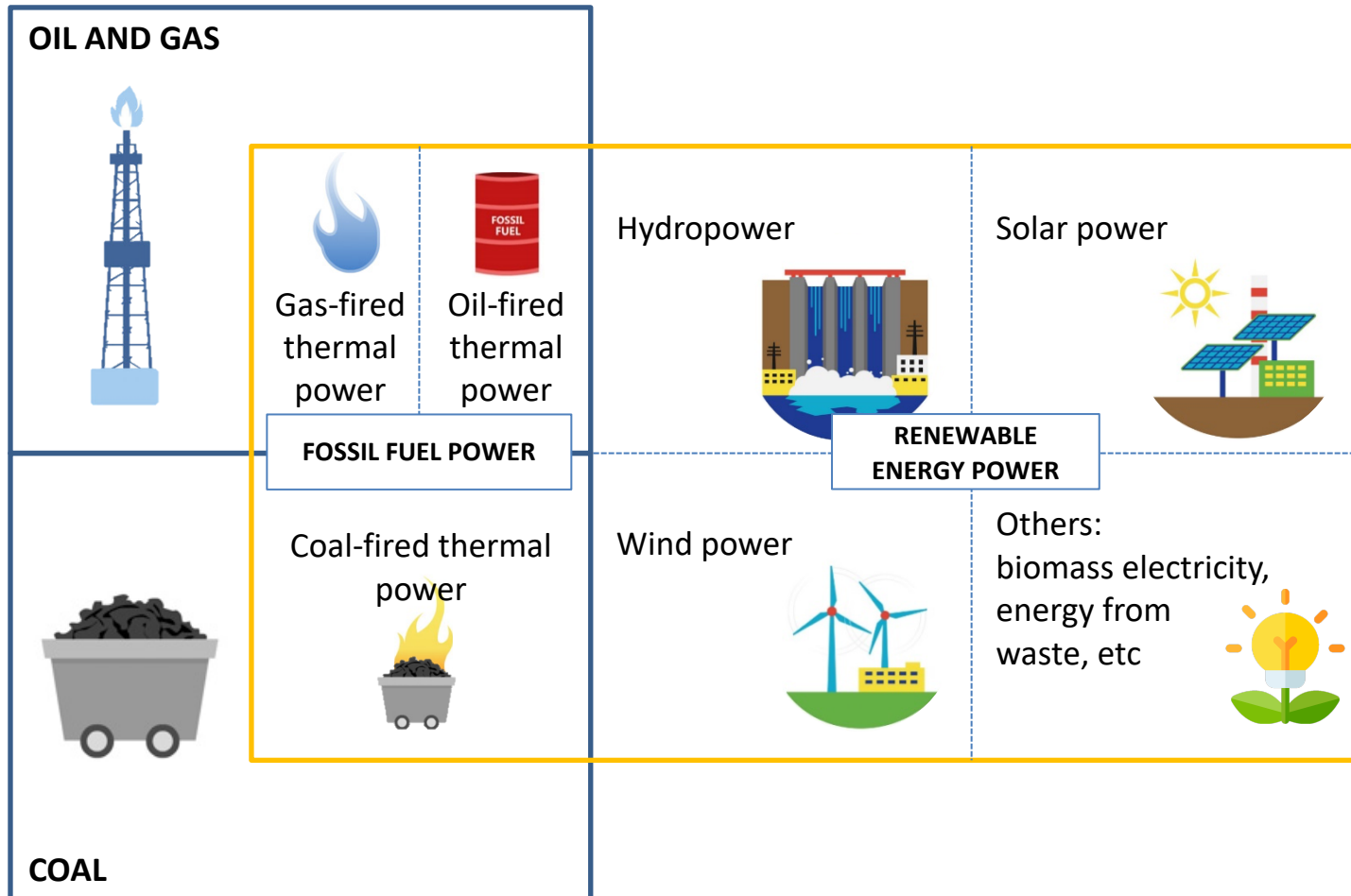
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OUTLOOK OF ENERGY SECTORS

FOSSIL FUEL ELECTRICITY

RENEWABLE ELECTRICITY

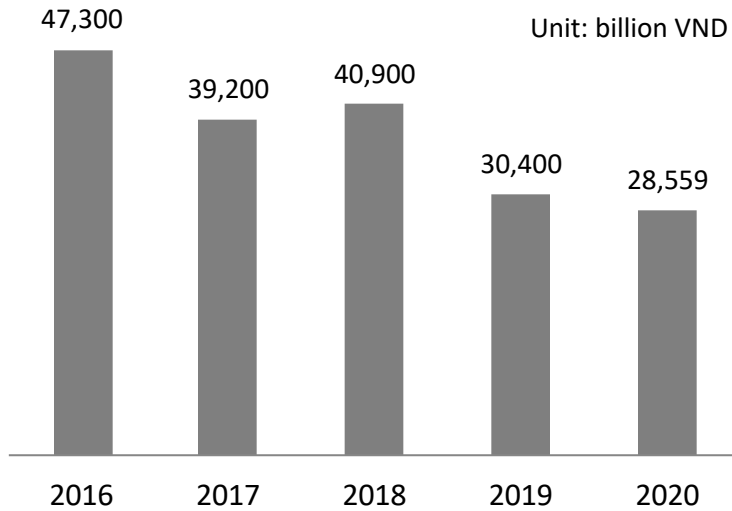
FDI PROJECTS IN ELECTRICITY SECTOR



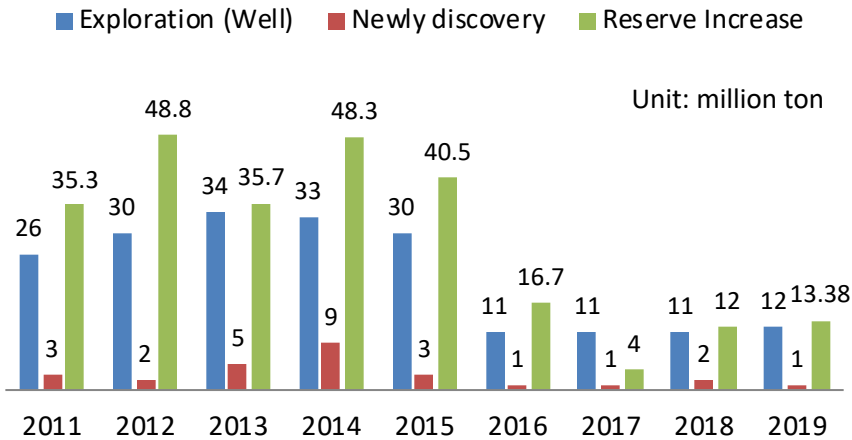
**Fossil fuel power** is electricity produced from fossil fuel such as coal, oil, natural gas.

**Renewable electricity** is electricity produced from naturally replenished energies such as sunlight, wind, rain, tides, waves, and geothermal heat.

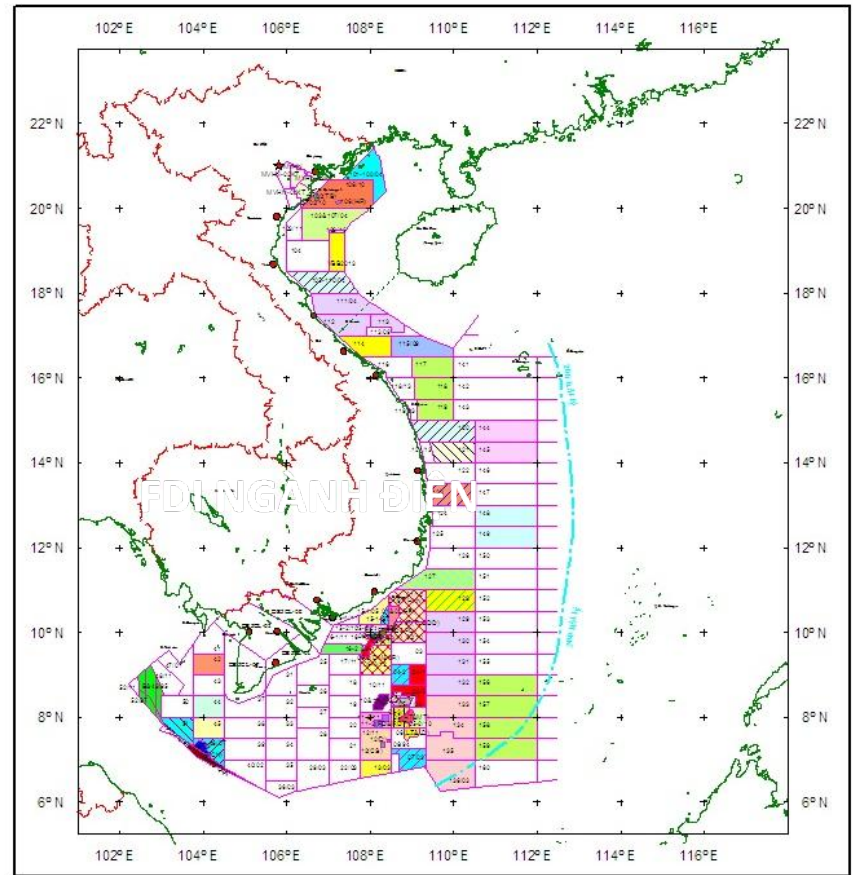
**PVN'S INVESTMENT  
(2016 – 2020)**



**Oil and gas exploring activities in Vietnam  
(2011 – 2019)**

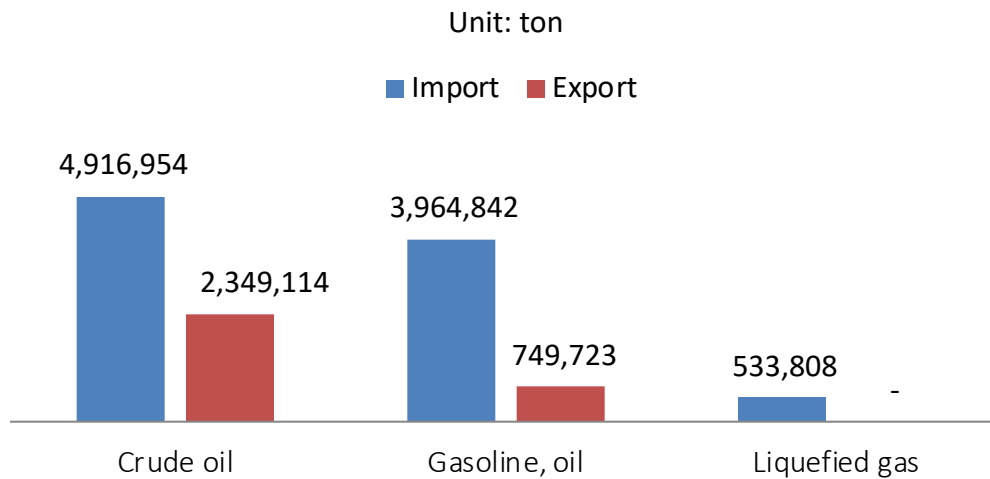


**VIETNAM MAP OF OIL AND GAS SOURCES**

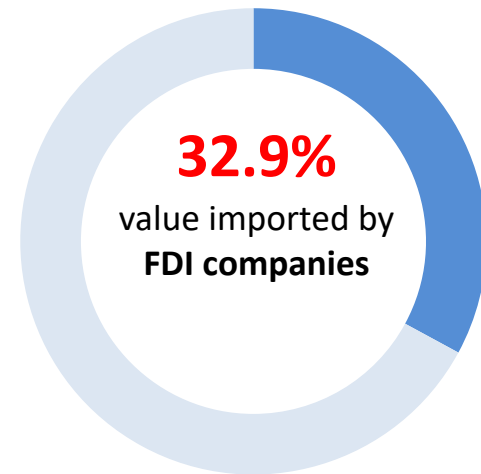


**Oil fields mainly in the coastal areas  
Exploitation is becoming more difficult**

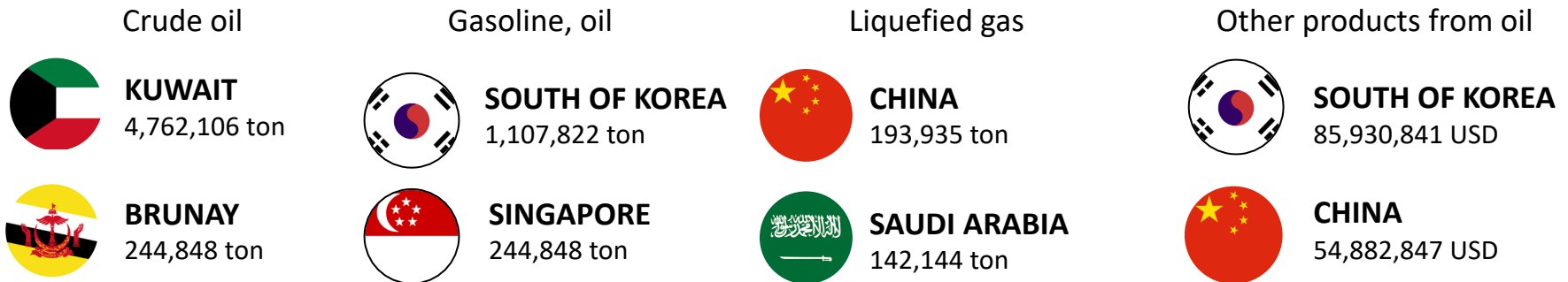
**IMPORT AND EXPORT OF CRUDE OIL AND OIL PRODUCTS**  
(as of 6/2020)



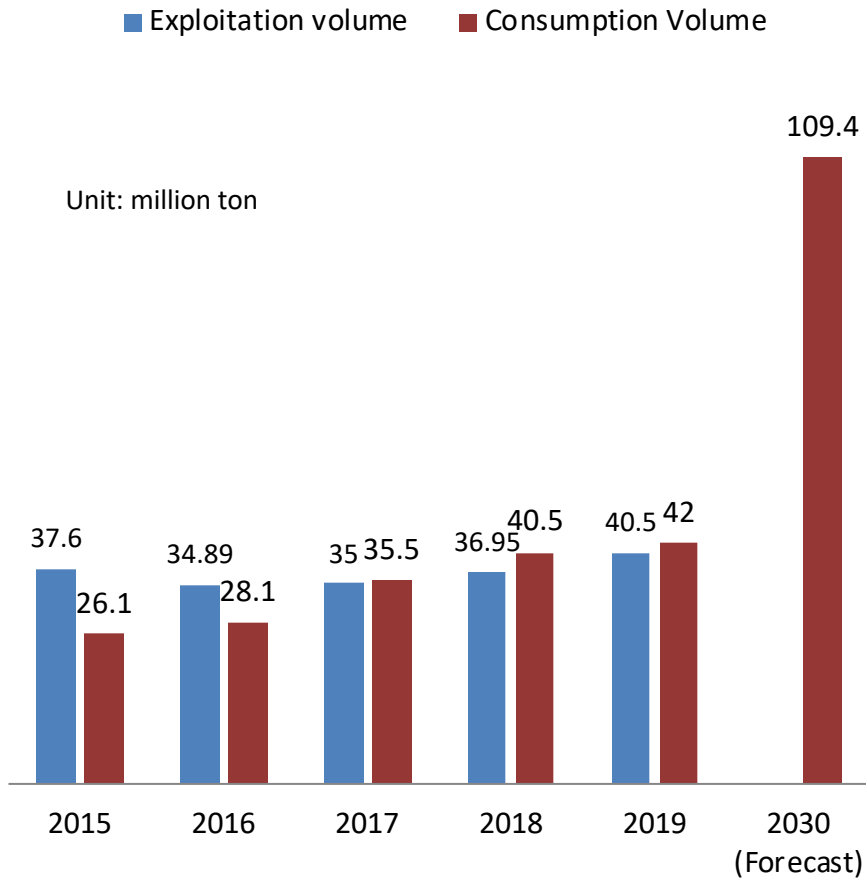
Up to 6/2020,  
Vietnam has imported approximately  
**410 million USD** of other products from oil



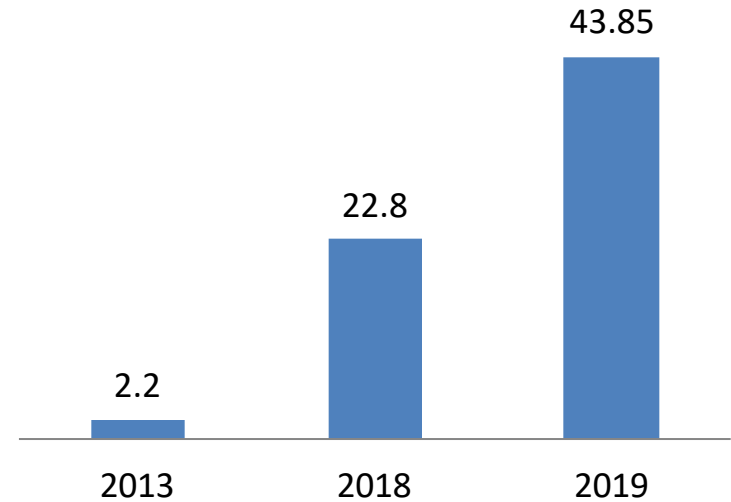
**IMPORT (BY COUNTRY)**



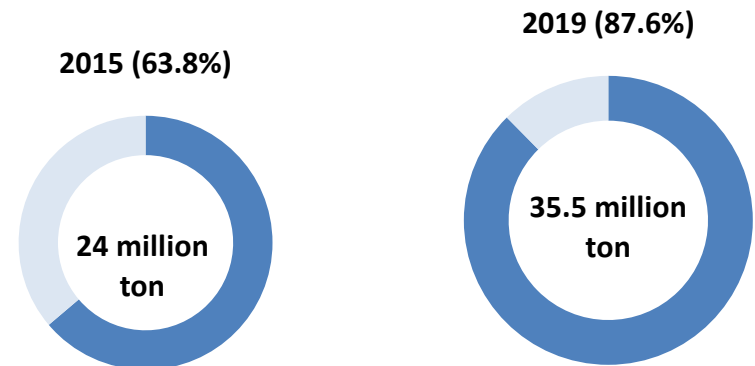
**COAL EXPLOITATION AND CONSUMPTION VOLUME  
(2015 – 2019)**



**COAL IMPORT  
(million ton)**

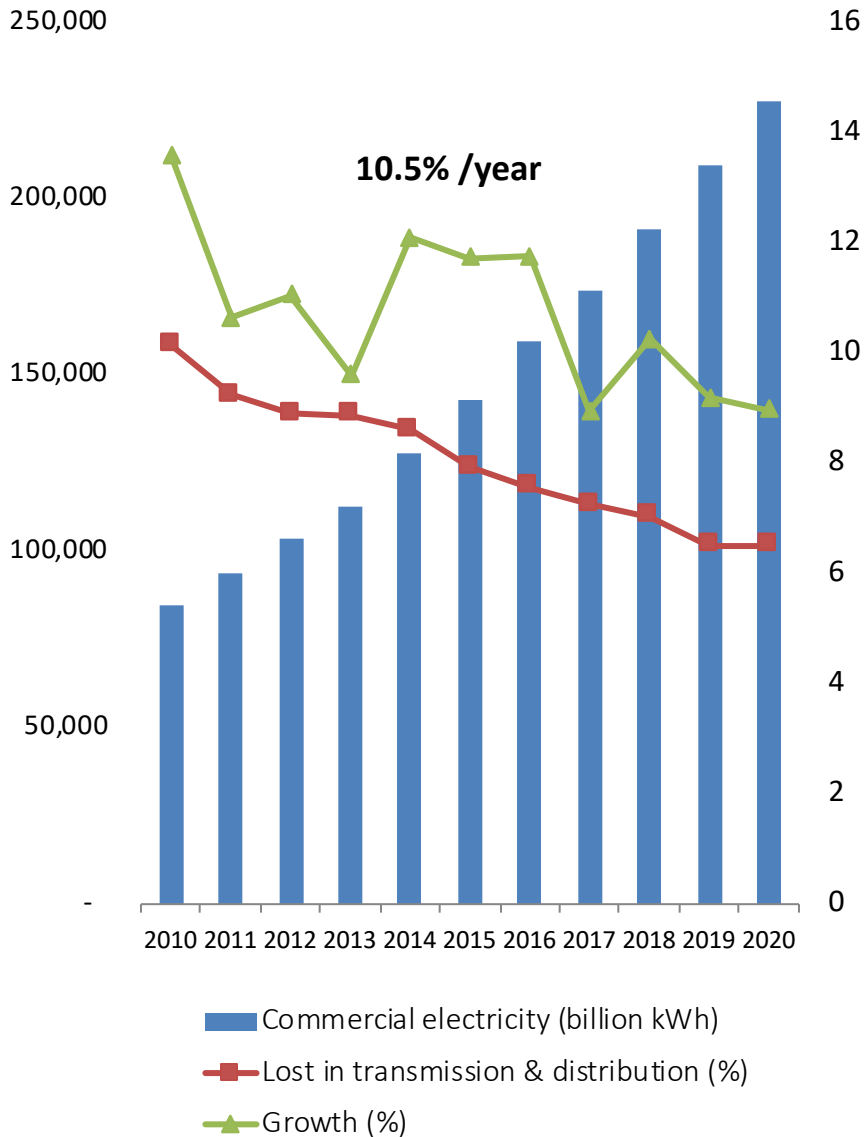


**RATIO OF COAL SUPPLYING FOR THERMAL POWER  
(From domestic exploitation)**

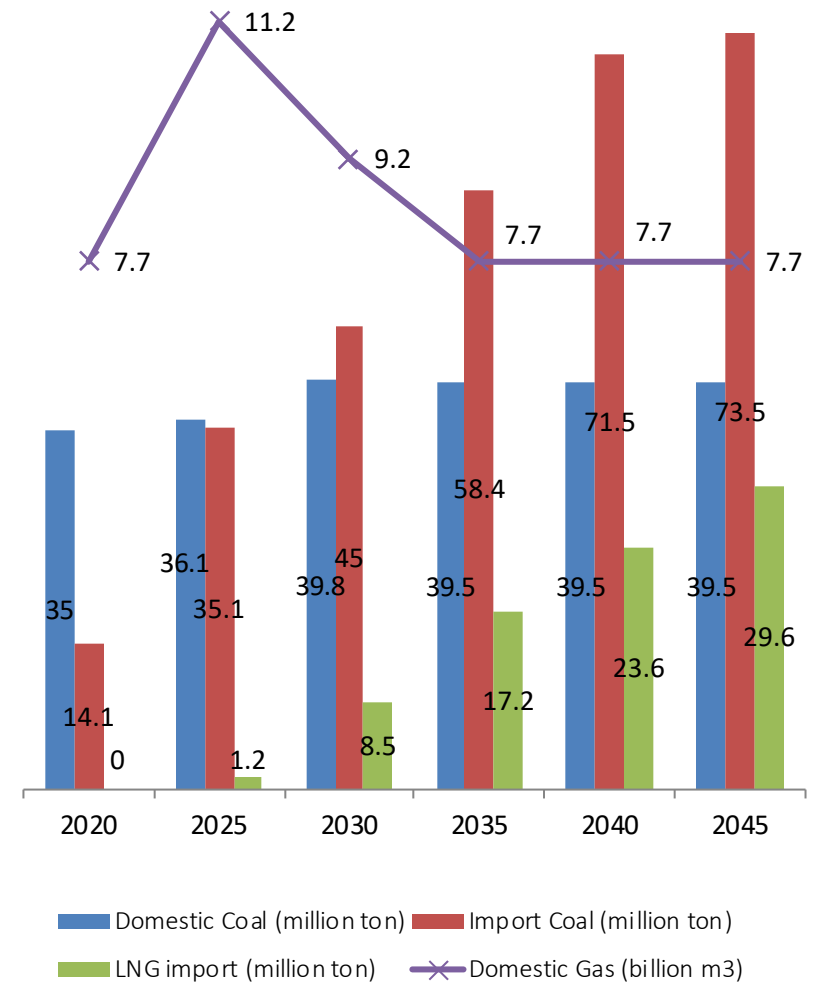


Source: VINACOMIN, General Department of Vietnam Customs

**OVERVIEW OF ELECTRICITY CONSUMPTION**



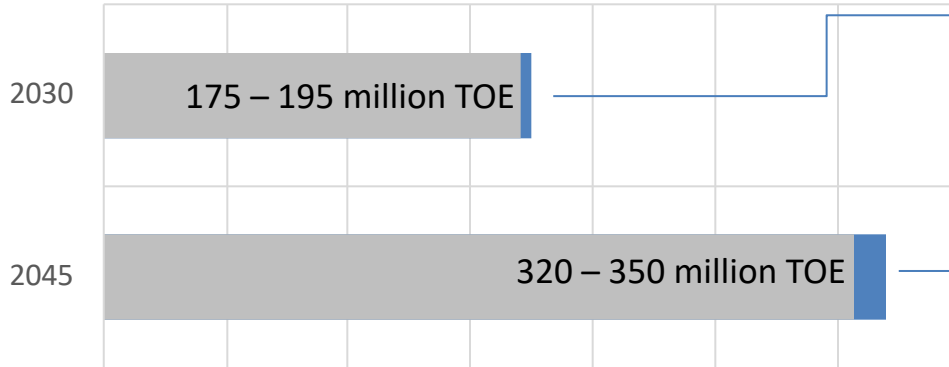
**SCENARIO OF DEMAND OF FUELS FOR ELECTRICITY GENERATION**



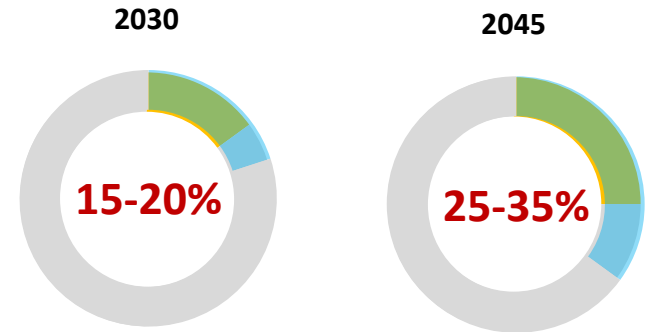
**Resolution no.55-NQ/TW**

- Issued by: the Poliburo
- Effective date: 11/02/2020
- Brief: strategic orientations for energy development through 2030, vision to 2045.
- Status: effective

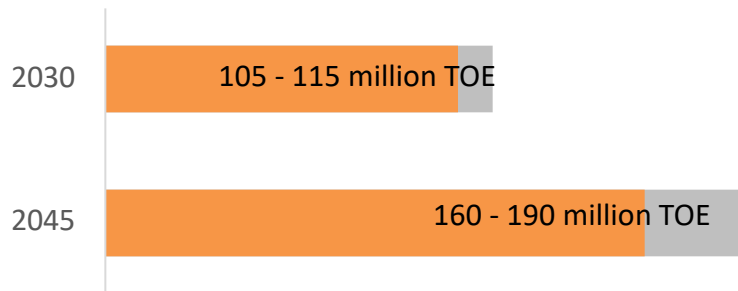
**SUPPLY OF PRIMARY ENERGY**



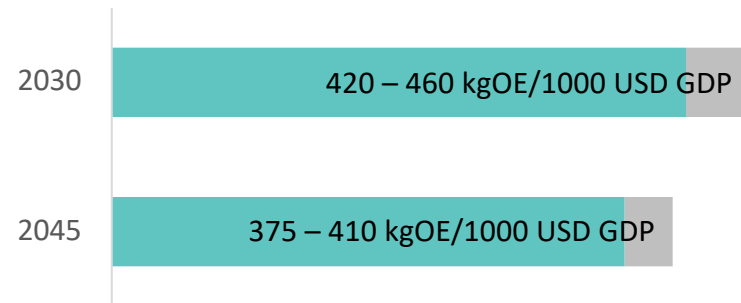
**RATIO OF RENEWABLE ENERGY SOURCES**



**CONSUMPTION OF PRIMARY ENERGY**



**PRIMARY ENERGY INTENSITY**

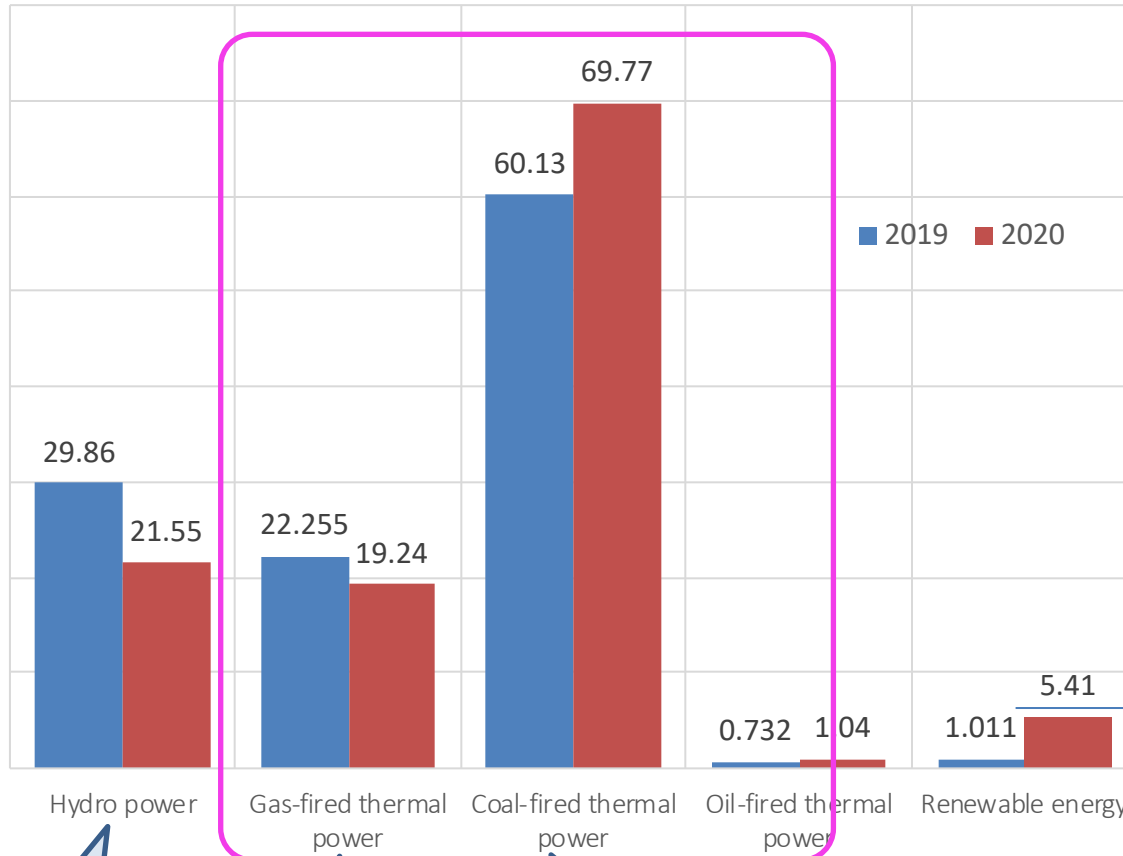


**TOE:** Tonne of Oil Equivalent

**Energy intensity:** is a measure of the energy inefficiency of an economy. It is calculated as units of energy per unit of GDP.

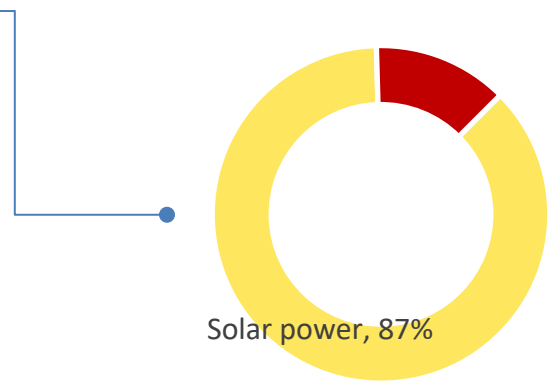
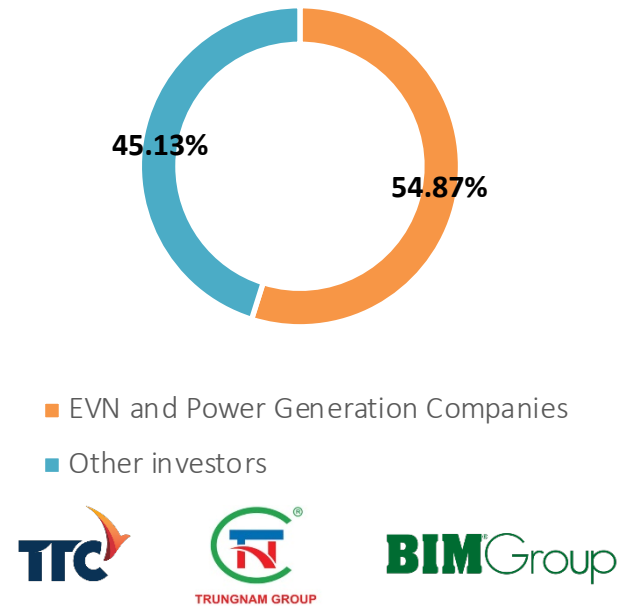


**TOTAL ELECTRICITY GENERATION IN THE FIRST 6 MONTHS OF 2020**  
Unit: billion kWh



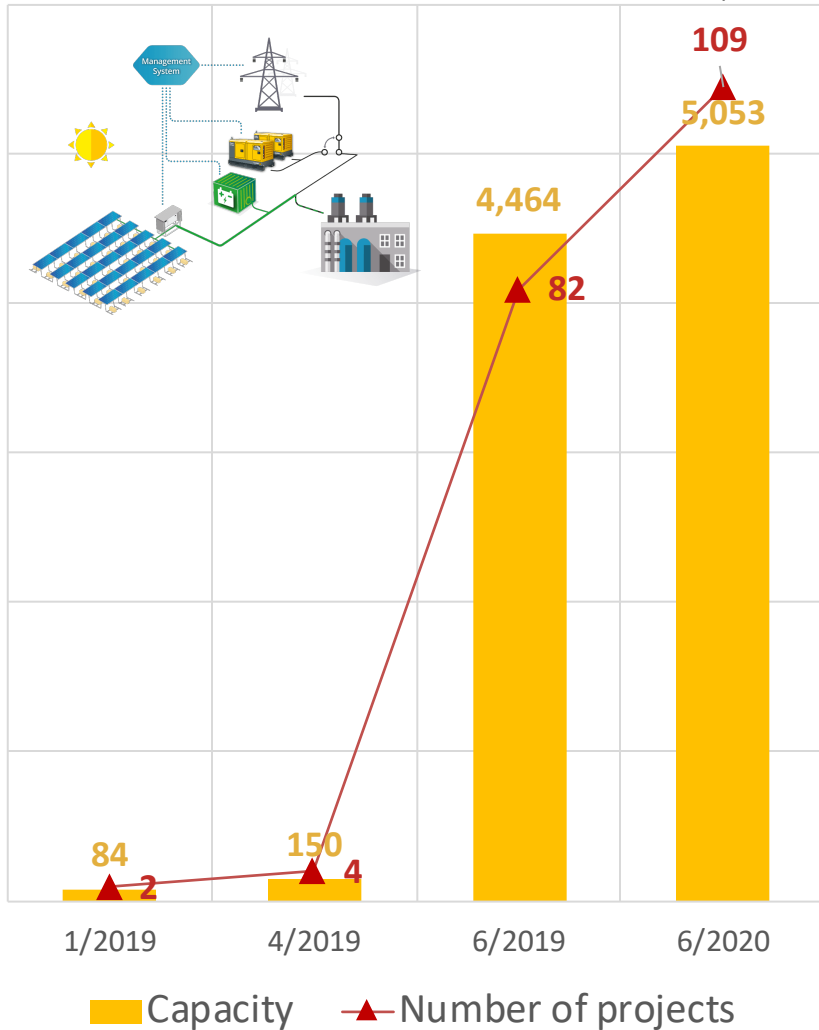
- 385** projects (18,564 MW)
- 11** projects (7,680 MW)
- 28** projects (18,523 MW)
- 3** projects (3,600 MW)

**CONTRIBUTION RATIO OF POWER GENERATION**



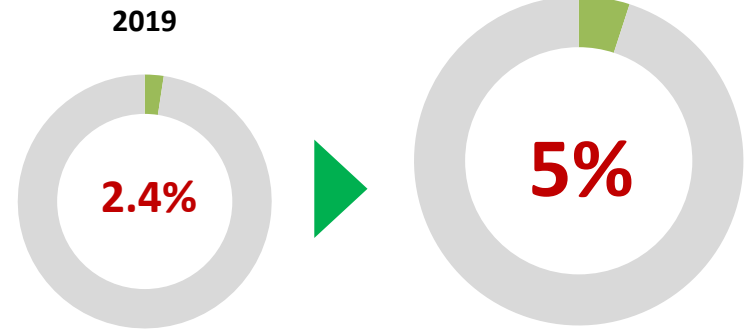
**SOLAR POWER CONNECTED TO THE NATIONAL NETWORK**

(Unit: MW)



**Ratio of wind and solar power**

2020 (forecast)

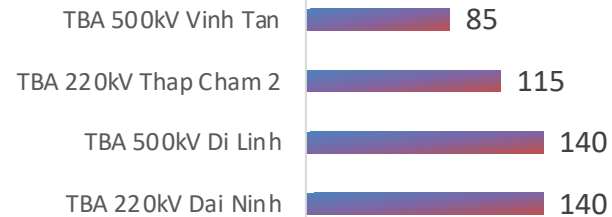


**OVERLOAD SUBSTATIONS AND LINES**

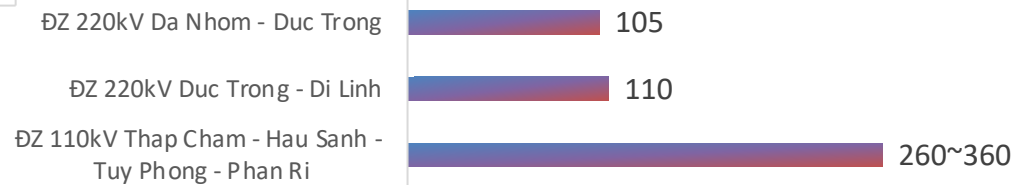
July 2019

Unit: % (of capacity)

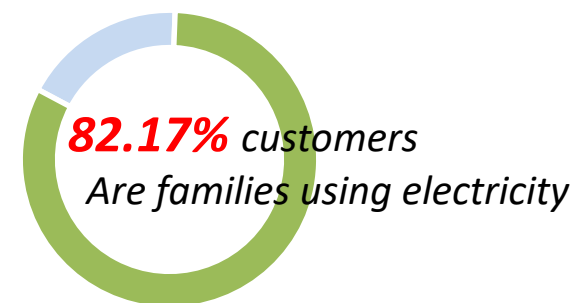
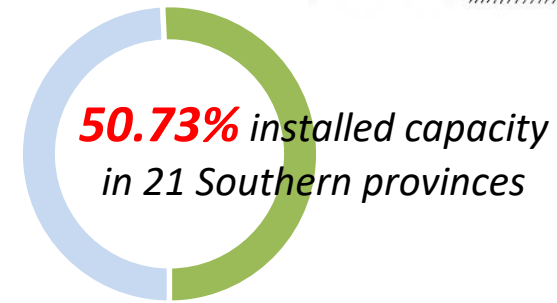
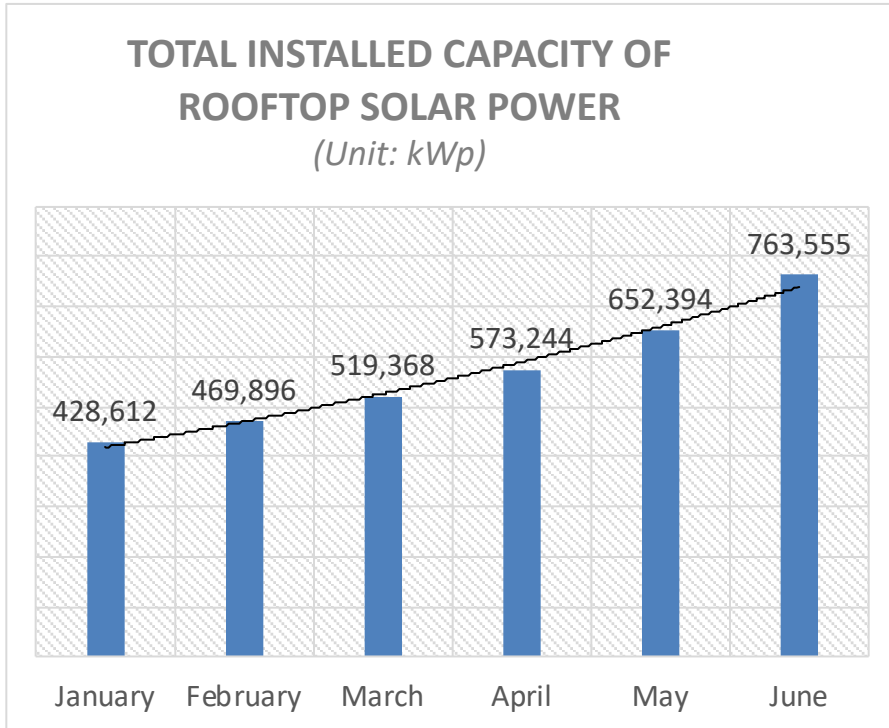
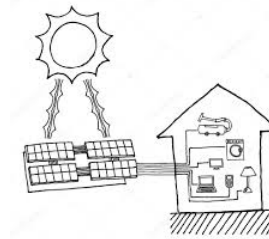
**SUBSTATIONS**



**Lines**



**ROOFTOP SOLAR POWER IN THE FIREST 6 MONTHS OF 2020**



Total installed capacity **↑44%**



Total electricity sold to EVN  
**87 million kWh ~ 195 billion VND**

Equivalent to one 87 ha solar power project



**2012**

**2018**  
Planning on wind power development in 2011-2020

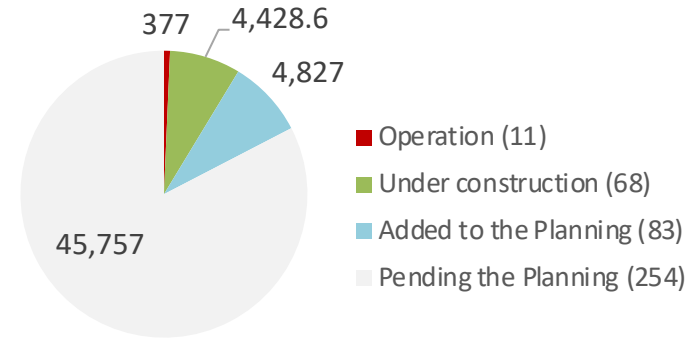
**3/2020**  
Dispatch 2491/BCT-ĐL  
On request and proposal for extending the Feed-in tariffs mechanism for wind power

**Decision 39/2018/QĐ-TTg**  
Mechanisms to support the development of wind power projects in Vietnam  
**9/2018**

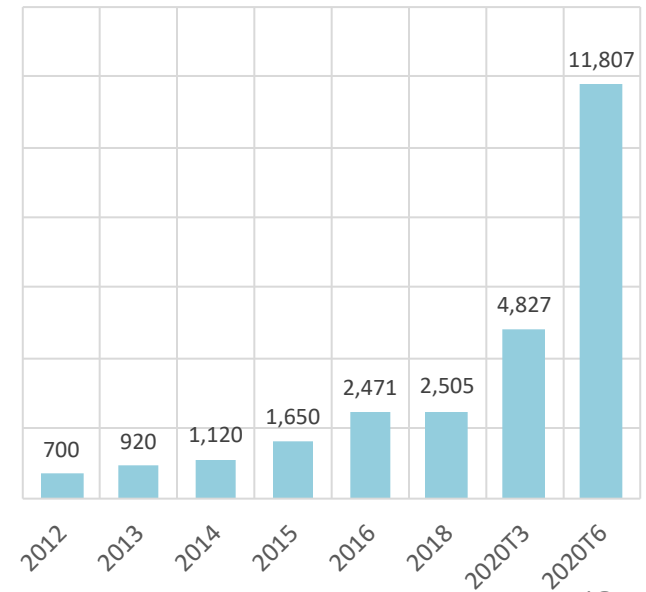
**Dispatch 795/TTg-CN**  
Add 91 projects (6979.7MW) into the plan  
**6/2020**

**SCALE OF WIND POWER PROJECTS UP TO 3/2020**

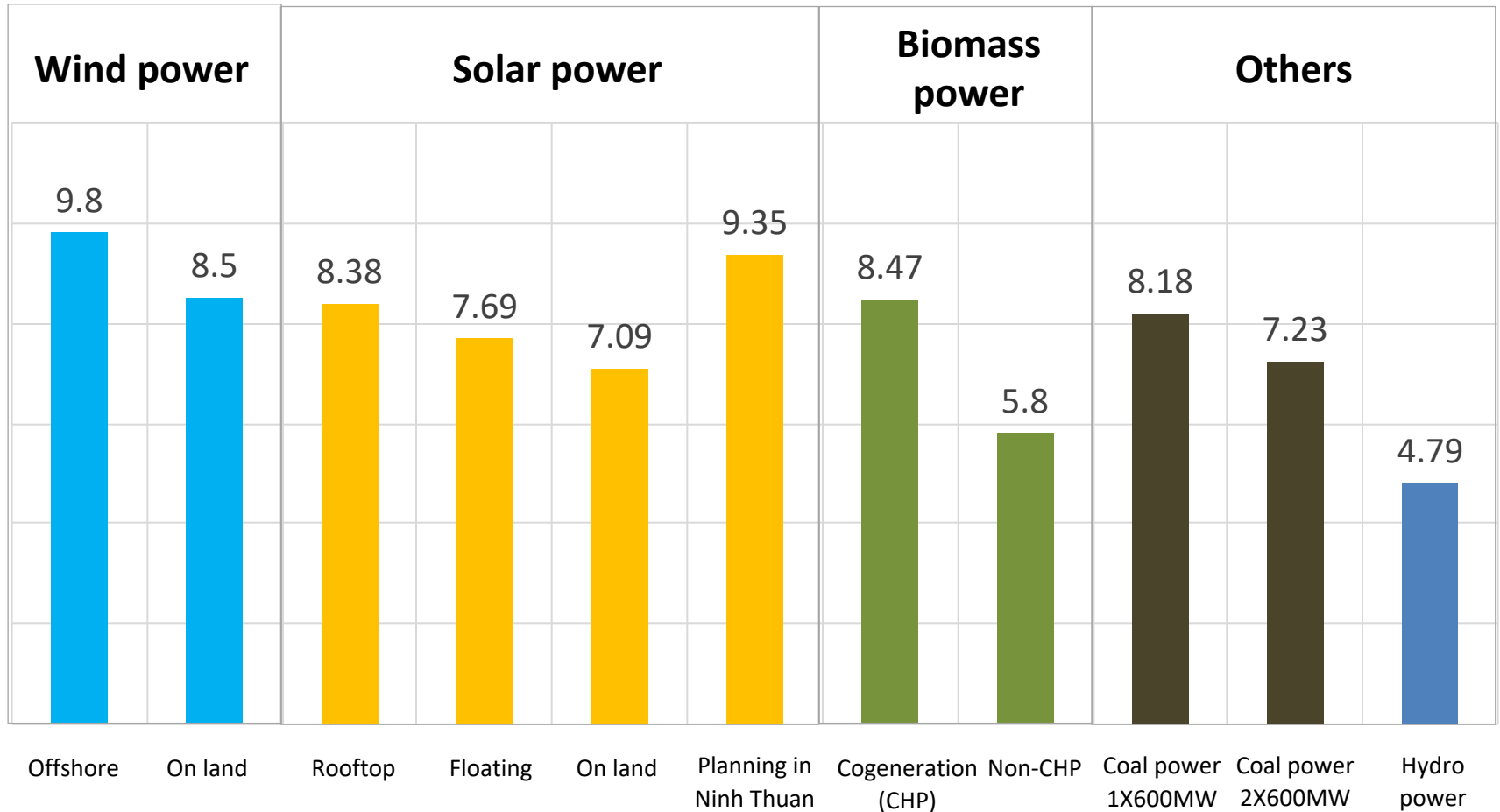
(Unit: MW)



**THE PLANNING OF WIND POWER**  
(Unit: MW)



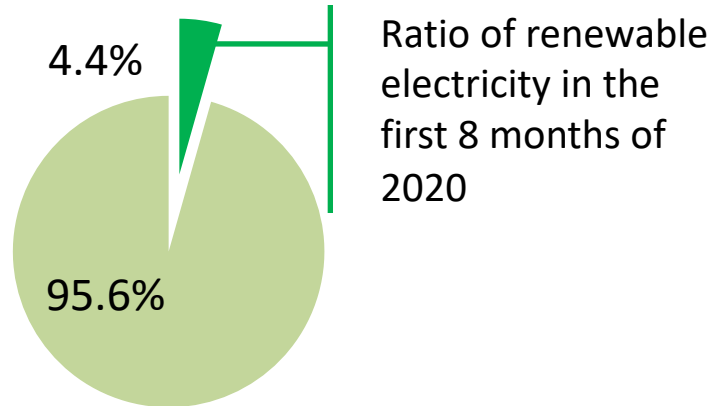
**CURRENT FIT PRICE FOR ELECTRICITY PROJECTS**  
(Unit: cent/kWh)



Source:

- ✓ Decision 13/2020/QĐ-TTg about price of solar power
- ✓ Decision 08/2020/QĐ-TTg about price of biomass power
- ✓ Decision 39/2018/QĐ-TTg about price of wind power

## SOLAR POWER IN THE FIRST 8 MONTHS OF 2020



### ROOFTOP SOLAR POWER



Total installed capacity

**1,311 MWp**

Capacity connected to the national network

**632,471 MWh**

Number of projects

**50,854**

**87.8% (6.38 billion kWh)**



Solar power



Wind power



Biomass power

**≈ 7.27 billion kWh**

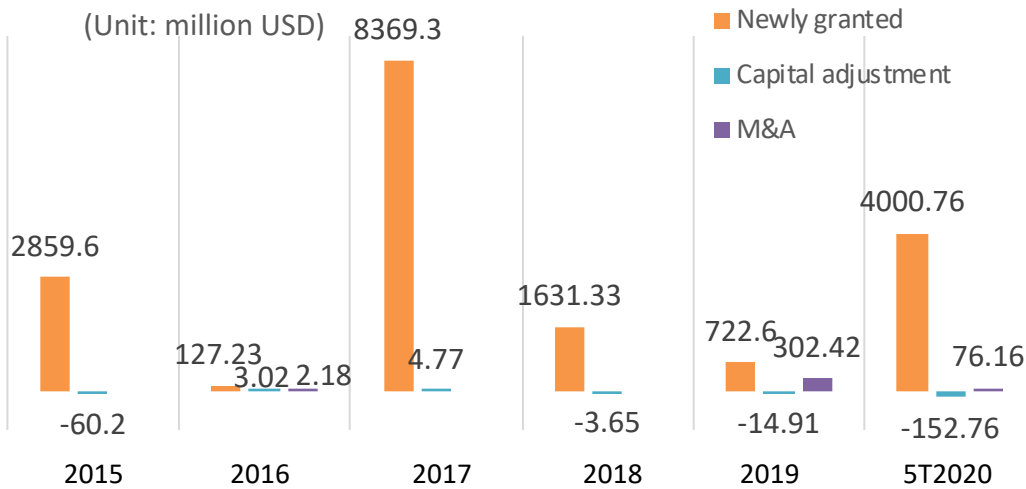
By 21 Sept 2020

<https://solar.evn.com.vn/#/>

# FDI IN ELECTRICITY SECTOR

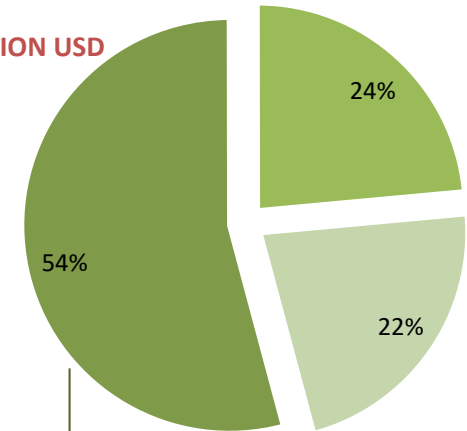
**FDI in manufacturing, distribution of electricity, gas, water, air conditioner**

(Unit: million USD)



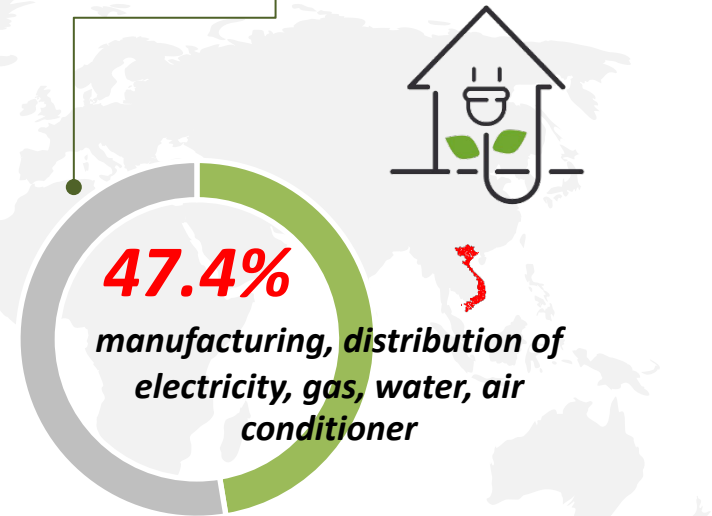
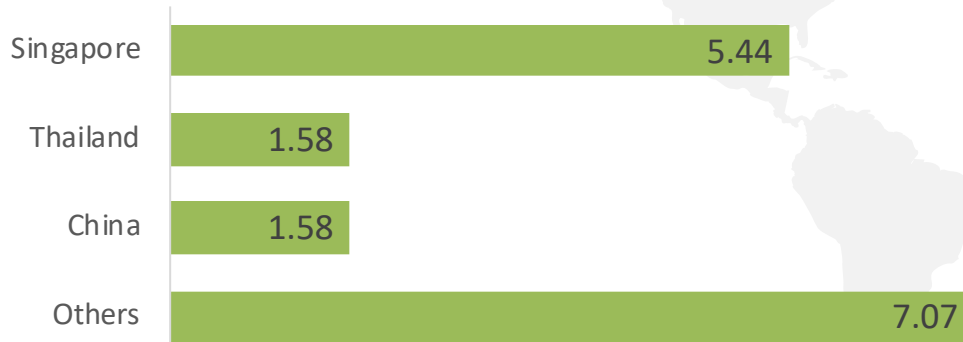
**FDI in the first 6 months of 2020**

**15.7 BILLION USD**



**FDI BY COUNTRY**

(billion USD)







**DELTA OFFSHORE ENERGY PTE. LTD**

DOE (Singapore)

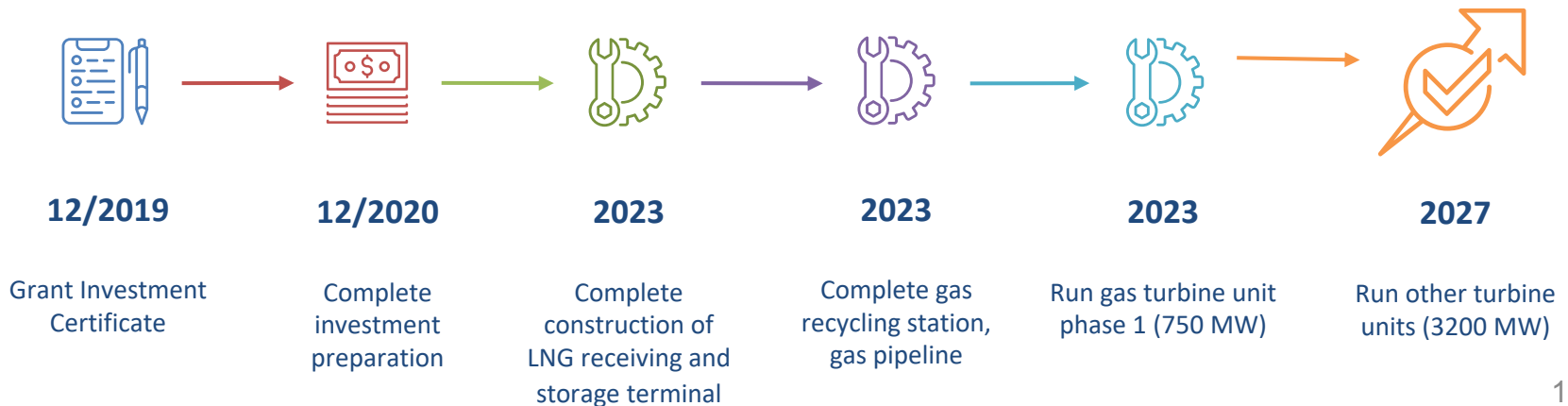
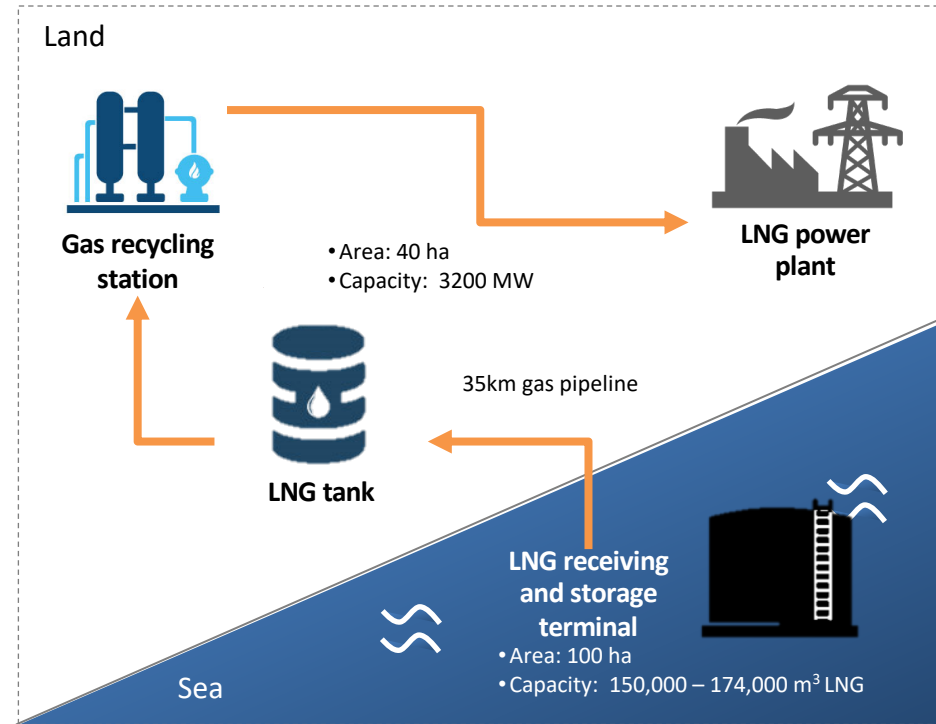
**Project:** Bac Lieu liquefied natural gas (LNG) power plant

**Total investment:** 93,600 billion VND (4 billion USD)

**Electricity price:** 7 cents/kWh

**Capacity:** 3200 MW

**Annual commercial output:** 19.2 billion kWh





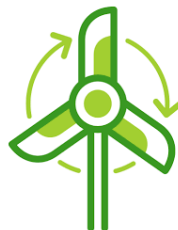
**GULF GROUP**

**Nation:** Thailand

**Fouded in:** 2007

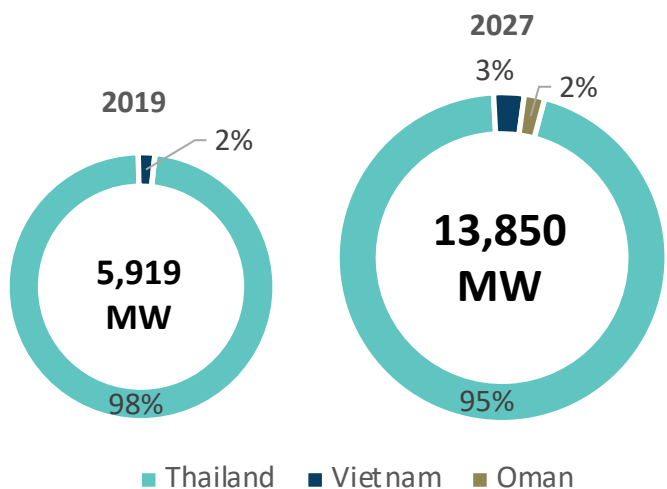
**URL:** <https://www.gulf.co.th/>

**Charter capital:** THB 10,666,500,000



(Đang chờ chính phủ xem xét)

**INSTALLED CAPACITY BY COUNTRY**



Project	TTC 1 (Thanh Thanh Cong)	TTC 2 (Thanh Thanh Cong)	Mekong Project (Thanh Thanh Cong)
Ownership ratio	90%	90%	95%
Location	Tay Ninh	Tay Ninh	Ben Tre
Investment	1500 billion VND	1200 billion VND	650 million USD
Capacity	68.8 MW	50 MW	30 MW (solar)
Commercial operation	6/2019	6/2019	12/2020 (plan)

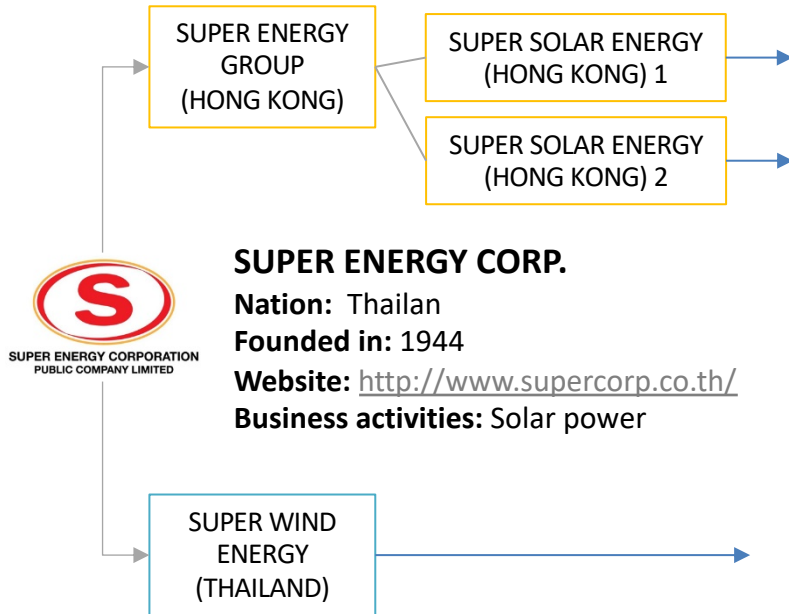
  

Project	Pech 1 (Gia Lai Green Power)	Pech 2 (Gia Lai Green Power)	Mekong Project (Thanh Thanh Cong)
Ownership ratio	100%	100%	95%
Location	Gia Lai	Gia Lai	Ben Tre
Investment	200 million USD		650 million USD
Capacity	50 MW	50 MW	310 MW (wind)
Commercial operation	2024	2024	12/2020 (plan)

Project	LNG Ca Na gas power plant
Investment	7.8 billion USD
Location	Ninh Thuan
Scale	6.000 MW (4 gas turbine thermal power plant)
Type	BOT or other investment

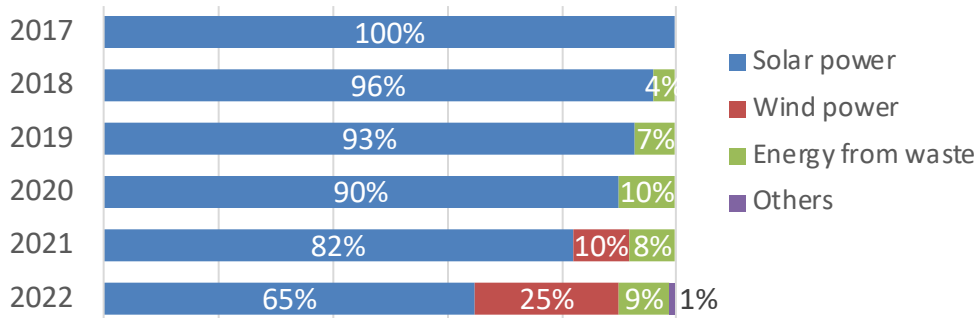
In Vietnam, Super Energy Corp focused in acquiring shares of investors of solar power and wind power projects.



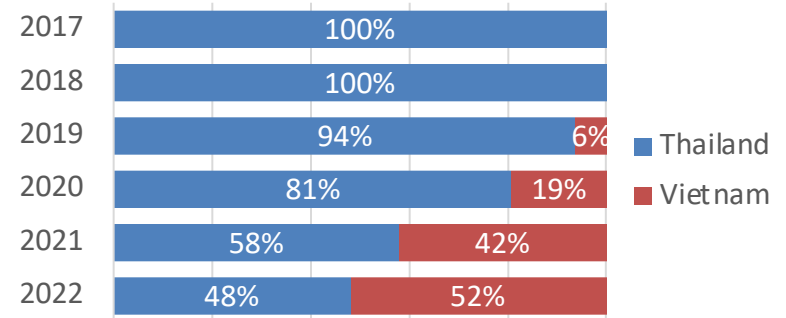
**Energy projects in Vietnam since 2018**

No.	Project	Location	Ownership ratio	MWp	Purchase price (million USD)
1	Phan Lam 1	Binh Thuan	100%	36.72	41.46
2	Binh An	Binh Thuan	100%	50	56.45
3	VanGiao 1,2	An Giang	100%	100	112.9
4	Sinenergy	Ninh Thuan	100%	50	56.45
5	Thinh Long	Phu Yen	100%	50	51.16
6	Loc Ninh 1,2,3,4	Binh Phuoc	70-100%	750	456.7
8	Khai Long	Ca Mau	100%	100	n/a
7	Soc Trang	Soc Trang	99%	98	n/a
8	Bac Lieu	Bac Lieu	99%	142	n/a
9	HBRE Phu Yen	Phu Yen	100%	200	14
10	HBRE Gia Lai	Gia Lai	100%	100	3.5

**REVENUE BY BUSINESS ACTIVITIES**



**REVENUE BY COUNTRY**



Source: SUPER, Yuanta Research

**JAPANESE COMPANIES WHO INVEST IN WIND POWER**



**Founded in:** 2000

**Total capital:** 2.08 billion JPY

**Business:** Renewable energy

**Website:** <https://www.renovainc.com/>

In Japan:



13 solar power projects



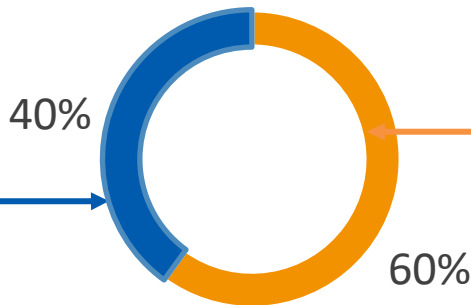
2 wind power projects



3 biomass power projects



2 geothermal power projects



**CÔNG TY CỔ PHẦN XÂY LẬP ĐIỆN 1**  
POWER CONSTRUCTION JOINT STOCK COMPANY NO.1

**Capital contribution to 3 wind power projects**

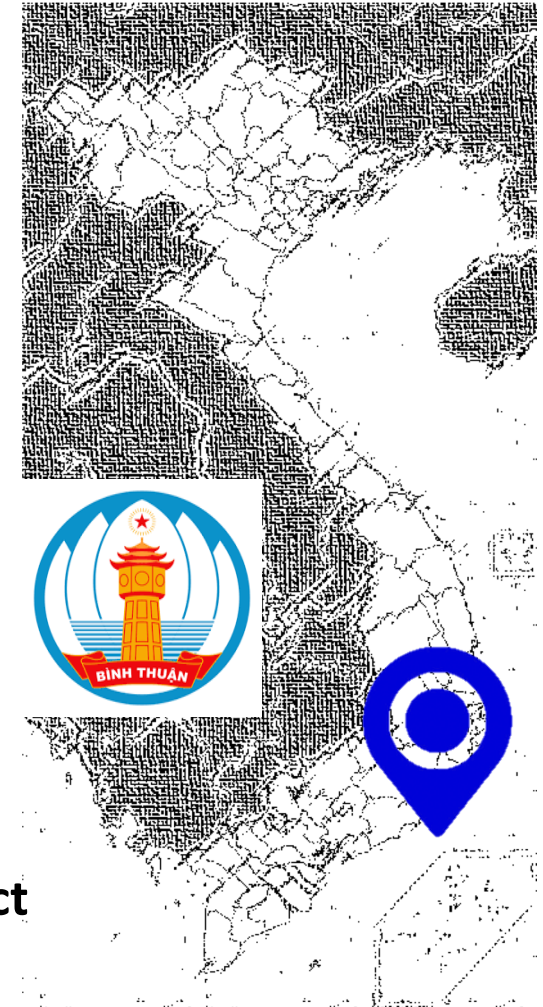
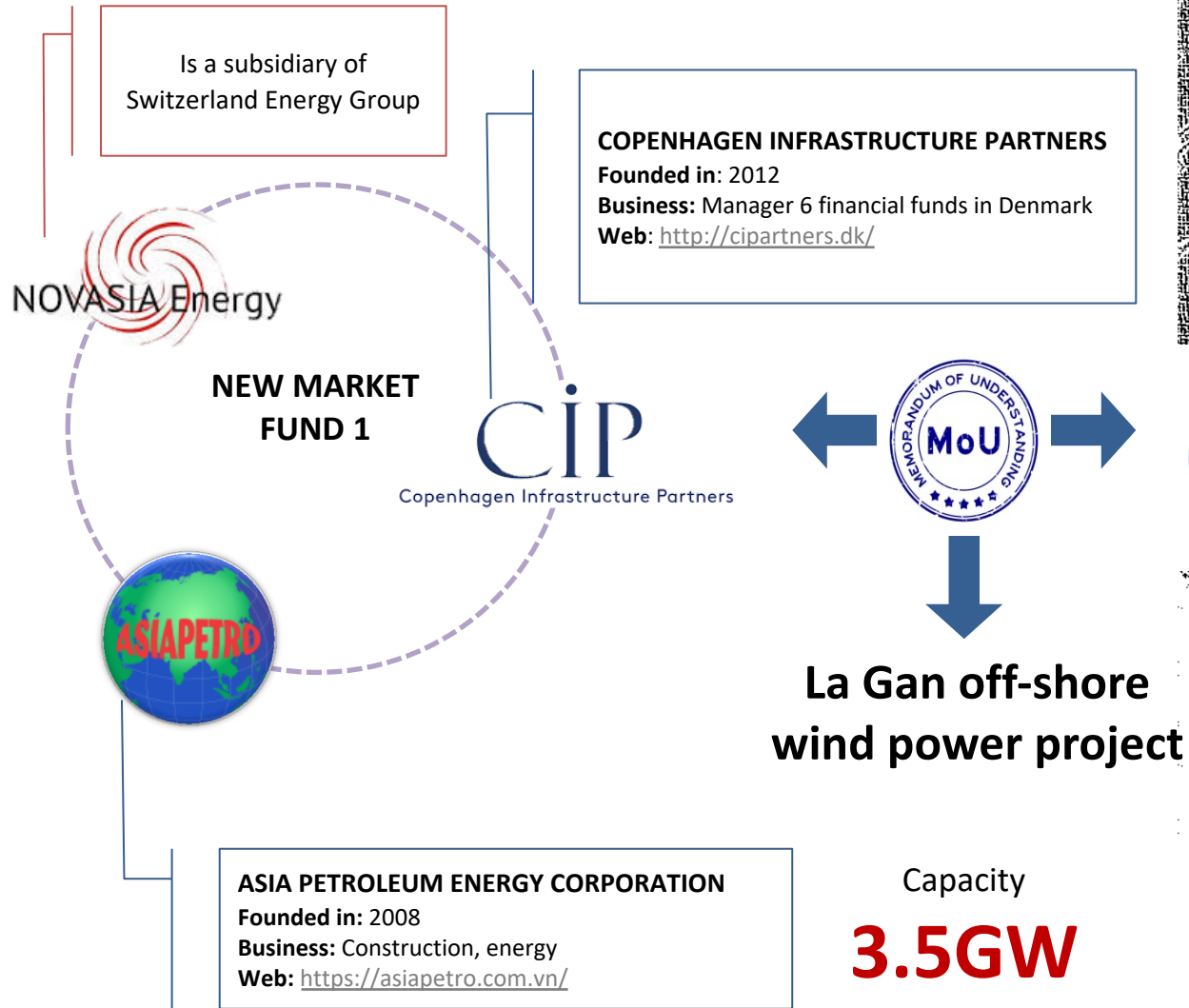
Project	Lien Lap	Phong Huy	Phong Nguyen
Investment	1500 billion VND	1200 billion VND	650 million USD
Capacity	48 MW	48 MW	48 MW
Electricity price	8.5 cents /kWh		
Commercial operation	Before 10/2021 (plan)		



• Start

• Complete

# LA GAN OFF-SHORE WIND POWER PROJECT



Capacity  
**3.5GW**

Total capital  
**10 billion USD**



**AYALA CORPRATION**

**Nation:** Philippine

**Founded in:** 1834

**URL:** <https://www.ayala.com.ph/>

**PARTNERS IN VIETNAM**

AMI AC  
RENEWABLE



B&T  
WINDFARM



	Solar power BMT	Solar power AMI	Solar power BIM 1, 2, 3	Wind power B&T	Wind power Dai Phong
Location	Dak Lak	Khanh Hoa	Ninh Thuan	Quang Nam	Binh Thuan
Total capacity	30 MW	50 MW	330 MW	210 MW	40 MW
Investment	676 billion VND	1,245 billion VND	7,000 billion VND	8,900 billion VND	1,320 billion VND
Area	34.8 ha	65 ha	NA	NA	12.7 ha