GENERATION

Type	Installed Capacity (MW)	Rate (%)
Hydro	16970	29.84%
Coal	20267	35.64%
Gas Turbin	7446	13.09%
Small Hydro	3674	6.46%
Wind Power	434	0.76%
Solar Farm	4939	8.69%
Rooftop	611	1.12%
Biogas	325	0.57%
Oil thermal	1579	2.78%
Diesel	24	0.04%
Import	572	1.01%
Total	56868	100%

31/5/2020

Type	Installed Capacity (MW)	Rate (%)
Hydro	17076	23.68%
Coal	23997	33.28%
Gas Turbin	7446	10.26%
Small Hydro	3887	5.39%
Wind Power	638	0.88%
Solar Farm	8852	12.28%
Rooftop	7756	10.76%
Biogas	325	0.45%
Oil thermal	1579	2.19%
Diesel	24	0.03%
Import	572	0.79%
Total	72104	100.00%

30/6/2021

POWER SOURCE STRUCTURE BY INSTALLED CAPACITY

GENERATION

2020

- Oil thermal 2.8%
- Biogas 0.6%
- Diesel 0.0%
- Import 1.0%
- Hydro 29.8%
- Rooftop 1.1%
- Solar Farm 8.7%
- Wind Power 0.8%
- Small Hydro 6.5%
- Gas Turbin 13.1%
- Coal 35.6%

2021

- Oil thermal 2%
- Diesel 0%
- Biogas 1%
- Import 1%
- Hydro 24%
- Rooftop 11%
- Solar Farm 12%
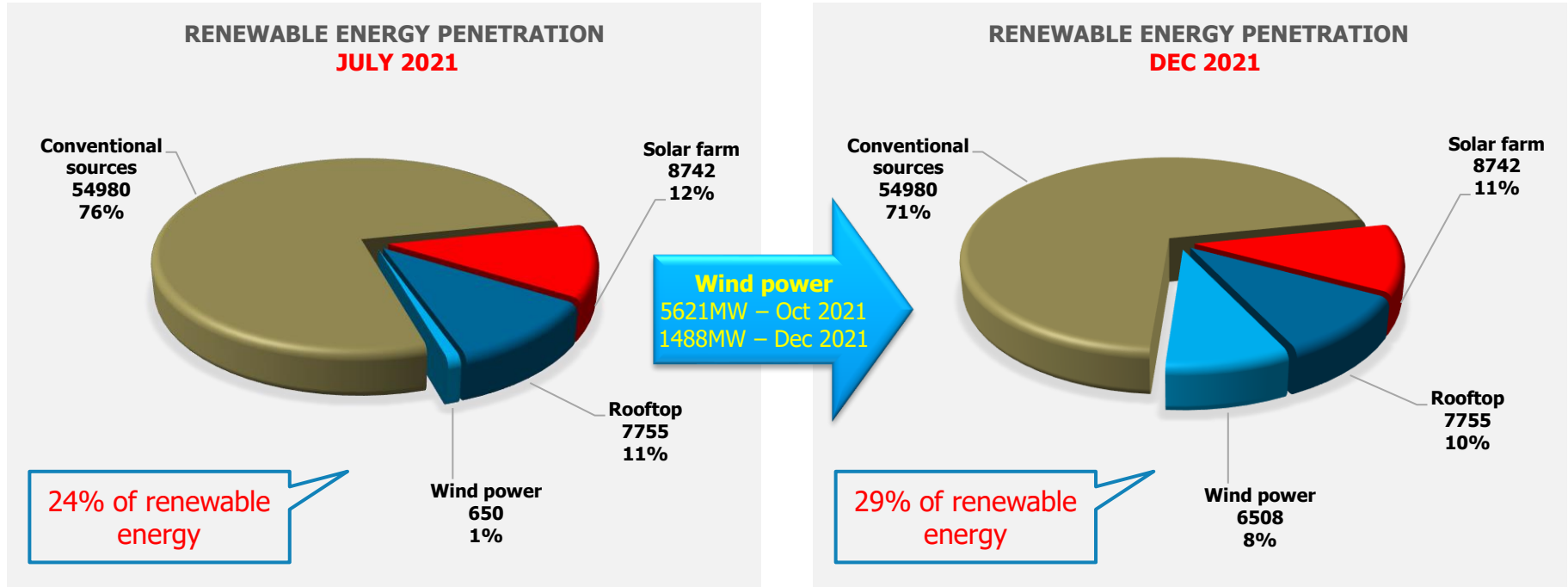- Wind Power 1%
- Small Hydro 5%
- Gas Turbin 10%
- Coal 33%
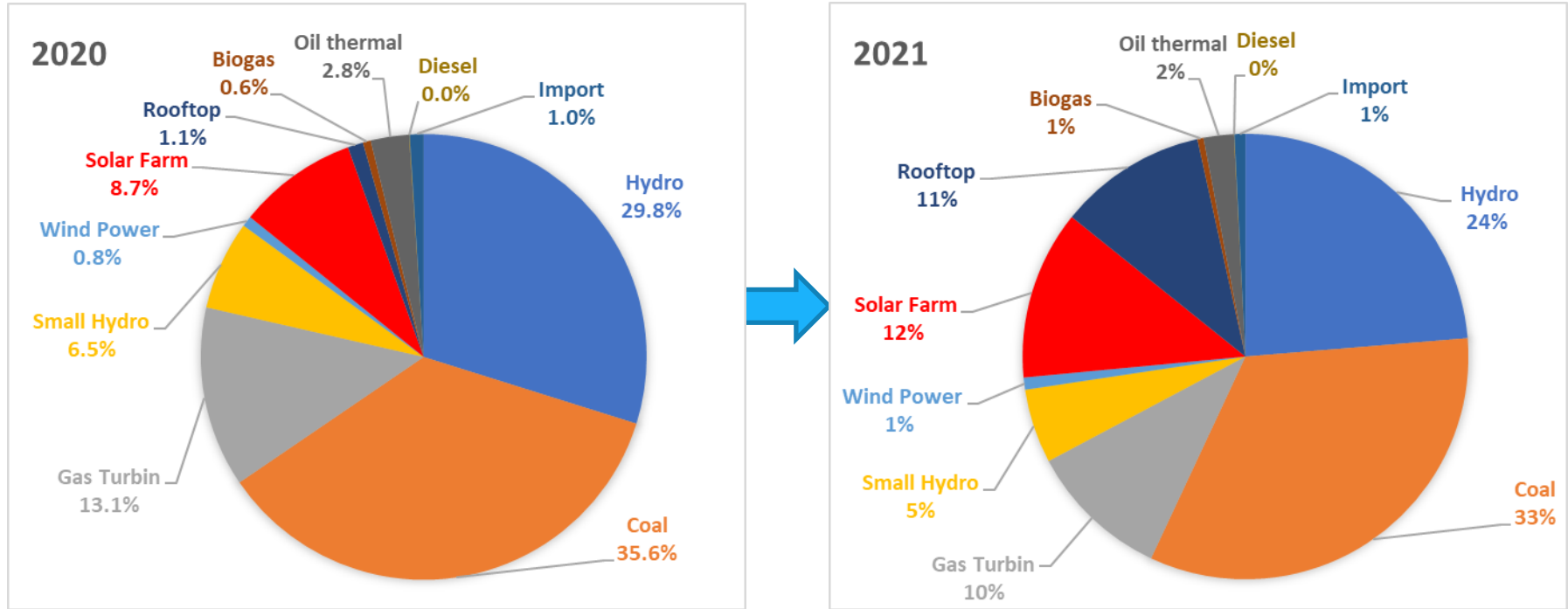
POWER SOURCE STRUCTURE BY INSTALLED CAPACITY
Changes from 31/05/2020 to 31/06/2021

EXPECTED RENEWABLE IN END OF 2021

RENEWABLE ENERGY PENETRATION
JULY 2021

Conventional sources 54980 76%

Solar farm 8742 12%

Rooftop 7755 11%

Wind power 650 1%

24% of renewable energy

Wind power
5621MW – Oct 2021
1488MW – Dec 2021

RENEWABLE ENERGY PENETRATION
DEC 2021

Conventional sources 54980 71%

Solar farm 8742 11%

Rooftop 7755 10%

Wind power 6508 8%

29% of renewable energy

RENEWABLE ENERGY PENETRATION IN THE FURUTE

ENERGY PRODUCTION 2020

China

Lao PDR

Export to Cambodia

Hydro		72867 Gwh (29.6%)
Coal		122533 Gwh (49.8%)
Oil & Gas		35703 Gwh (14.5%)
Import & Other		3889 Gwh (1.7%)
Renewable Energy		10896 Gwh (4.4%)
Total	Σ	245888 Gwh

Data:12/2019

Update: 01/01/2021, exclude rooftop solar

LOAD PROFILE IN 2021

National load curve

Jul 3, 2021

Peak load 42.365 MW
Peak daily energy 862 mil.kWh
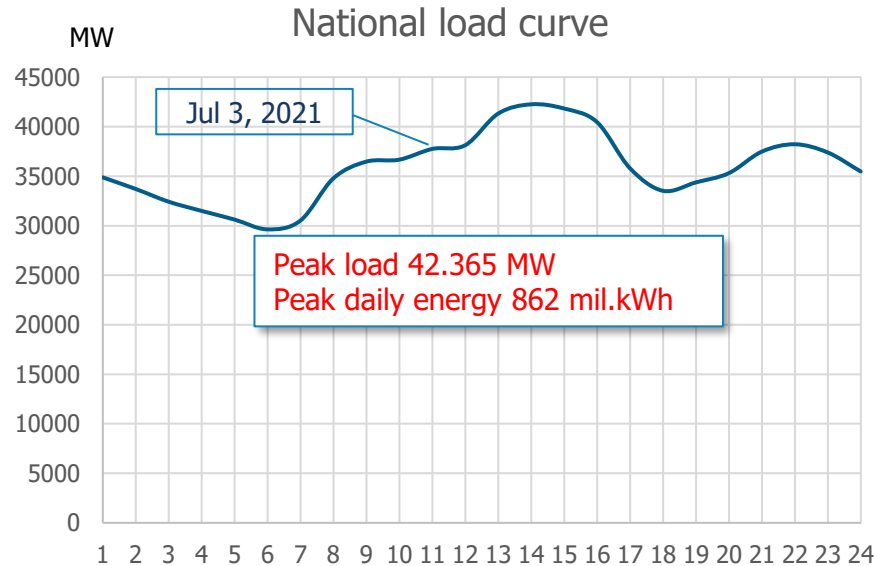
500kV TRANSMISSION SYSTEM

Northern Region

Nghi Sơn 2
Nho Quan
NMĐ Sơn La
Hà Tĩnh
NMĐ Lai Châu
Hòa Bình
Thường Tín
Phố Nối
Vũng Áng
Sơn La
Đông Anh
Quảng Ninh
Việt Trì
Hiệp Hòa

Hydro	9552
Small Hydro	2197
Coal	13364
Solar	97
Others	224

25434 MW

Centre Region

Đà Nẵng
Dốc Sỏi
Pleiku
ĐakNông
Pleiku 2
Xuân Thiện Easup
Thạnh Mỹ

Hydro	5533
Small Hydro	1363
Solar	2665
Import	572
Others	516

10649 MW

Southern Region

Di Linh
Tân Định
Vĩnh Tân
Sông Mây
Phú Mỹ
Cầu Bông
Nhà Bè
Phú Lâm
Mỹ Tho
Chơn Thành

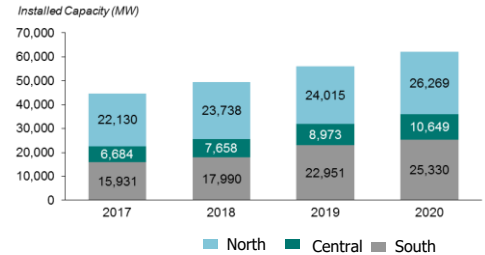|	
Hydro	1991
Small Hydro	327
Coal	10603
Gas	7398
Wind	528
Solar	6090
Others	1351

28288 MW
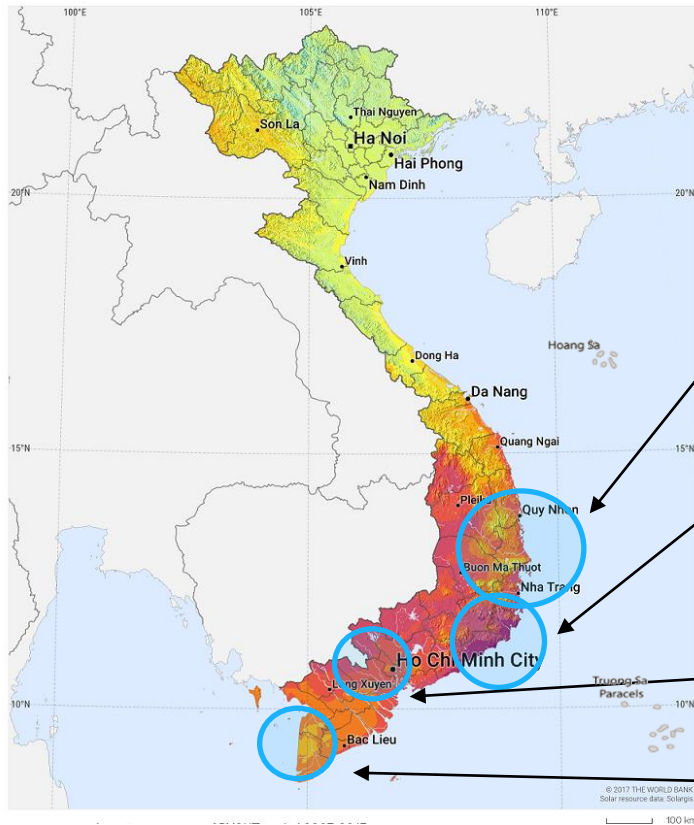
RE surplus and 500kV Interfaces overload
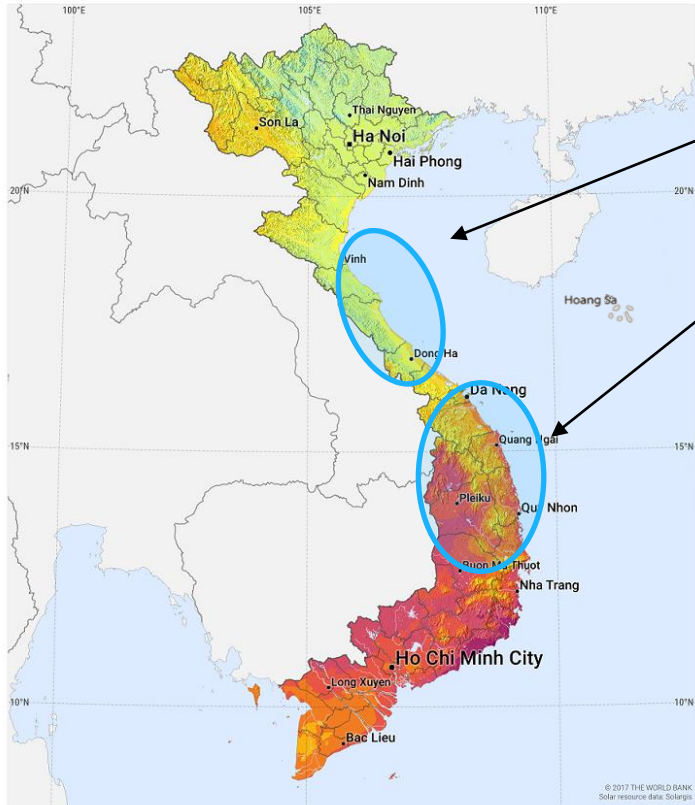
500kV Interface Northern – Central (limit 2000 MW)

500kV Interface North Central – South Central (limit 1950 MW)

Due to high penetration of solar in Central and Southern of Vietnam, during the noon (off-peak) the supply may exceed the demand and cause the 500kV Interfaces overload (Northern – Central and North Central – South Central). Maximum power curtailed during Lunar New Year of solar ~ 5500 MW solar farms and ~3500 MW rooftop.

Installed Capacity (MW)

	2017	2018	2019	2020
North	22,130	23,738	24,015	26,269
Central	6,684	7,658	8,973	10,649
South	15,931	17,990	22,951	25,330

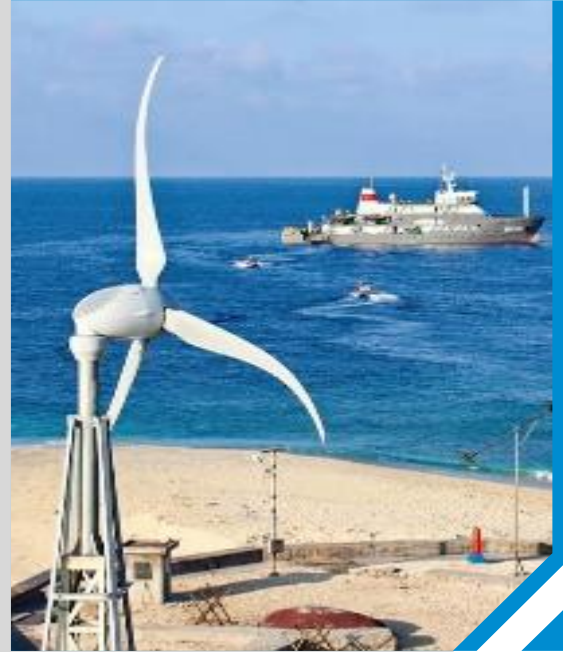# Local overload due to RE plants

Binh Dinh, Phu Yen, Khanh Hoa provinces overload
220kV lines: Quy Nhon – Tuy Hoa, Quy Nhon – An Khe HPP – SK An Khe - Pleiku

Ninh Thuan, Binh Thuan provinces overload
220kV lines: Nhi Ha – Thuan Nam, Ninh Phuoc – Thuan Nam, Da Nhim – Duc Trong – Di Linh
220kV transformer: Ninh Phuoc 2x250 MVA
110kV lines: Thap Cham – Ninh Phuoc – Phan Ri

Long An province
Overload 110kV line An Thanh – Thu Thua

An Giang province
Overload 110kV line Chau Doc – Tinh Bien

THANK YOU FOR YOUR LISTENING