

Challenges and Opportunities of the Sustainable Energy Transition in Viet Nam

Hanoi, 26 January 2022

Prime Minister Vietnam has statement to go Net-zero by 2050 in COP26

→ an urge to have more effort in climate actions in harmony with achieving socio-economic development goals

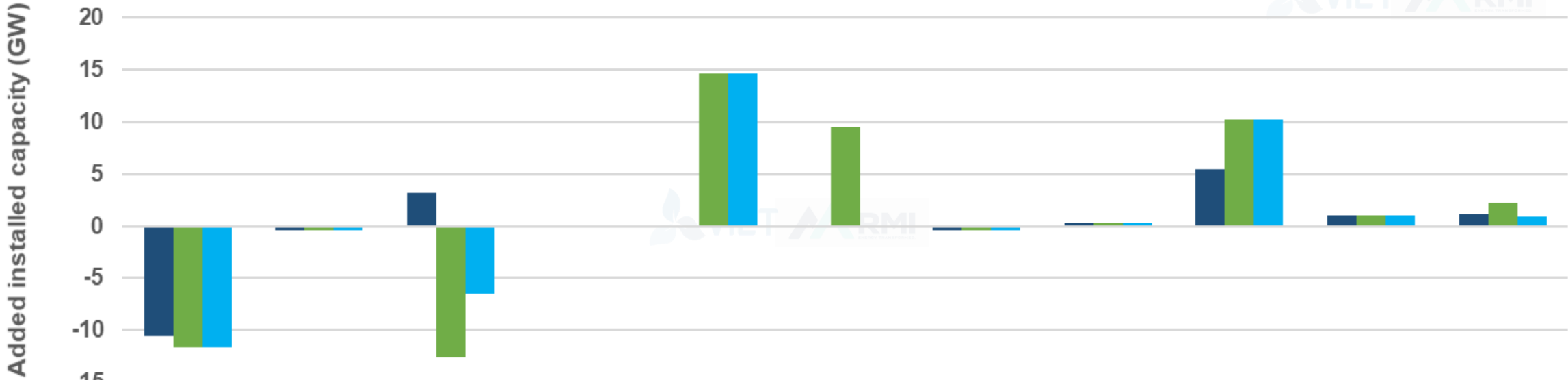
Sustainable and reliable Energy transition needs clear long-term plan with science-based evidence.

- Energy Transition was a new term in Vietnam 3 years ago, and now it become obvious and inevitable ET in VN already started and gathering momentum
- To contribute to the process, ETP has supported MOIT on Long term roadmap for decarbonizing the power sector in Vietnam. The study conducted by VIET and RMI, developed several scenarios to analyze whether the power sector can be further decarbonized while still ensuring the quality of the power supply.



Opportunities - Installed Capacity Scenario compared to BAU (draft PDP8)

2030



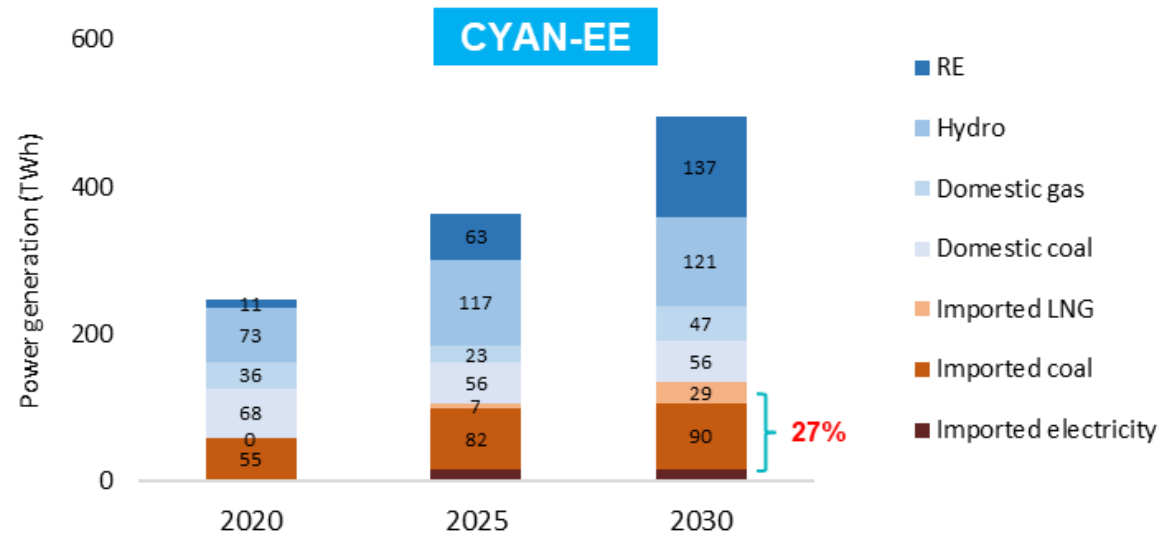
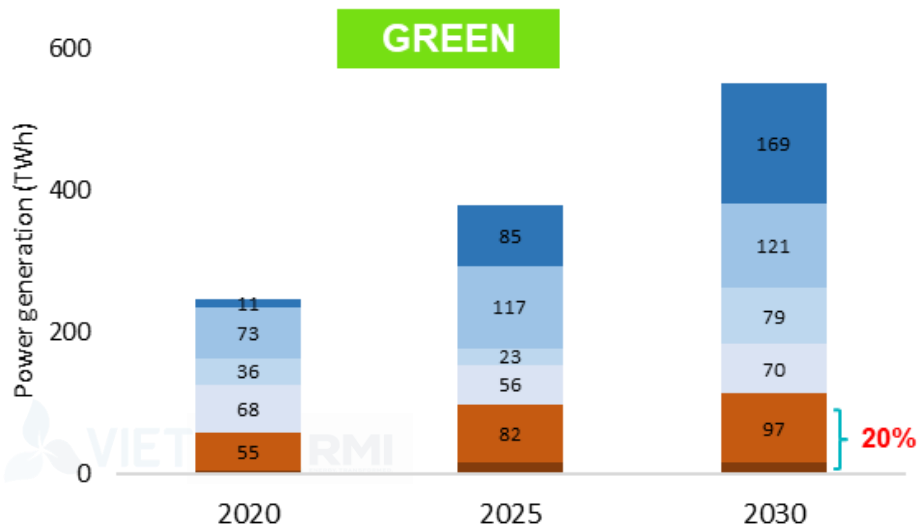
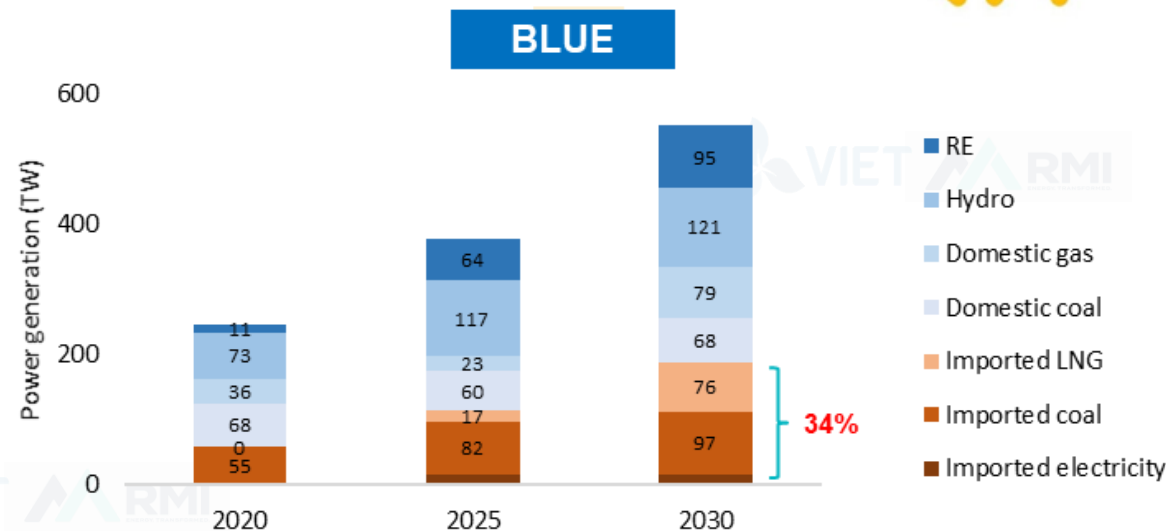
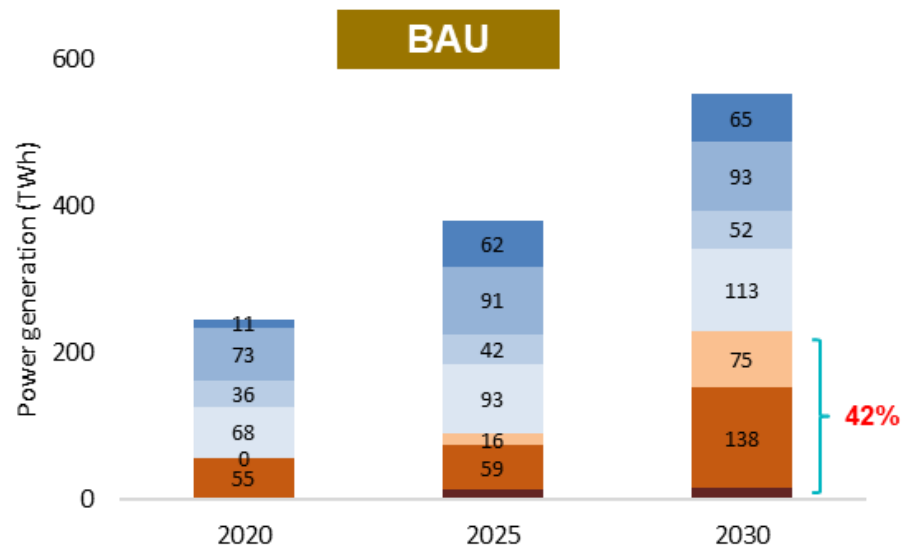
	Coal	Gas	LNG	Oil	Solar	Wind	Biomass	Waste incineration	Offshore Wind	Hydro	Storage - Pumped Hydro
■ Blue	-10,540	-381	3,150	-138	-13	0	-409	295	5,400	1,029	1,200
■ Green	-11,680	-381	-12,550	-138	14,669	9,467	-409	295	10,200	1,029	2,259
■ Cyan_EE	-11,680	-381	-6,550	-138	14,669	0	-409	295	10,200	1,029	953

■ Blue ■ Green ■ Cyan_EE

Source: VIETSE' & RMI study

Opportunities - Energy security assessment

Power generation by imported/domestic source

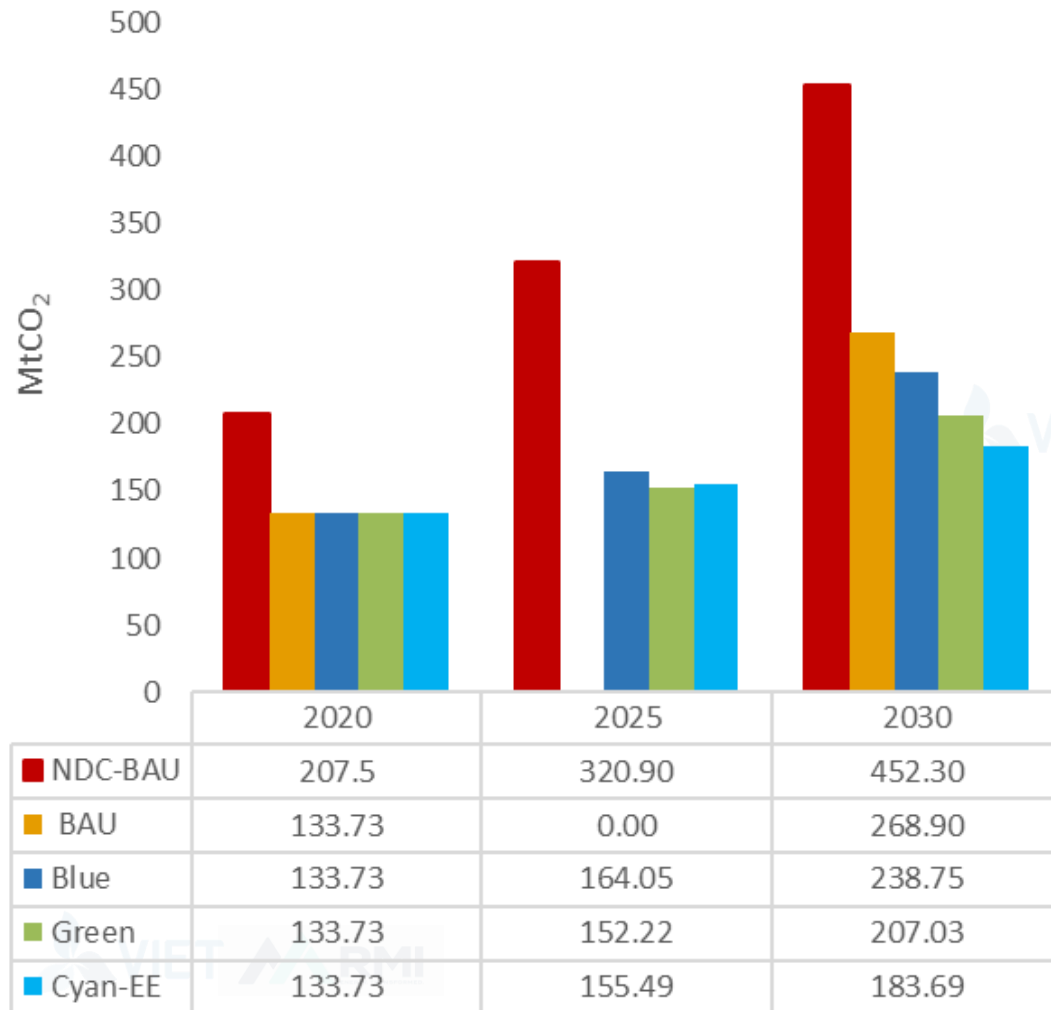


Opportunities - Abatement Scenarios for Power sector in Vietnam



Metrics	2030	2045
Energy efficiency and DSM	↑ From 1.5% to 10%	↑ From 1.5% to 16%
Electricity generated from renewable sources	54%, ↑ VRE contribution from 4% in 2020 to 28%	60%, ↑ VRE contribution from 4% in 2020 to 42%
Share of generation from coal	↓ 30% from 50% in 2020	↓ 19.5% from 50% in 2020
Total jobs in the power sector including fuel supply	1.3 million ↑ 18% vs. expected	2.4 million ↑ 5% vs. expected
Import dependency of power sector	↓ 27% vs 42% for BAU	↓ 25% vs 46% for BAU
Total investment cost (for power, infrastructure and EE measures)	↓ USD 155 billion	↓ USD 410 billion

Opportunities - CO2 emission reduction



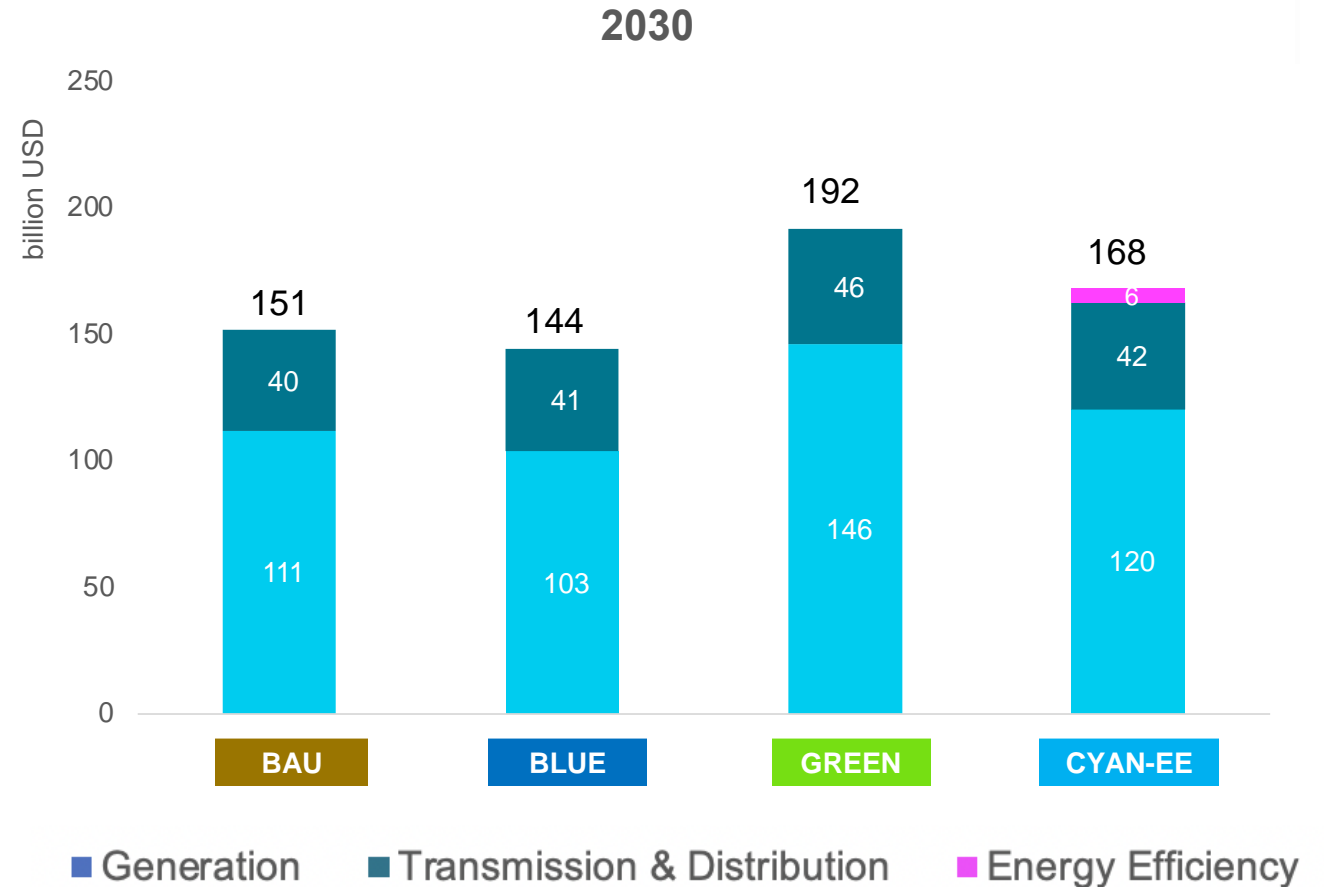
CO₂ emission reduction in 2030 compared to NDC

	NDC	BAU	BLUE	GREEN	CYAN-EE
CO ₂ emission (Mt) in 2030	452	269	238	207	183
Reduction (%)	-	34%	47%	54%	59%

Challenges - Total investment cost for New generation resources and infrastructure



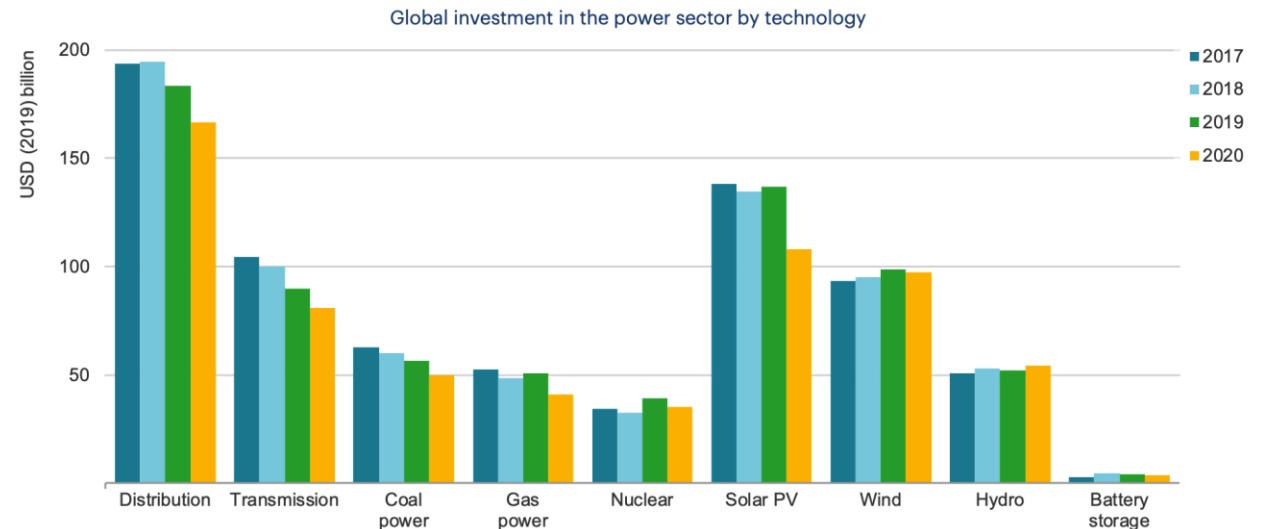
- Overall, upfront investment costs for all scenarios are relatively similar (within 25%)
 - Small amounts of savings can be realized with the Blue scenario compared to Business-as-Usual (5%)
 - Green and Cyan-EE scenarios require more investment than Business-as-Usual, however, these scenarios can provide savings in the longer term
- Generation makes up about 75% of the total new generation investment cost for each scenario



Recommendations

- Long-term energy transition scenarios for net zero emission by 2050.
- Incentive policies for clean energy investment promotion.
- Incentive policies to speed up the deployment of clean and efficiency energy technologies.
- Specific goals and implement the competitive auction mechanism for VRE to accelerate the energy transition.

- Removal of fossil fuel subsidies carbon pricing and energy market reform.
- Planning and socialization in energy infrastructure investment, including smart transmission and distribution grids.
- State divestment strategy in coal power plants (CRM - Coal retirement Mechanism)



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Notes: Gas-fired generation investment includes large-scale plants as well as small-scale generating sets and engines. Hydropower includes pumped hydro storage.

Source: IEA analysis with calculations for solar PV, wind and hydropower based on costs from IRENA (2020).

Conclusion



- Toward Net-zero, Energy transition and decarbonization should go beyond power sector, covering industry, transport, residential, services and agriculture
- Any additional effort in emission reduction (to reach Net-zero by 2050) requires additional resources.
- We strongly emphasize that Science-based evidence is the critical element to accelerate a just, sustainable and reliable energy transition.