



CLEAN ENERGY INVESTMENT ACCELERATOR

*Mobilizing Clean Energy Investment in Southeast Asia's Power Sector:
Insights from Vietnam and Indonesia*

IESR Webinar – 2 June, 2020



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Clean Energy Investment Accelerator (CEIA)

is an innovative public-private partnership focused on improving opportunities for corporate clean energy purchasing

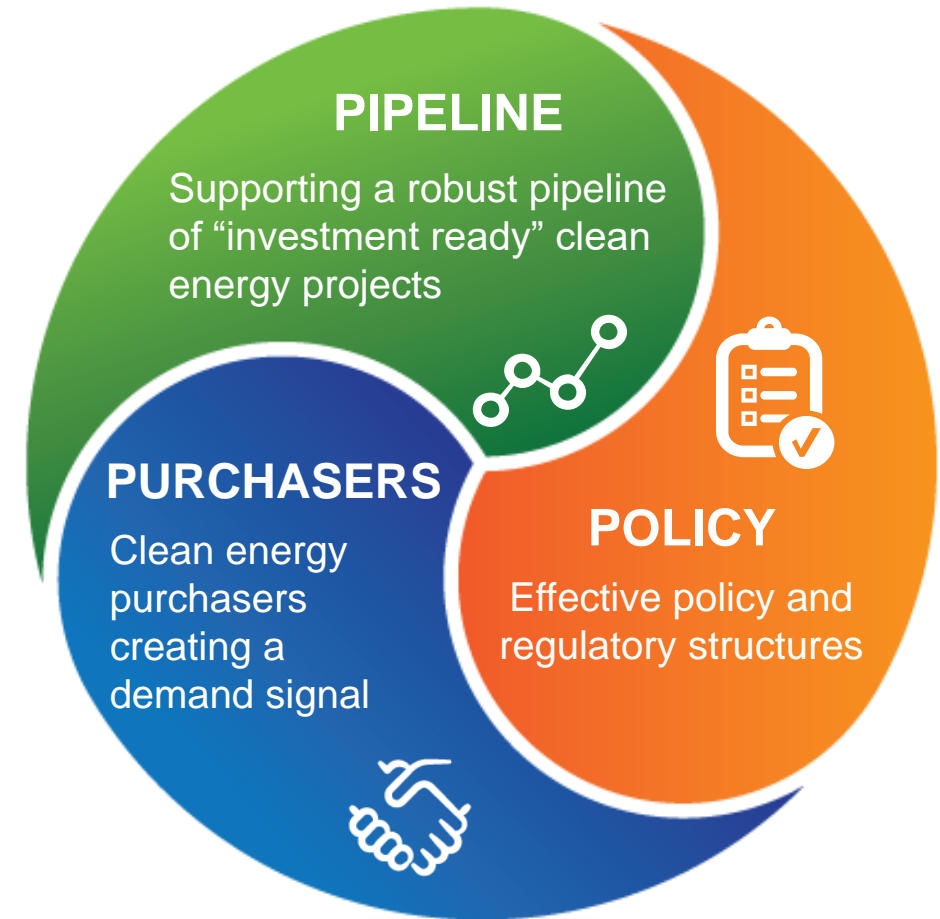
The CEIA is co-led by:

- **World Resources Institute (WRI),**
- **Allotrope Partners**
- **U.S. National Renewable Energy Laboratory (NREL)**

We work across emerging markets, including Mexico, Colombia, Vietnam, Indonesia, and the Philippines.



The CEIA is supported by key partners, including:



Questions to Explore

- **The context**
- **Where is Vietnam in its renewable energy growth trajectory?**
- **How has renewable energy in Vietnam expanded so quickly?**
- **Who are the key stakeholders?**
- **Key learnings**

The context:

Growing economy, increased FDI, power system scale-up, aim to reduce GHG

24%

FDI share of country's total investment

100-150% in 10 years

Increased power generation from 50GW to 135GW

~66%

Vietnam's GHG from power sector

\$51 billion

Smartphones and parts exported last year

\$10 billion annually

Necessary for scale-up of power generation and T&D

**25% by 2030
(8%)**

Reduce country's GHGs

- 4-6%

Economic growth declines from COVID-19

6 – 15 billion kWh

Anticipated power shortage from 2021 to 2023 (~5%)

Mid-way through electricity market liberalization

Solar Feed-in-Tariff – Round #1

- 9.35 USc/kWh
- 20-year PPA with EVN
- 850 MW target

Results

- 17,000 MW applications submitted
- ~5,000 MW implemented in 18 months

Solar Feed-in-Tariff – Round #2

- 7.09 USc/kWh ground-mounted
- 7.69 USc/kWh floating solar
- December 31, 2020 deadline
- 1.5 GW expected

Ground-Mounted

Commercial & Industrial

Floating

Residential

DPPA Pilot Program

- Pilot program enabling virtual PPAs
- B2B transactions for industrial power users
- Up to 1,000 MW
- Solar and wind
- First step toward permanent mechanism

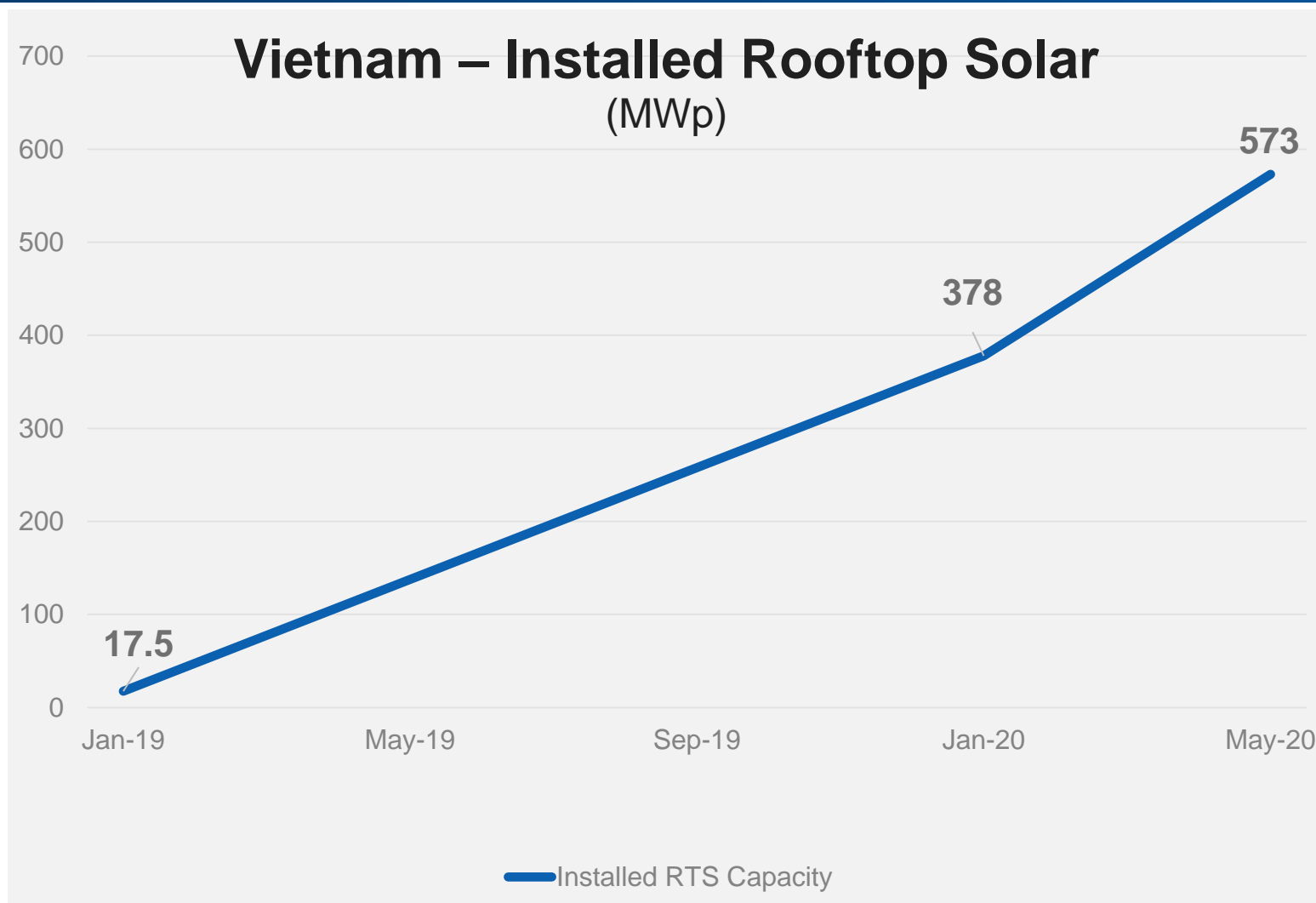
Rooftop Solar PV

- Flexibility for B2B rooftop solar transactions
- 9.35 USc/kWh 20-year PPA with EVN for net-billing
 - 8.38 USc/kWh in FIT2
- Streamlined permitting for < 1MWp
- Conducive to residential, SMEs and large businesses

Results

- ~575 MWp implemented in 16 months
- Up to 1,000 MWp projected by end-2020
- ~66% for commercial & industrial applications

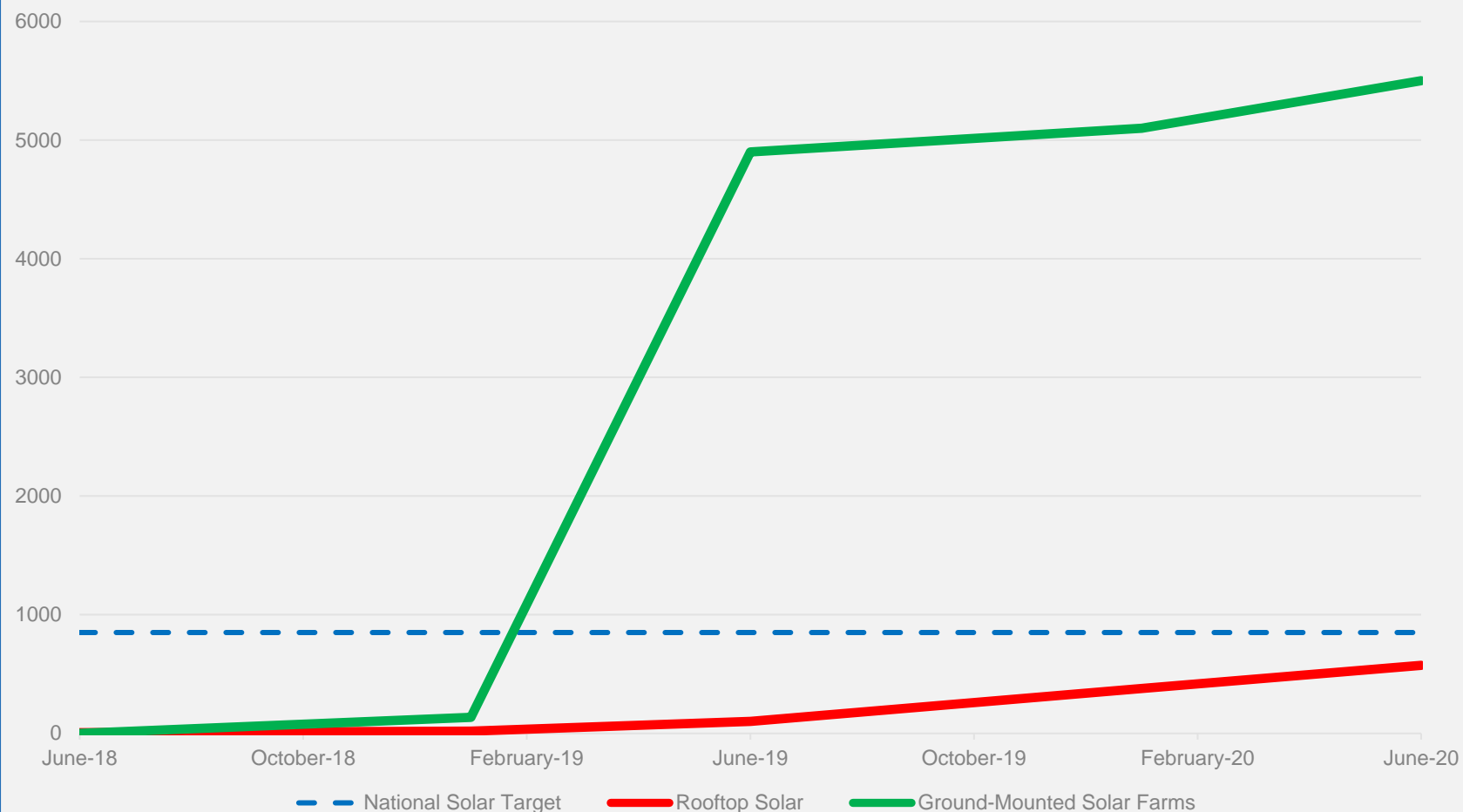
Rooftop Solar: 3000% growth (thus far)



- 35 MWp/month for 16 months
- ~ 50 MWp/month in 2020
- ~ 63% from C&I energy users
- 1,000 MWp projected by end-2020

Solar Exceeds National Target by 6.5x

Vietnam Solar Growth (2018-2020)
(MWp)



- 850 MWp national target by 2020
 - 4,000 MWp by 2025 goal
- ~5000 MWp in 12 months
- ~ 5500 MWp ground-mounted

How has renewable energy in Vietnam expanded so quickly?

- Conducive investment environment
 - Attractive feed-in-tariffs and net billing mechanism
 - Clear guidelines implemented relatively quickly
 - Willingness to make adjustments and clarifications
- Willingness to engage with private sector and market stakeholders
 - Public consultation and comment periods
- Allowing alternative electricity sources to compete
 - EVN very supportive of rooftop solar development
- Recognition of private sector's role in buying, selling, financing and operating
- Interest in new mechanisms and technologies
 - Direct Power Purchase Agreement Pilot Program (DPPA), large-scale floating solar PV

Who are the key stakeholders?

Government of Vietnam

- Ministry of Industry and Trade (MOIT)
- Electricity and Renewable Energy Agency (EREA)
- Electricity Regulatory Authority (ERAV)
- Advisors (GIZ, USAID, World Bank, DEA, etc.)

EVN and Subsidiaries

- Local / Provincial EVN Power Companies (PCs)
- National Load Dispatch Centre
- National Power Transmission Company

Buyers and Sellers

- Homes, businesses and industrials
- International brands and supply chains
- Solar and wind project developers
- EPCs, installers and service providers

Financiers

- Domestic banks
- Regional and international banks
- Development finance institutions (DFIs)
- Crowd-funders

Key lessons:

No shortage of investors – but be ready for the scale-up

- + Kickstart an industry; relatively fast “price discovery”
 - + Private sector-led investments
 - + Ample availability of capital; participation from local and regional investors and lenders
 - + Rapid roll-out to address power shortage risks
 - + Increasing the country’s attractiveness to FDIs
- Long stretches of policy uncertainty risks continued progress
 - Legal “gray areas” may slow down investor momentum
 - PPAs still deemed “unbankable” by most international lenders and investors
 - Grid congestion, curtailment and unhappy investors
 - Clear, enforceable quality standards are need for long-term industry sustainability

What's next

- Renewables continue price declines
 - Solar FIT2
 - Auctions
- Increased role of private sector
 - Corporate renewables procurement via rooftop solar and DPPA
 - Transmission and distribution (T&D) private investments
- Battery storage and deeper integration of variable power generation
- Will growth of renewables lead to meeting Paris climate targets?
 - Coal generation projected to double (Revised PDPVII: 37% of power generation by 2025)
- Will decreased power demand due to global pandemic benefit or harm Vietnam's RE growth?

THANK YOU



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