

DuaneMorris

POWER AND ENERGY IN VIETNAM

Vietnam's Draft New Solar Tariffs Policy

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AGENDA

- **VIETNAM'S LATEST ECONOMIC DEVELOPMENTS**
- **ENERGY SECTOR OVERVIEW**
- **POTENTIAL OF RENEWABLE ENERGY IN VIETNAM**
- **CURRENT GOVERNMENT'S POLICIES ON SOLAR ENERGY AND DRAFT NEW SOLAR FIT**
- **INVESTMENT GUIDELINES FOR FOREIGN INVESTORS**
- **RECOMMENDATIONS**

VIETNAM'S LATEST ECONOMIC DEVELOPMENTS

Vietnam 2018 Economy at a glance



- GDP: **US\$220.3 billion**
- GDP per capita: **US\$2,385**
- GDP Growth: 7.08% (record breaking since 2008)
- Inflation: **3.54%**
- Population: **About 91.70 million**
- Labor force aged 15 and above: **54.61 million**
- Total export and import turnover: : **>US\$482 billion (14% increase compared with 2017)**
- Regional Minimum wage (Region I): **VND 4.180 million (US\$ 180) per month (Jan 2019)**
- Vietnam's average age: **29 years old**

Welcome to the most dynamic country on this planet : Vietnam!

90 million people

Which are the world's most dynamic cities?
According to the JLL City Momentum Index 2017*

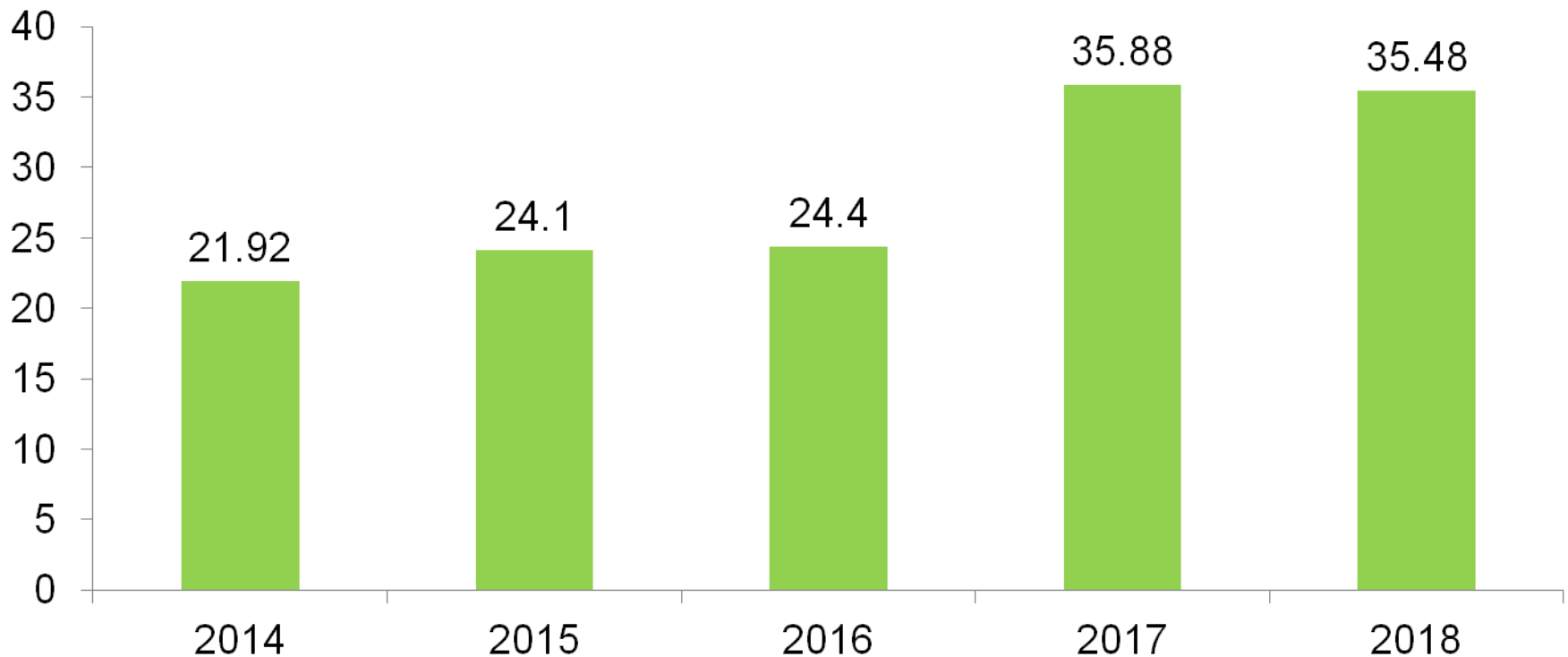
1. Bangalore (India)
2. Ho Chi Minh City (Vietnam)
3. Silicon Valley (USA)
4. Shanghai (China)
5. Hyderabad (India)
6. London (UK)
7. Austin (USA)
8. Hanoi (Vietnam)
9. Boston (USA)
10. Nairobi (Kenya)

Growing middle-class
(doubled by 2020 to
33 million people
according to Boston
Consulting Group)

Fastest-growing ASEAN economy
in 2018 and 2019, as in 2017 –
Standard Chartered Bank predicts

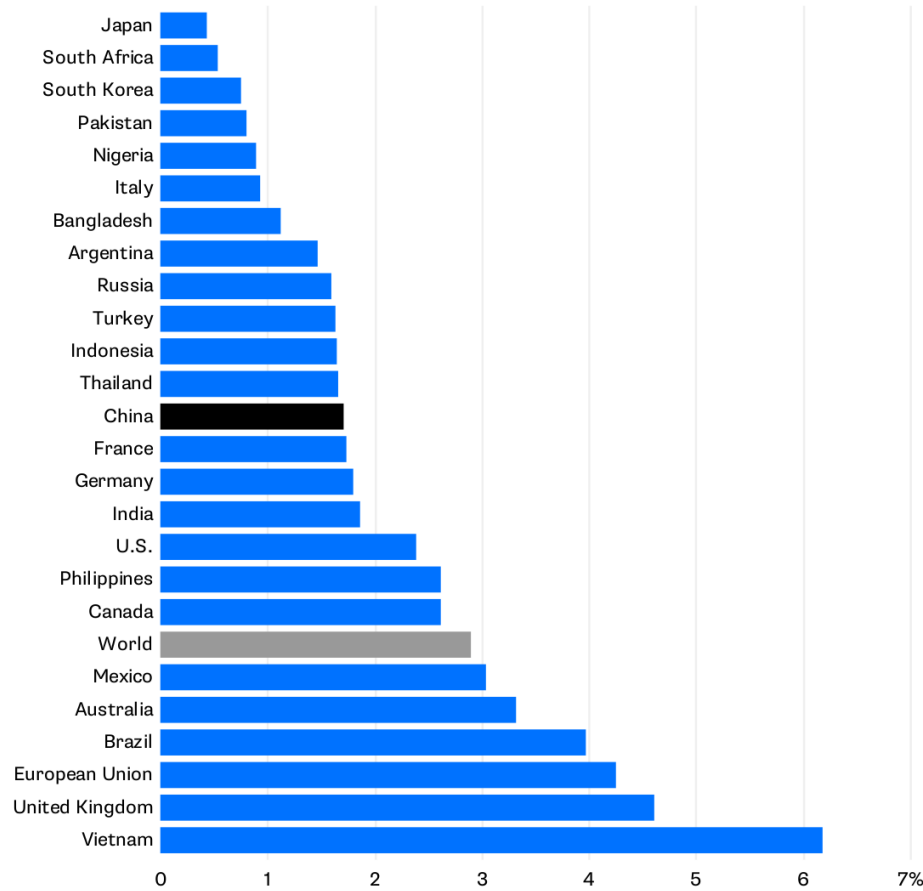
Increasing Foreign Direct Investment

Foreign Direct Investment Value (2014-2018) (billion USD)



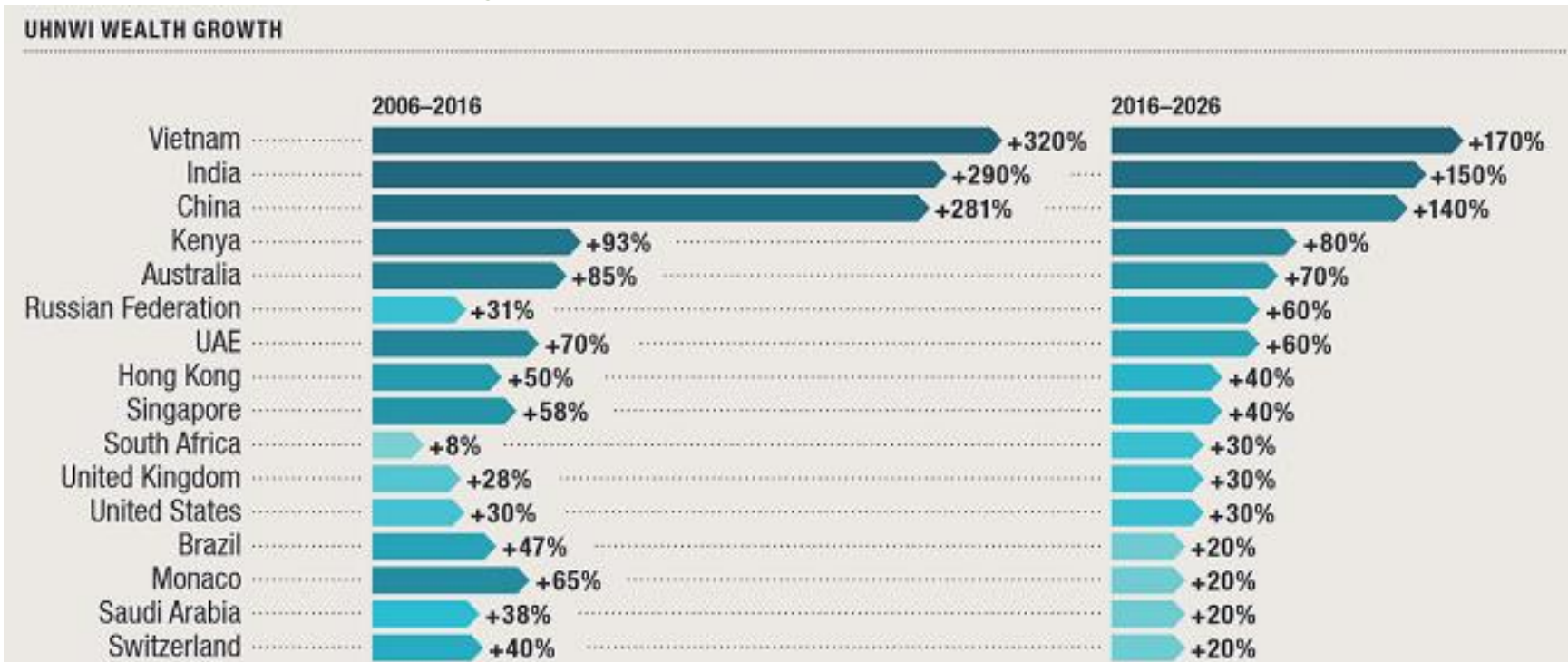
Trading Places

China is on a par with France, Germany and India in terms of foreign direct investment inflows as a share of gross domestic product



Note: We've taken three-year averages of the 2015-2017 period, as year-by-year figures can be volatile as a result of major transactions.
 Source: World Bank, Bloomberg Opinion calculations

Vietnam's super rich population is growing faster than anywhere else....



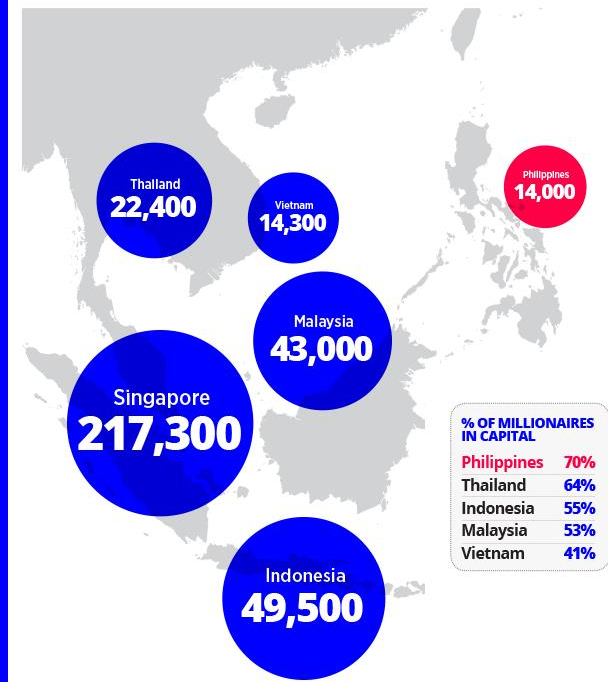
... and is on track to continue leading the growth in the next decade

Communist Vietnam Has More Millionaires Than Capitalist Philippines



ASEAN Millionaires

Number of residents in large Southeast Asian countries with a net worth of at least a million US dollars in 2016



Source: Knight Frank, The Wealth Report 2017

Entrepreneur
PHILIPPINES

Energy Sector Background

- Electricity demand is expected to increase by up to 11.4 pct. for the 2016-2020 period and 7 times to 800 billion Kwh in 2030
- Electricity consumption is projected to increase from 85,932 gigawatt hours (GWh) in 2010 to 251,763 GWh in 2020
- Electricity of Vietnam (EVN) holds a monopoly on electricity transmission and distribution
- PetroVietnam under the control of the Ministry of Industry and Trade, has administrative authority over oil and gas activity in Viet Nam.
- PetroVietnam operates an upstream subsidiary while PetroVietnam Exploration and Production develops its own projects and joint ventures with foreign companies



POTENTIAL OF RENEWABLE ENERGY IN VIETNAM

POTENTIAL OF RENEWABLE ENERGY IN VIETNAM

Small hydro
power



Potential: > 7.000 MW
Current use: 1900 MW

Biomass



Potential: >3000 MW
Current use: 150 MW

Wind



Potential: 7000MW
Current use: 90 MW

Solar



Potential: 4-6 kWh/m²
Current use: 5 MW

Municipal
wastes

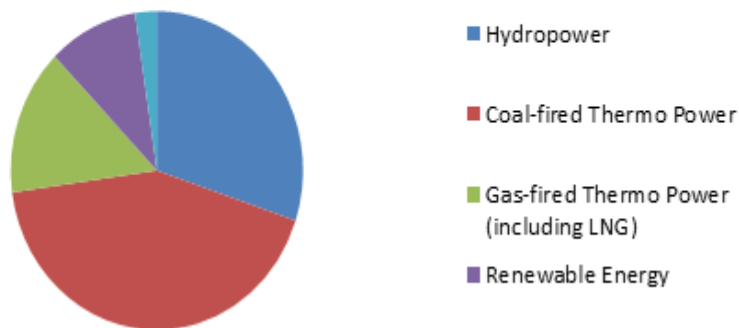


Potential: 220 MW
Current use: 2.4 MW

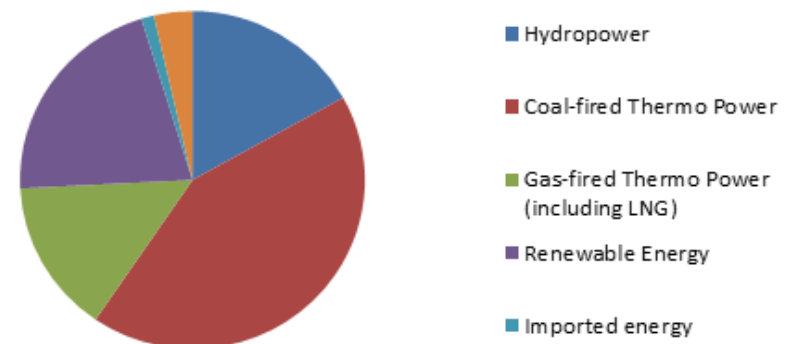
Vietnam's electrical energy mix

- Vietnam policy emphasises the need to diversify the country's energy mix whilst maximising the use of local energy reserves
- Currently Vietnam is developing an energy mix sector **with the mainstay of coal fired power**

By 2020 - Total Capacity to be 60,000 MW



By 2030 - Total Capacity to be 129,500 MW

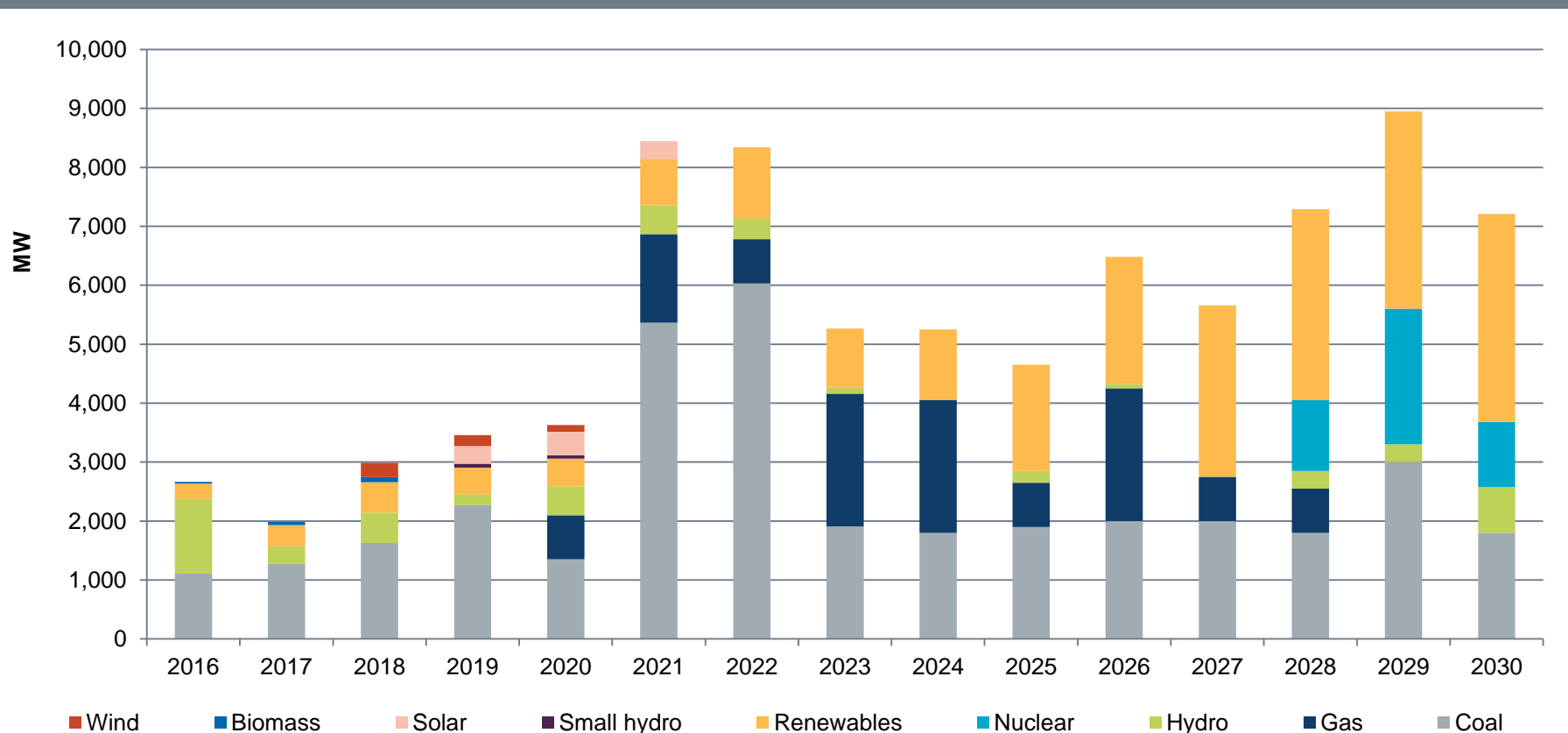


Coal production – World Bank no longer supports???



Capacity additions each year to 2030

PDP Revision 2016: Capacity additions each year

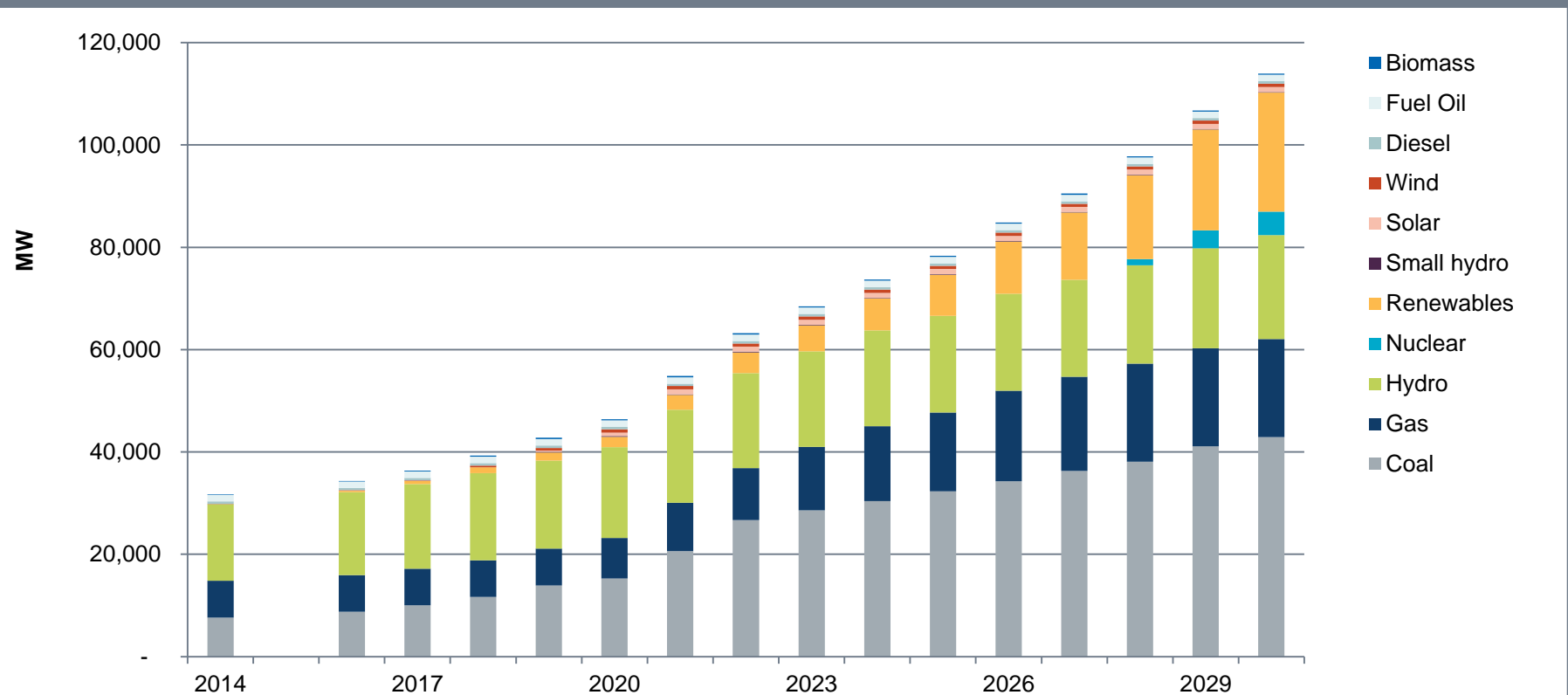


Source: IHS, Vietnam PDP Revision 2016

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Cumulative capacity to 2030

PDP Revision 2016: Capacity additions cumulative



Source: IHS, Vietnam PDP Revision 2016

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CURRENT GOVERNMENT'S POLICIES ON SOLAR ENERGY



Current Government's policies on renewable energy – General documents

- Electricity Law 2004 and 2012
- The Revised Power Development Plan 2011-2020 (revised PDP VII) approved by Prime Minister in Decision 428/QĐ-TTg dated 18 March 2016
- Still under development and not suitable with current industry practice: Law on Petroleum No. 18-L/CTN passed in 1993, as amended on 2000, 2008
- No master plan yet for the whole oil and gas industry: Only Decision No. 459/QĐ-TTg approving master plan for development of Vietnam gas industry until 2015, vision to 2025
- Lack of transparency: Decision No. 386/QĐ-TTg and Decision No. 233/QĐ-TTg Approving strategy for development of oil and gas sector until 2015, vision to 2025
- Decision 2068/QĐ-TTg dated 25 November 2015 on development strategy and vision of RE to 2050.

Current Government's policies on renewable energy – Solar power

- Decision 11/2017/QD-TTg dated 11 April 2017 by PM on Incentive mechanism for solar energy development (as amended by Decision 02/2019/QD-TTg)
- Circular 16/2017/TT-BCT dated 12 September 2017 on project development and PPA for solar energy

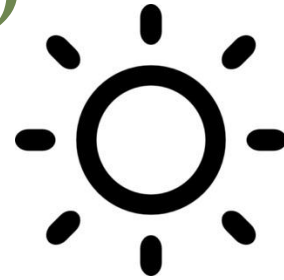
Latest developments in Vietnam's solar market

- About 46 solar projects have been approved/under construction/ in operation/ ground broken with total capacity of ~4,000 MW (Jan 2019)
- 35 PPAs signed with the total capacity of approximately 2,271 MW (Jan 2019)
- Vietnam would increase its electricity production from renewable sources from about 58 billion kWh in 2015 to 101 billion kWh by 2020 and 186 billion kWh by 2030.
- Vietnam now plans to increase solar power consumption in households by 26% by 2030.

Latest developments in Vietnam's solar market (cont.)

- The Government will issue **NEW FIT** price and **NEW PPA** that can be used for projects after 30 June 2019.
- On 29 January 2019, the Ministry of Industry and Trade (“**MOIT**“) released parts of a draft decision to update the country's current solar feed in tariff (FiT) structure which is only valid until 30 June 2019. The MOIT's draft on differing FiTs that vary based on: (i) when COD happens, (ii) location (3 regions are identified based on solar irradiation data), and (iii) the type of solar projects (i.e., floating, ground-mounted, integrated storage system or rooftop solar).
- The Government is now also working on a Competition Auction System that may be completed at around the 2020. The NEW FIT price is to be applied until this Competition Auction System is completed.

Solar Decision until June 2019 (as amended)



- FIT:
 - On-grid projects: 9.35 US cents/kWh.
 - No FIT for off-grid rooftop projects
 - Only one off-taker (EVN) and No direct PPA (B2B)
 - The FIT applies for projects which come into operation before 30 June 2019 and within 20 years from the commercially operational date (“COD”) (*i.e.*, the date when the solar plant is ready to sell electricity to the buyer – EVN)
 - The FIT COD will likely be extended **for another half a year or another year** for solar projects across Vietnam, except for projects in Ninh Thuan
 - For solar projects in Ninh Thuan, the COD deadline extension will be longer (*i.e.* **until end of 2020**).
- **No net metering** for rooftop projects. Power fed into the grid from rooftop solar projects will be calculated separately from power bought by rooftop household from a power company.

Draft new Solar Tariffs effective from 1 July 2019

Projects with COD from 1 July 2019 to 30 June 2020

Solar power types	Region 1 (see regions in the next slide) (28 northern provinces with annual solar irradiation of up to 1,432.8 kWh/m ² /year)		Region 2 (6 central provinces of Vietnam with annual solar irradiation of up to 1,676.1 kWh/m ² /year)		Region 3 (29 central highlands and southern provinces of Vietnam with annual solar irradiation of up to 1,910.3 kWh/m ² /year)	
	VND / kWh	US cent equivalent	VND / kWh	US cent equivalent	VND / kWh	US cent equivalent
Floating solar power projects	2,135	9.35	1,838	8.05	1,612	7.06
Ground-mounted solar power projects	2,095	9.18	1,802	7.89	1,583	6.94
Solar power projects with integrated storage system	N/A	N/A	N/A	N/A	2,052	8.99
Rooftop solar power projects	2,448	9.85	1,933	8.47	1,697	7.43

Draft new Solar Tariffs from 1 July 2020

Projects with COD from 1 July 2020 to 30 June 2021

Solar power types	Region 1 (see regions below) (28 northern provinces with annual solar irradiation of up to 1,432.8 kWh/m ² /year)		Region 2 (6 central provinces of Vietnam with annual solar irradiation of up to 1,676.1 kWh/m ² /year)		Region 3 (29 central highlands and southern provinces of Vietnam with annual solar irradiation of up to 1,910.3 kWh/m ² /year)	
	VND / kWh	US cent equivalent	VND / kWh	US cent equivalent	VND / kWh	US cent equivalent
Floating solar power projects	2,028	8.88	1,746	7.65	1,531	6.71
Ground-mounted solar power projects	1,990	8.72	1,712	7.50	1,504	6.59
Solar power projects with integrated storage system	N/A	N/A	N/A	N/A	1,949	8.54
Rooftop solar power projects	2,023	8.86	1,740	7.62	1,527	6.69

Draft new Solar Tariffs - Regions

- **Region 1:** comprising 28 northern provinces of Vietnam with annual solar irradiation of 1,225.6 – 1,432.8 kWh/m²/year or daily solar irradiation of 3.36 – 3.92 kWh/m²/day. Including: Ha Giang, Bac Kan, Cao Bang, Tuyen Quang, Thai Nguyen, Lao Cai, Yen Bai, Lang Son, Quang Ninh, Phu Tho, Vinh Phuc, Bac Giang, Hai Duong, Hoa Binh, Hanoi, Ha Nam, Bac Ninh, Hung Yen, Hai Phong, Ninh Binh, Thai Binh, Ha Tinh, Nam Dinh, Quang Binh, Thanh Hoa, Lai Chau, Nghe An and Son La.
- **Region 2:** comprising 6 central provinces of Vietnam with annual solar irradiation of 1,456 – 1,676.1 kWh/m²/year or daily solar irradiation of 3.99 – 4.59 kWh/m²/day. Including: Quang Tri, Dien Bien, Thua Thien Hue, Quang Nam, Da Nang and Quang Ngai.
- **Region 3:** comprising 29 central highlands and southern provinces of Vietnam with annual solar irradiation of 1,703.9 – 1,910.3 kWh/m²/year or daily solar irradiation of 4.67 – 5.23 kWh/m²/day. Including: Kon Tum, Ca Mau, Hau Giang, Binh Dinh, Phu Yen, Bac Lieu, Kien Giang, Soc Trang, Gia Lai, Can Tho, Vinh Long, Tra Vinh, Dak Lak, Khanh Hoa, Lam Dong, Ben Tre, Tien Giang, An Giang, Dak Nong, Ho Chi Minh City, Dong Nai, Dong Thap, Ba Ria – Vung Tau, Long An, Binh Duong, Binh Phuoc, Tay Ninh, Ninh Thuan and Binh Thuan.

Solar power financial incentives

- Preferential CIT:
 - Preferential corporate income tax (“CIT”) rate of 10% for fifteen (15) years, applied from the first year in which the project company has revenue from the new solar power project
 - CIT exemption for four (4) years and 50% tax reduction for the next nine (9) years applied from the first year in which the project company has taxable income from the solar power project.
- Duty Exemption:
 - Import duty exemption for imported goods used as fixed assets
 - Import duty exemption for imported machinery, equipment, supplies that cannot be domestically produced serving production of renewable energy

Solar power financial incentive (Cont.)

- Land and Water Surface:
 - For solar power projects, transmission lines and transformer stations for connecting to electricity grids
 - Land and water surface rent shall be exempted during the fundamental (capital) construction period. This exemption does not exceed three (3) years from the effective date of competent state authorities' decisions for land lease / allocation
 - After the above fundamental construction period, the land rents and water surface rents shall be exempted for three (3) years

Solar PPA

- **Non-negotiable PPA** and compulsory application for grid connected solar projects
- EVN has the obligation to buy all electricity generated from solar power projects. However, in the Solar PPA, EVN may stop buying electricity in certain circumstances beyond the reasonable control of the seller, without any compensation or payments to the seller/project developer.
- The purchaser must pay the seller only for the electricity that is received by the purchaser. The Solar PPA does not include any provision where the purchaser is unable to take the electricity produced.
- Dispute resolution: by litigation before Vietnamese courts or mediation/resolution at authorized energy state authorities of Vietnam. **No international arbitration is mentioned!**

Back up from the Government re. the PPA

- In the recent concluded wind PPAs, the Government subsidizes EVN 1 US cent/ kWh with regards to the whole power output sold to EVN
- This subsidy no longer exists in the Solar Decision.
- Solar PPA: no provision on any form of government guarantee to enhance the creditability of EVN
- No hint to make the solar PPA bankable.

The EVN

- PPA is required to follow a specific template, which is not bankable.
- The PPA template is unclear whether it is a “take or pay” agreement.
- No amendment of the PPA template is possible, except the supplementation to clarify the rights and obligations of the parties, **PROVIDED** that it does not change the basic contents of the PPA template.

Direct solar PPA

- The Government in practice does not support off-grid projects.
- The Government is working on a pilot program for direct PPA. However, it is still at the research and study stage.
- There is no final decisions on capacity, licensing process, participants, location, wheeling fee, and contractual terms for the piloted DPPA
- DPPA pilot would be preferably designed for 110 KV or 22 KV or more system (not 220 KV)
- ERAV is considering some models as below:
 - ❑ Physical DPPA: (a) onsite DPPA where the power plants to be constructed around the consumers, and / or (ii) offshore DPPA where power plants to be constructed anywhere.
 - ❑ Financial DPPA: this would be formed with competitive market for selling power.

But don't worry! We have the EU – Vietnam FTA and CPTPP

- EU – Vietnam FTA (“EVFTA”) and the Investment Protection Agreement (“IPA”):
 - When EVFTA is ratified, Vietnam will have more legal certainty than even Germany.
 - IPA implements **investor-to-state dispute settlement** (ISDS) mechanisms – investors can claim in case that an investor protection obligation has been breached
 - Domestic courts cannot question the legal validity of the decisions
- Comprehensive and Progressive Agreement for the Trans-Pacific Partnership (CPTPP):
 - TPP continues without the US, effective from 30 December 2018.
 - New TPP accounts for 12.9% of global GDP and 14.9% of global trade.

Non-recourse financing

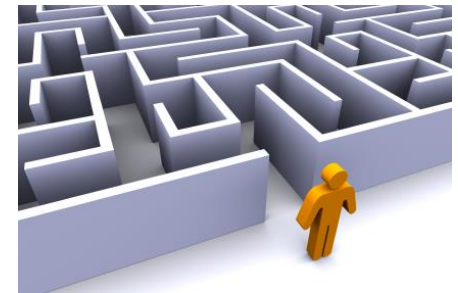
- **What is it?** The Project can be financed with a loan secured by a charge on specific assets or on the revenues generated from a specific project or assets.
- **How to obtain?**
- ✓ **Option 1:** To develop the project by way of entering into a BOT (Build-Operate-Transfer) contract with the Government. As it is the Government who will own the project at the end upon the expiration of the BOT contract, the BOT contract will be more bankable → the non-recourse/limited recourse financing arrangement can be achievable.
- ✓ **Option 2:** To seek guarantee from the Multilateral Investment Guarantee Agency (“MIGA”).
- ✓ **Option 3:** To cooperate with a State-owned commercial bank for its guarantee of the project and then, negotiate with lenders to eliminate all recourses that lenders may ask from the sponsors and/or the borrowers.

Investment guideline for foreign investors



Market access and Forms of investment

- No foreign ownership restriction
- Investment forms:
 - ✓ A wholly-owned foreign enterprise
 - ✓ A joint venture company between a foreign investor and domestic investor
 - ✓ Investment pursuant to the BOT legal framework
 - ✓ Through the purchase of shares in either an EVN subsidiary being or having been equitized or a private IPP holding power assets.



WTO ANALYSIS OF LIBERALIZATION OF MARKET ACCESS

Country	Limitation of market access*	Country	Limitation of market access*
Malaysia	medium	Myanmar	high
Indonesia	medium	Cambodia	medium
Philippines	medium	Laos	medium
Singapore	low	India	high
Thailand	medium	China	medium
Brunei	high	Vietnam	low

* Typical restrictions: number of opened sectors, JV requirement, limits on foreign-owned shares, permission requirement

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Financing options for power projects

- Government investment funding and preferential policies
- Official Development Assistance (ODA)
- Loan from commercial banks or financial institutions
- Clean Development Mechanism (CDM)
- Public Private Partnership (PPP)

BOT – BEST INVESTMENT FORM

- Government's Decree No. 63/2018/ND-CP on Public-Private Partnership: making projects more bankable
- Easier to negotiate more favorable electricity rates.
- Easier to obtain more government guarantees, especially in terms of EVN's obligations to purchase all electricity from the project.
- More fiscal and financial incentives.
- Precedent large-scaled BOT power projects in Vietnam: Phu My, Vung Ang, Mong Duong 2

INVESTMENT INCENTIVES



- **Subject to the decision of the local People's Committee where the project is located**
- **Land: land use fee exemption**
- **CIT 10%**
 - 15 years for new enterprises investing in power plant projects
 - tax exemptions within 4 years and tax reduction by 50% in the next 9 years.
- **Import duty exemption**
 - on goods imported to create fixed assets of the projects; components, materials and semi-finished products which cannot be produced inland for the project's operation.

Project planning



- Investors has to obtain prior agreement of EVN on power purchase prior to licensing procedure.
- Commitment of banks or credit institutions on financing the project must be obtained prior to issuance of Investment Registration Certificate .
- In-principle approval of the local People’s Committee is required prior to issuance of Investment Registration Certificate depending on the project size
- Obtain a power generation permit from the competent State authorities in order to conduct power generation operations in Vietnam
- Term of the permit: maximum 20 years for large power plants with particularly important meaning on economy, society, national defense and security as per the list approved by the Prime Minister; and 10 years for other power plants projects.
- The permit cannot be renewed but the investor may apply for a new one within 60 days prior to the expiry date of the current permit.

Project licensing

- **Step 1:** The investor obtains approval from the competent authority [e.g., Prime Minister, MOIT] approving the power plant as part of the power development plan (if required).
- **Step 2:** The investor obtains in-principle approval from the competent People's Committee
- **Step 3:** Application for issuance of the Investment Registration Certificate and the Enterprise Registration Certificate
- **Step 4:** Preparation of construction / operations of the power plant (for example, acquiring land area, site clearance, preparation, land investigation, conducting environmental assessment)
- **Step 5:** The project company to obtain necessary permits (*e.g.* electricity generating permit) and relevant agreements (*e.g.* PPA) for its and the power plant's operation.
- **Step 6:** Construction of the power plant and operation



RECOMMENDATIONS FOR INVESTORS

- Public private partnerships (e.g. - BOT) should be the first option.
- Due care on negotiations of the PPA and grid connection agreement with EVN
- Electricity selling in off-grid areas can be a good choice
- Sound financing structure, good business model and great legal assistance are keys to success.
- Accurate prediction of where the market is heading to, in the context of Vietnam's critical power shortage, should be considered.
- More pressure on the government to adequately address key issues on tariff increase, demonopolization of the power market and government guarantee.
- Vietnam's market is extremely in need of financing and EPC capability. There are rooms for cost-effective and high quality EPC contractors and resourceful lenders.
- In many cases, you can “test the water” with a small power plant project.

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WHEREVER YOU ARE - BE ALL THERE

Jim Elliot

DUANE MORRIS VIETNAM LLC

Thank you very much!

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