

International Conference

Vietnam Renewable Energy: Challenges and Practical Solutions

Thursday, August 23rd, 2018

Diamond A, Sofitel Saigon Plaza, 17 Le Duan, District 1, HCMC, Vietnam



Supporting Organisations

Table of Contents

1. WELCOME MESSAGE	Page 3
2. CONFERENCE PROGRAM	Page 4
3. SPEAKERS & PANELLISTS	Page 5 – 6
4. PRESENTATIONS	Page 7
4.1. Review of RE Implementation in Vietnam and Key Issues	Page 9 – 17
Presented by Mr. Le Xuan Dong, CFA, Director, Business Information Services, StoxPlus	
4.2. Financing solar projects in Vietnam: key issues and recommendations	Page 19 – 21
Presented by Mr. Oliver Behrend, Principal Investment Officer, International Finance Corporation (IFC)	
5. ABOUT STOXPLUS	Page 23 – 25



Welcome Message

We are pleased to welcome you to the International conference titled: “Vietnam Renewable Energy: Challenges and Practical Solutions”, taking place on 23rd August 2018 at Sofitel Saigon Plaza in Ho Chi Minh City, Vietnam.

Background

On 11th April 2017, the Prime Minister issued Decision No.11/2017/QĐ-TTg on the mechanism for encouragement of the development of solar power projects in Vietnam and on 12th September 2017, the Ministry of Industry and Trade (MoIT) issued Circular No. 16/2017/TT-BCT on Solar Power Project Development and Standardized Power Purchase Agreement for Solar Power Projects, which includes a final template Power Purchase Agreement (PPA) and the FiT rate of 9.35 UScents per kWh, an average of 9 projects in power generation and distribution were registered per month. Undoubtedly, foreign and local investors were excited about renewable energy in Vietnam, which is expected to grow at 23.2% annually during 2020 - 2030.

Despite the rush, out of 24 GW of renewables’ registered capacity from our survey, only 19% made it to construction stage and 8% are in operations. Meanwhile, most projects are still at the preparation stages. Various issues relating to licensing, approval process, the structure of a joint development agreement with a local project owner, and financing options have been raised. However, there have been a lack of dialogue and a forum to address those issues.

Why did we organize this event?

As a leading market research & business information provider in Vietnam, with hands-on experience in supporting RE project implementation, StoxPlus, in collaboration with EuroCham, is organising an International Conference on the topic "Vietnam Renewable Energy: Challenges and Practical Solutions". The conference will provide a platform to share not only market insights and lessons learnt from project implementation experience, but also key issues and risks on the aspects of project development, financing, M&A and equity investments.

In organising this event, StoxPlus and EuroCham are proud to have the support from IFC (member of the World Bank Group), Auscham, Cancham, Hongkong Business Association Vietnam, Incham, Kocham, Singapore Business Group HCMC and Thailand Business Association.

Wish you all an intellectually stimulating and productive conference.

On behalf of the organizers,

Nguyen Quang Thuan
Chief Executive Officer
StoxPlus JSC.

Conference Programme

14:00 – 14:30	Registration
14:30 – 14:38	Welcome speech by EuroCham <i>Mr. Stefano Pellegrino, General Secretary, EuroCham Vietnam</i>
14:38 – 14:45	Opening remarks by StoxPlus Corporation <i>Mr. Nguyen Quang Thuan, CEO, StoxPlus Corporation</i>
14:45 – 15:05	Presentation: “Review of Renewable Energy Implementation in Vietnam and Key Issues” <i>Presented by Mr. Le Xuan Dong, CFA – Director, Business Information Services, StoxPlus</i> <ul style="list-style-type: none">• Status of RE projects in VN• Current challenges and suggested mitigation measures• The synergy between local and foreign partners• Common structures of joint RE project between local and foreign partners
15:05 – 15:25	Presentation: “Financing solar projects in Vietnam: key issues and recommendations” <i>Presented by Mr. Oliver Behrend, Principal Investment Officer, International Finance Corporation (IFC)</i> <ul style="list-style-type: none">• Attracting international capital to the local capital market• The impact on solar PV tariffs from a well-designed procurement process and a bankable PPA
15:25 – 15:55	Tea break & Networking
15:55 – 16:40	Panel discussion <i>Moderator:</i> <ul style="list-style-type: none">• Ms. Vu My Dung, Senior Market Analyst, Business Information Services, StoxPlus <i>Panelists:</i> <ul style="list-style-type: none">• Mr. Nguyen Ninh Hai, Deputy Director of New and Renewable Energy Department, Electricity and Renewable Energy Authority, Ministry of Industry and Trade (MOIT)• Mr. Oliver Behrend, Principal Investment Officer, International Finance Corporation (IFC)• Mr. Pham Minh Tuan, Deputy General Director, Chief Operating Officer, Bamboo Capital Group (BCG)• Mr. Dang Duong Anh, Managing Partner, VILAF• Mr. Le Xuan Dong, CFA, Director, Business Information Services, StoxPlus <i>Main themes:</i> <ul style="list-style-type: none">• How to overcome obstacles in financing RE projects in Vietnam?• How could foreign investors participate in RE sector in Vietnam and applicable investment structure?• Key risks in investing in RE in Vietnam?• What are the issues in developing and operating a RE project in Vietnam?• Experience in structuring an RE transaction from a legal firm• How will Vietnam’s RE policies be improved to further support and supervise the sector’s development?
16:40 – 16:55	Q&A
16:55 – 17:00	Summarising and Closing remarks <i>Mr. Stefano Pellegrino, General Secretary, EuroCham Vietnam</i>

Speakers' Profiles (1)



Mr. Nguyen Ninh Hai
Deputy Director of New and Renewable Energy Department
Electricity and Renewable Energy Authority (MoIT)

Mr. Nguyen Ninh Hai has been working as MOIT's officer in renewable energy field since 2008. He has undertaken to draft promoting mechanisms and policies for elevating development of renewable energies in Vietnam, including FIT for wind power, biomass, and municipal solid waste to energy and solar, National Strategy on promoting development of renewable energy in Vietnam, and National Master Plan on Renewable Energy in Vietnam. Mr. Hai is also Vietnam focal point of Renewable Energy Subsector Network under ASEAN Energy Cooperation.



Mr. Oliver Behrend
Principal Investment Officer
IFC - International Finance Corporation

Oliver Behrend is a Principal Investment Officer at IFC, responsible for IFC's infrastructure investments in the Mekong region. Prior to IFC, Oliver developed thermal power plants for EMIC, a JV of E.ON and Masdar, focusing on Middle East & North Africa, Sub-Saharan Africa and South-East Asia. Oliver started his career in the Royal Dutch / Shell group, where he worked on European upstream gas and oil developments and on commercial gas transactions before heading Shell Renewables in Asia. A German national, Oliver holds a Masters degree in Physics from the Swiss Institute of Technology and a Ph.D. in Physics from the University of Edinburgh.



Mr. Pham Minh Tuan
Deputy General Director, Chief Operating Officer
Bamboo Capital Group (BCG)

Mr Pham Minh Tuan was appointed as Deputy General Director, Chief Operating Officer at Bamboo Capital Group ("BCG") in August 2017. In this role, he is responsible for managing day to day operations of BCG. Tuan is also responsible for investor relations, involves in growth strategies and value realizations of BCG. Tuan has oversight of BCG's investing activity in the renewable energy and real estate.

Tuan is a value-oriented professional with expertise on financial planning and strategies. Tuan focuses on promoting strong and flexible strategic thinking to enhance profitability and create solutions. Prior to joining BCG, Tuan worked as a Senior Financial Controller for one of the largest full service brokerage in Canada, where he specialized in financial performance management and financial reporting, assisting with profitability analysis, compensation analysis, and competitive analysis. Prior to that, Tuan worked at Citibank Canada where he was Vice President of Regulatory reporting. Formerly, he worked for PwC in both Canada and Vietnam earlier in his career.

Tuan holds a Master of Business in Banking and Finance from Monash University, Australia. Tuan is a member of the Association of Chartered Certified Accountants, United Kingdom (ACCA-UK).

Speakers' Profiles (2)



Mr. Dang Duong Anh
Managing Partner
VILAF

To many clients and peers, Dang Duong Anh is one of the most reliable and result-oriented Vietnamese lawyers. Dang Duong Anh's broad experience covers foreign direct investment, corporate and M&A, infrastructure & energy projects, project finance, tax, real estate and property, mining, automobile and telecommunications.

His highlighted M&A transactions include advising Siam Cement Group in acquiring group of cement production companies valued at US\$440 million and in acquiring Prime Group valued at about US\$240 million; advising Showa Aluminum Can Corporation in acquiring 90% share capital in Hanacans, valued at about US\$110 million; advising J-Power in acquiring in and divesting later from Nhon Trach 2 Power Plant; advising Bao Minh Company and SCIC in selling entire equity capital in Bao Minh-CMG to Daiichi Life Insurance, acquisition of a large automobile manufacturer in Hanoi, and other large-scale M&A transactions. His highlighted transactions in infrastructure and project finances include Vinh Tan 1 BOT project which won "Project Finance Deal for Asia 2016" awarded by IFLR, Phu My 3 BOT power project, Kien Luong 1 BOO power project, Ban Phuc nickel mining financing, Thu Duc BOT water project, Oxbow and Enron's power plants and a large telecommunications project in Hanoi.



Mr. Le Xuan Dong, CFA
Director, Business Information Services
StoxPlus Corporation

Mr. Dong is a Director of StoxPlus where he is responsible for envisioning, planning, developing, and managing Business Information Services (BiinForm) division. Previously, Dong worked for over 10 years as a Senior Investment Manager at BIDV – Vietnam Partners Investment Management (BVIM) with AUM of USD98 million, in charge of sourcing, performing due diligence and valuation of, structuring, executing equity investments for two private equity funds, post-investment monitoring, planning and implementing exit strategies. Prior to BVIM, he was an Audit Manager for 8 years at Deloitte Vietnam.

Dong holds a Master of International Accounting degree from Swinburne University of Technology (Australia) and is a CFA Charter holder.



Ms. Vu My Dung
Senior Market Analyst, Business Information Services
StoxPlus Corporation

Ms. Dung Vu is a Senior Market Analyst responsible for Financial Services and Renewable Energy sectors at BiinForm, StoxPlus. Before joining StoxPlus, Dung has worked for four years in the energy sector, with IHS Markit Global as a Downstream Consultant where she supported refinery M&A, valuation, and market entry projects, and with PetroVietnam Exploration and Production Corporation as an Upstream Investment and Business Development Executive. Now based in Hanoi, Dung has had international working experience in Malaysia, the US, and Europe.

Presentations

Presentation 1

Review of Renewable Energy Implementation in Vietnam and Key Issues

*Presented by Mr. Le Xuan Dong, CFA, Director,
Business Information Services, StoxPlus*

Page 9 – 17

Presentation 2

Financing solar projects in Vietnam: key issues and recommendations

*Presented by Mr. Oliver Behrend, Principal Investment Officer,
International Finance Corporation (IFC)*

Page 19 – 21



Biinform
Vietnam Business Insights



STOXPLUS

Review of Renewable Energy Implementation in Vietnam

Within Vietnam Renewable Energy Conference: Challenges and Practical Solutions

HCMC 23 August 2018

Presented by Mr. Le Xuan Dong, CFA
Director, BiinForm
StoxPlus JSC

1

Status of Renewable Energy Projects

2

Key Issues and Implications

3

Local and Foreign Partners Synergy

RE project status

RE projects are not progressing as fast as planned in the Master Plan VII - only a few solar and wind projects are operational while many are stuck at the pre-investment and pre-construction stages

- Solar energy



- Wind energy



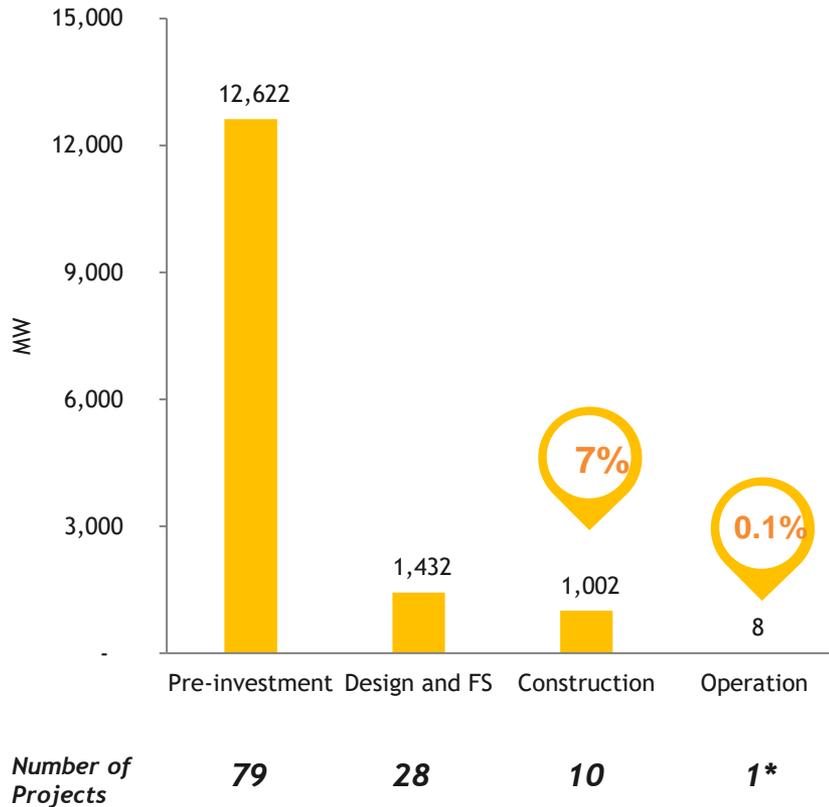
- Biomass energy



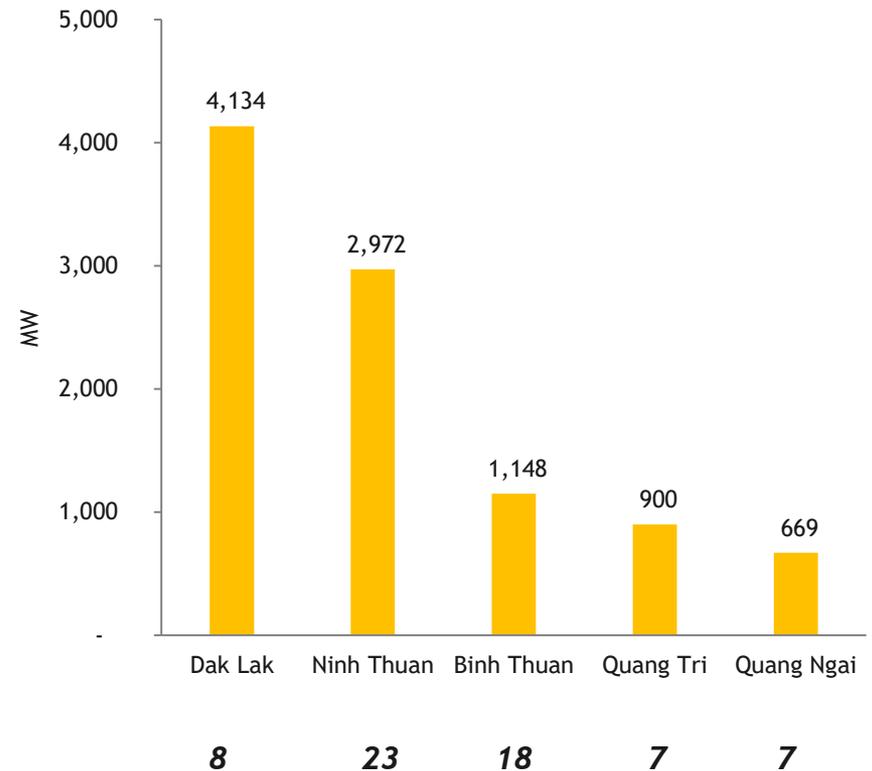


While there are over 15GW of registered solar capacity in our survey, most of them are still on paper

Solar energy capacity by project status, July 2018



Top 5 provinces with highest planned solar energy capacity



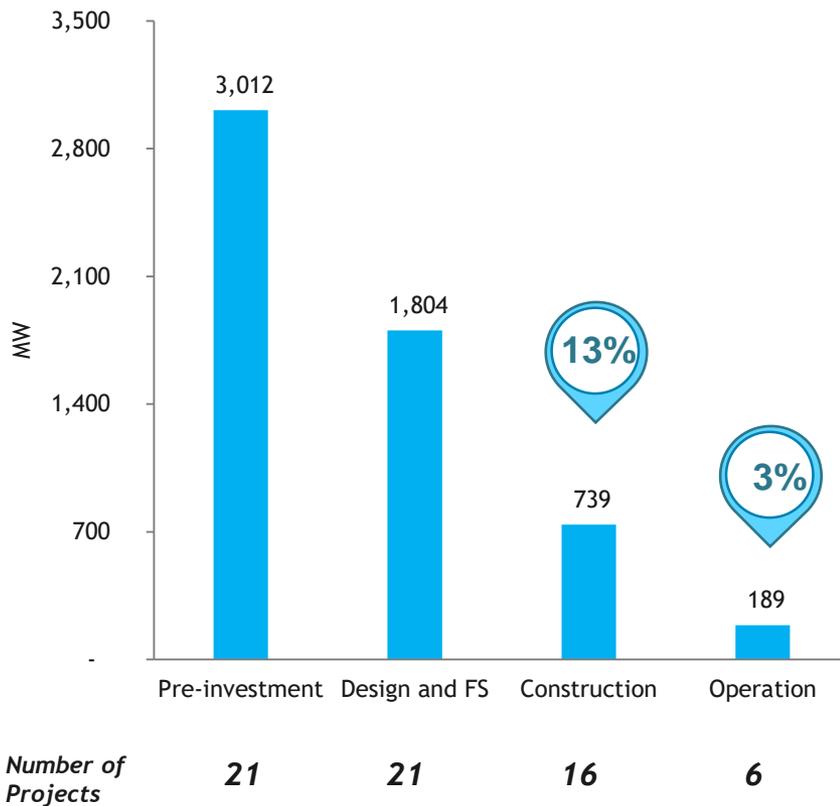
Source: StoxPlus Survey

Note: * Plus numerous small-scale rooftop projects

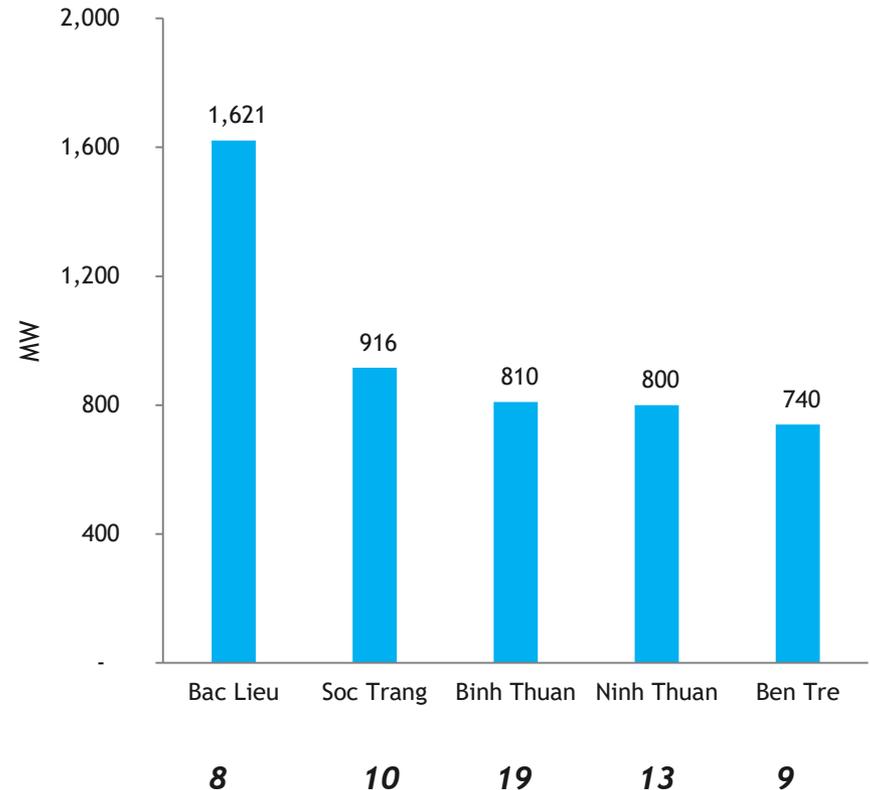


Many wind power projects have not reached the construction phase with the current low FiT

Wind energy capacity by project status by July 2018



Top 5 provinces with highest planned wind energy capacity

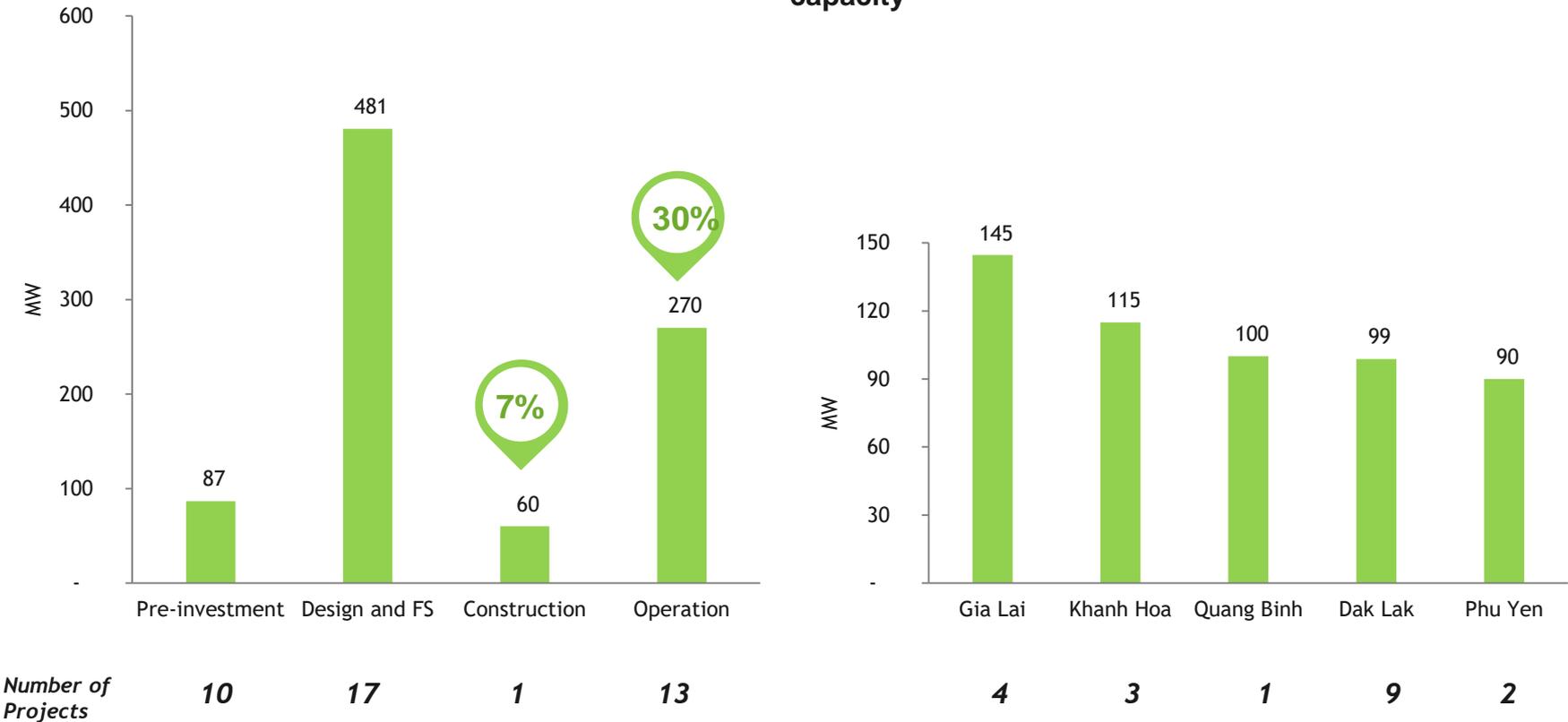


Source: StoxPlus Survey



Biomass utilizes cheap feedstocks available in delta regions of Vietnam, including bagasse and other agricultural by-products, hence there are more biomass projects in construction and in operations

Biomass energy capacity by project status by July 2018 **Top 5 provinces with highest planned biomass energy capacity**



Source: StoxPlus Survey

Agenda

1

Status of Renewable Energy Projects

2

Key Issues and Implications

3

Local and Foreign Partners Synergy

Key Issues and Implications

Because of RE being in nascent stage, developers encounter challenges from many sides

- Legal risk



-
- Commercial risk



-
- Counter party risk



-
- Operational risk



-
- Financing risk





The main legal risk comes from the PPA, which foreign lenders has deemed unbankable due to its non-negotiability and difficulty in enforcement

IMPLICATIONS



NON-NEGOTIABLE TERMS

- The PPA terms are fixed and non-negotiable, while parties may only add explanatory terms



SEIZING COLLATERAL

- International financiers are unable to take land assets and mortgage in Vietnam as securities due to current legal structure



NO INTERNATIONAL ARBITRATION

- No stabilization clause against unfavorable change of law
- Dispute resolution is at Electricity and Renewable Energy Authority, and no international arbitration is mentioned



CONNECTING TO GRID

- The developers must bear the costs and risks of connecting the plant to the transmission grid

International financiers - foreign banks cannot take up the risks and give out loans to developers based on the current PPA

International banks would face difficulties seizing collateral assets should the developer default on the loans

Foreign stakeholders are not protected against political & tax changes and do not have a neutral forum for dispute resolution

The costs and risks to connect to the grid might be significant, especially in remote areas or when connection line run through land owned by many owners

MARKET PRACTICES

- Most of the terms are already fixed and cannot be changed
- In order to raise debt capital for their projects, the local developers could utilize corporate financing structure with local banks rather than project financing as discussed in slide 14.



Even if the PPA is signed, the fixed low FiT could have impact on the profitability and payback period of the project



FiT NOT COMPETITIVE

- Compared to its neighbors, Vietnam's FiT is much lower than that in other peer countries
- At the same time, EVN is making a loss by paying 9.35 US cents/1 kWh of solar, while retail electricity prices are approximately 7.54 US cents/ kWh



FIXED FiT

- Current FiT is fixed for 20 years
- Does not take into account inflation risk, exchange rate risk as well as incremental operating and maintenance expenses

IMPLICATIONS

After the initial rush to invest in wind energy, project developers have realized that the generated income would not guarantee the project's profitability. Could this be a similar scenario for solar power developers?

MARKET PRACTICES

- IRR ranges between 10-15% or less
- Payback Period: averaging 12 years



There remains risks where offtakers / electricity purchaser fails to fulfill its off-taking and payment as planned

IMPLICATIONS



FULFILLMENT RISK

- The offtaker is **not required** to purchase all electricity produced, but only electricity received (e.g. when the gridline has a temporary problem or is under installment/recovery after an incident)



CREDIT RISK OF SOLE PURCHASER

- Vietnam government is trying to reduce its public debt burden and stops issuing guarantees to back up state owned enterprises
- EVN's weak creditworthiness, and its lack of credit rating increases the developers' exposure to credit risks.

There is no government guarantee that developers would be indemnified for all the power output that has not been off-taken or if the purchaser becomes insolvent.

MARKET PRACTICES

- The market players have to accommodate these issues with EVN being the sole purchaser as of now.



Local developers also face operational risks such as project delays, overloading the transmission lines in rural area, and procurement of low quality equipment

IMPLICATIONS



PROJECT DELAYS

- Processes of licensing and site clearance are lengthy and complex, which could risk project delays and miss the deadline



LOW QUALITY EQUIPMENT

- Solar panels vary in quality, and inexperienced developers may choose lower-quality panels requiring more investment in the long term



OVERLOAD TRANSMISSION LINES

- Ninh Thuan and other rural areas reported over 2GW of registered capacity, which could overload the local transmission line

Projects are not guaranteed to complete by the deadline, which is important especially for solar energy projects

Equipment does not perform as expected when installed, incurring additional costs of repairment or replacement

The transmission lines could offtake only a part of the energy output, so that EVN could not pay for all energy produced or choose to curtail the RE electricity offtake to preserve the transmission lines

MARKET PRACTICES

- Project management and technical expertise issues could be mitigated thru cooperation with an experienced foreign investors.
- In terms of offtake infrastructure, most players have to accept the current available transmission lines which are expected to be improved in the future.



Current undercapitalization issue and low long-term sources of funding makes it difficult to borrow from domestic lenders in the long term



Undercapitalization

8% CAR per Basel II requirement



Lack of long-term funds

40% Short-term deposits for medium & long-term loans starting 2019



Lessening liquidity

80-90% maximum LDR



While domestic lenders could provide capital in the short term for small projects, with the current constraints, foreign capital is needed in the long term for larger capacity.

Domestic Lenders

- Domestic banks seem to have a higher **risk appetite**, providing medium-& long-term loans for RE projects
- Loans are in the form of **corporate financing through parent company**
- **Collateral** includes assets generated from the project and parent companies' corporate guarantees

Foreign Lenders

- Foreign banks have lower risk appetite and more conservatism regarding the **PPA's unbankability**
- Loans are only given via the form of **foreign shareholders' loans or financing the EPC contracts with an L/C issued by the developer's local banks.**
- Collateral includes **Government guarantee or Foreign shareholders' corporate guarantee.**

Agenda

1

Status of Renewable Energy Projects

2

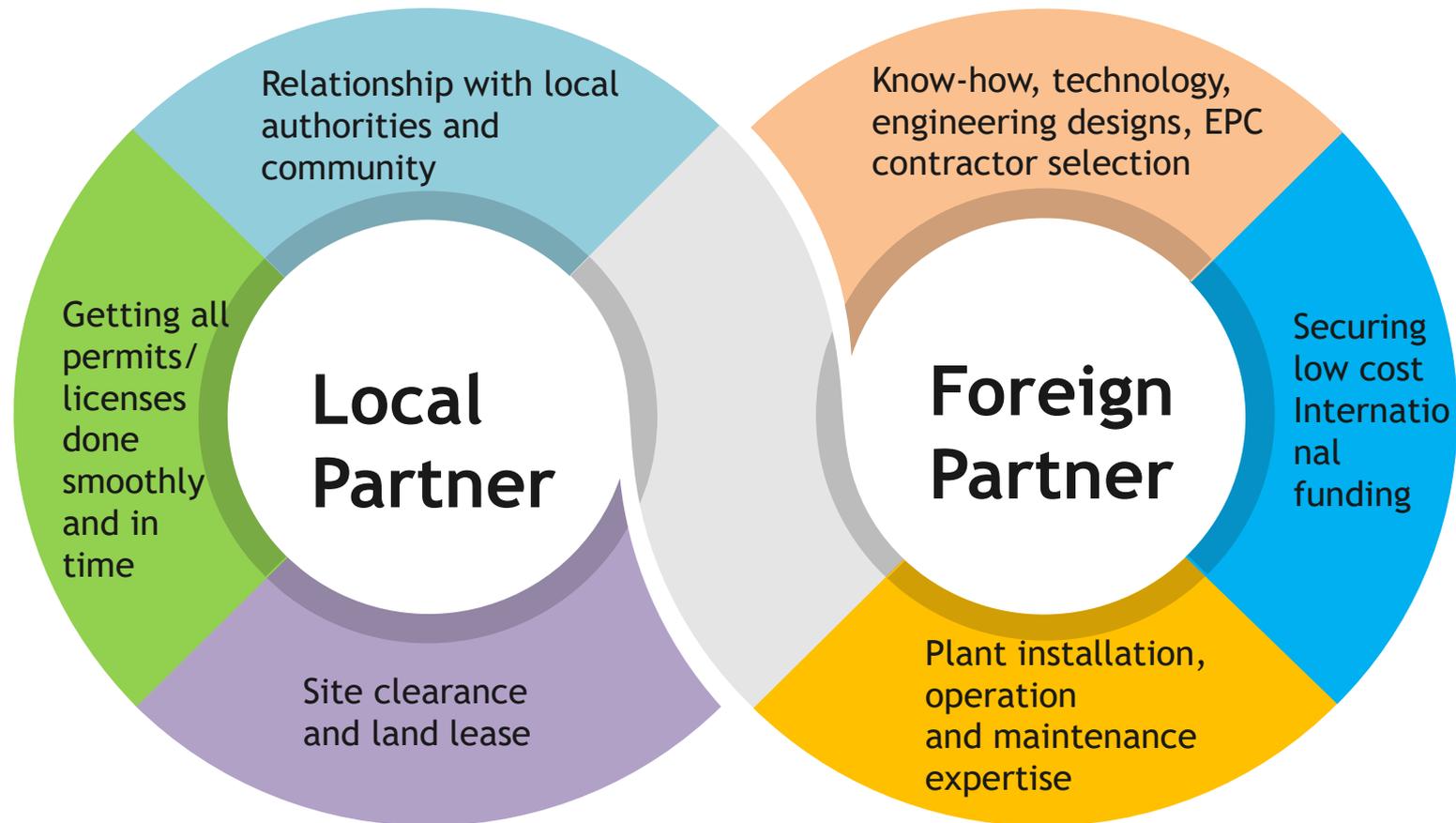
Key Issues and Implications

3

Local and Foreign Partners Synergy

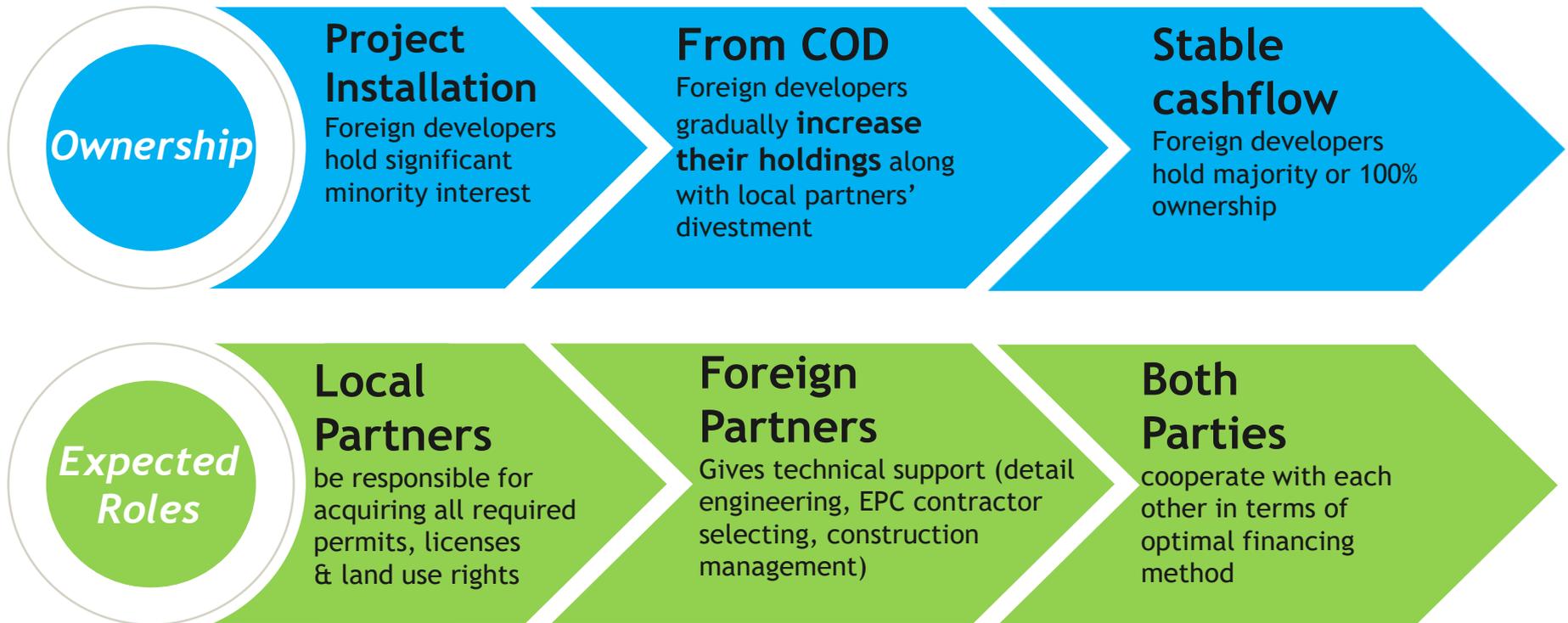
Partnership synergy

Significant hands-on assistance from foreign partner is expected, including project management and technical expertise, while local developers provide relationship with local authority and get licenses



Common deal structure

Common deal structure includes the changing of ownership and legal entity with each party building on its unique strengths



Thank you!

FINANCING SOLAR PROJECTS IN VIETNAM – SOME OBSERVATIONS

Vietnam Renewable Energy Conference: "Challenges and Practical Solutions" – HCMC 23 August 2018



Creating Markets, Creating Opportunities

Oliver Behrend
Principal Investment Officer

A lot of projects... but a low “conversion rate”

260+ PV solar projects submitted for inclusion in Master Plan

7,000MW+ approved, of which
5,000MW+ for the period to 2020

1,500MW+ have obtained grid interconnection

1,000MW+ are negotiating a PPA (??)

How many have secured financing?

How many projects will reach COD by June 2020?

What are the main reasons for this low conversion rate?

Real Estate plays rather than Renewable Energy plays

Lack of technical experience in some local developers

Complicated approval / permitting process

Lack of sufficient EPC capacity for more than 1000MW+

Lack of financing

How are projects being financed?

Local bank debt

Essentially recourse debt / name lending with existing corporate assets as implicit or explicit collateral

- Limited by the size of existing corporate balance sheets and exposure limits of local banks to the power sector
- Local banks may not appreciate all the risks -> NPL risk
- Expensive

International debt - 1

Traditional non-recourse debt

- Not *generally* available due to well-known PPA issues

International debt - 2

Arm-twisting by sponsors of relationship banks to provide non-recourse debt

- Limited availability for risky (for the banks!) debt
- Not a lot of sponsors have the clout to do the “arm-twisting”

Local / International debt

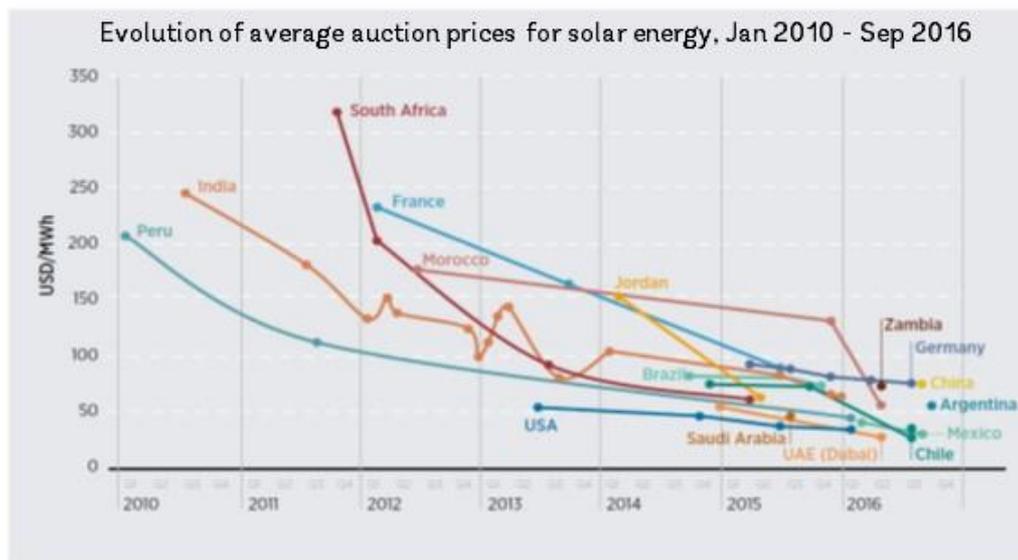
International banks provide liquidity, local banks provide guarantee

- Complicated structure requiring considerable structuring
- “Risk arbitrage”
- Limited availability

Maybe enough finance available for 1,000-2,000MW
What about the next 10GW to 2030?

Is there another way?

1. Competitive procurement



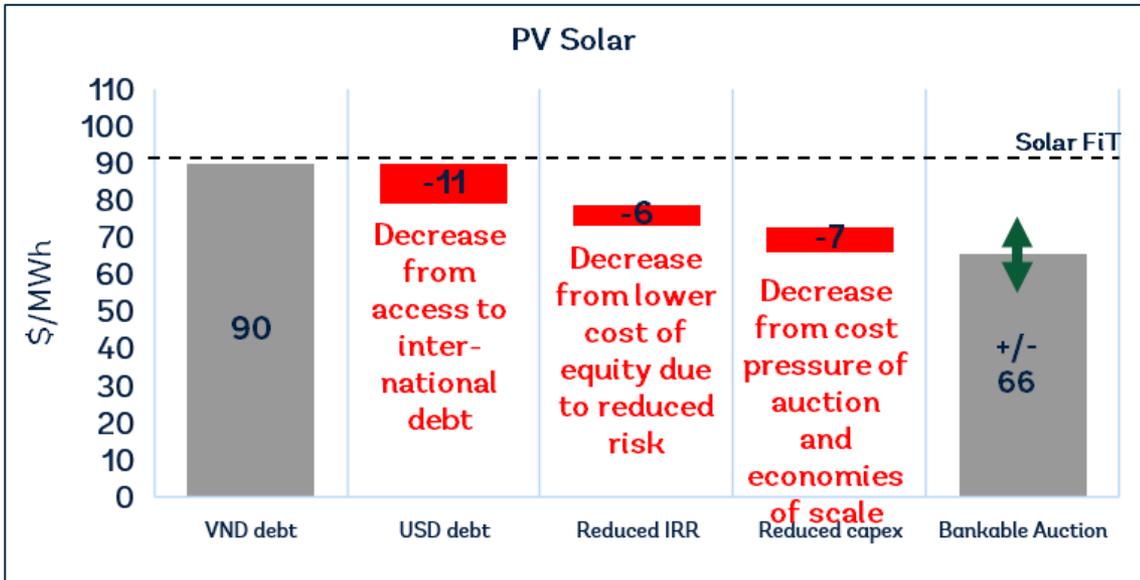
1. **Technology**: technology costs have fallen significantly, especially in PV solar
2. **Expertise**: emergence of large, sophisticated market players has led to reduced risks and economies of scale
3. **Capital**: the reduction of technology and execution risk has led to a decrease of the cost of capital and an increase in the availability of capital for Solar
4. **Procurement**: the increasing trend to procure solar via competitive auctions has led to decreased costs

2. International finance

- VND debt at 9-10% variable for 10-14 years, with recourse
- USD debt at 7-8% fixed for 15-18 years, non-recourse

Why does it matter for Vietnam?

1. Lower cost of power



Indicative flat nominal cost of energy and potential savings from introduction of an auction with internationally bankable documentation

2. Financing 12GW of solar and 6GW of wind required international debt and equity capital

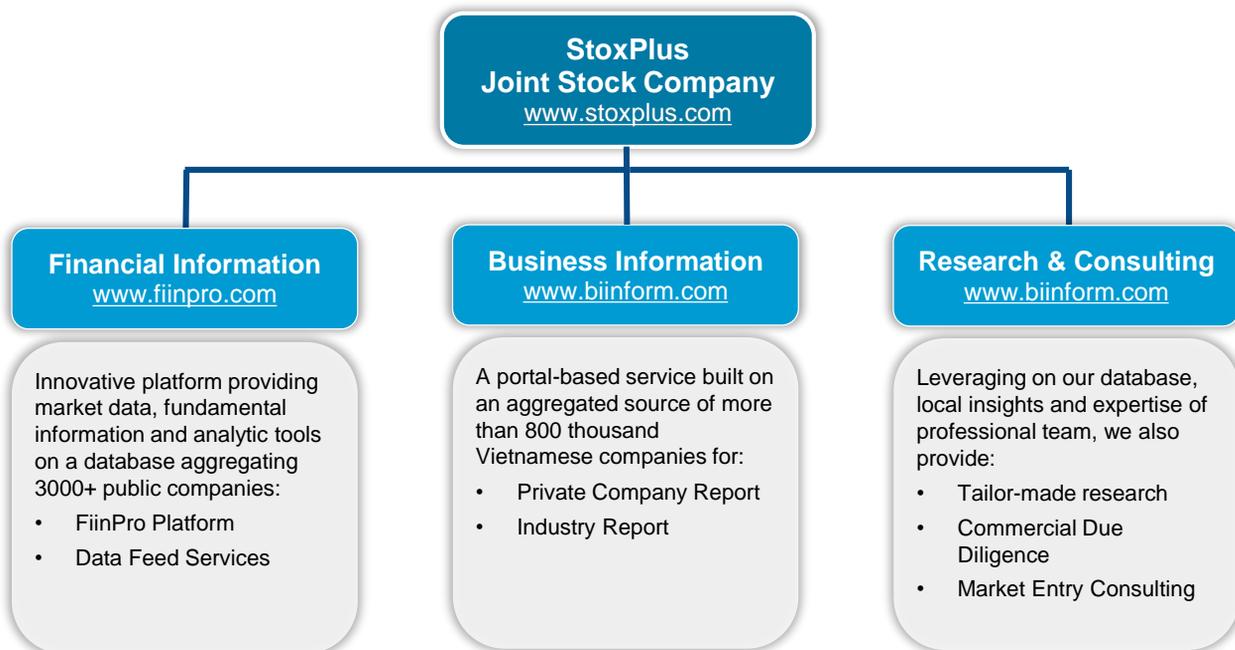
Via participation in syndications, this will also help local banks until they don't need international partners anymore

About StoxPlus



- Date of incorporation: March 11, 2008
- Number of staff: 100 (as of April 2018) including Data Analysts, Researchers, Product Developers.
- Two offices: Hanoi Head Office and HCMC Office

Our Strategic Partner and Shareholders



Contact us

Head Office

5th Floor, Anh Minh Building, 36 Hoang Cau, O Cho Dua, Dong Da, Hanoi, Vietnam

Tel: (84-24) 3562 6962 - Fax: (84-24) 3562 5055

Email: stoxplus@stoxplus.com

Ho Chi Minh City Branch

3rd Floor, Profomilk Plaza Bldg, 51-53 Vo Van Tan, Ward 6, District 3, Ho Chi Minh, Vietnam

Tel: (84-28) 3933 3586

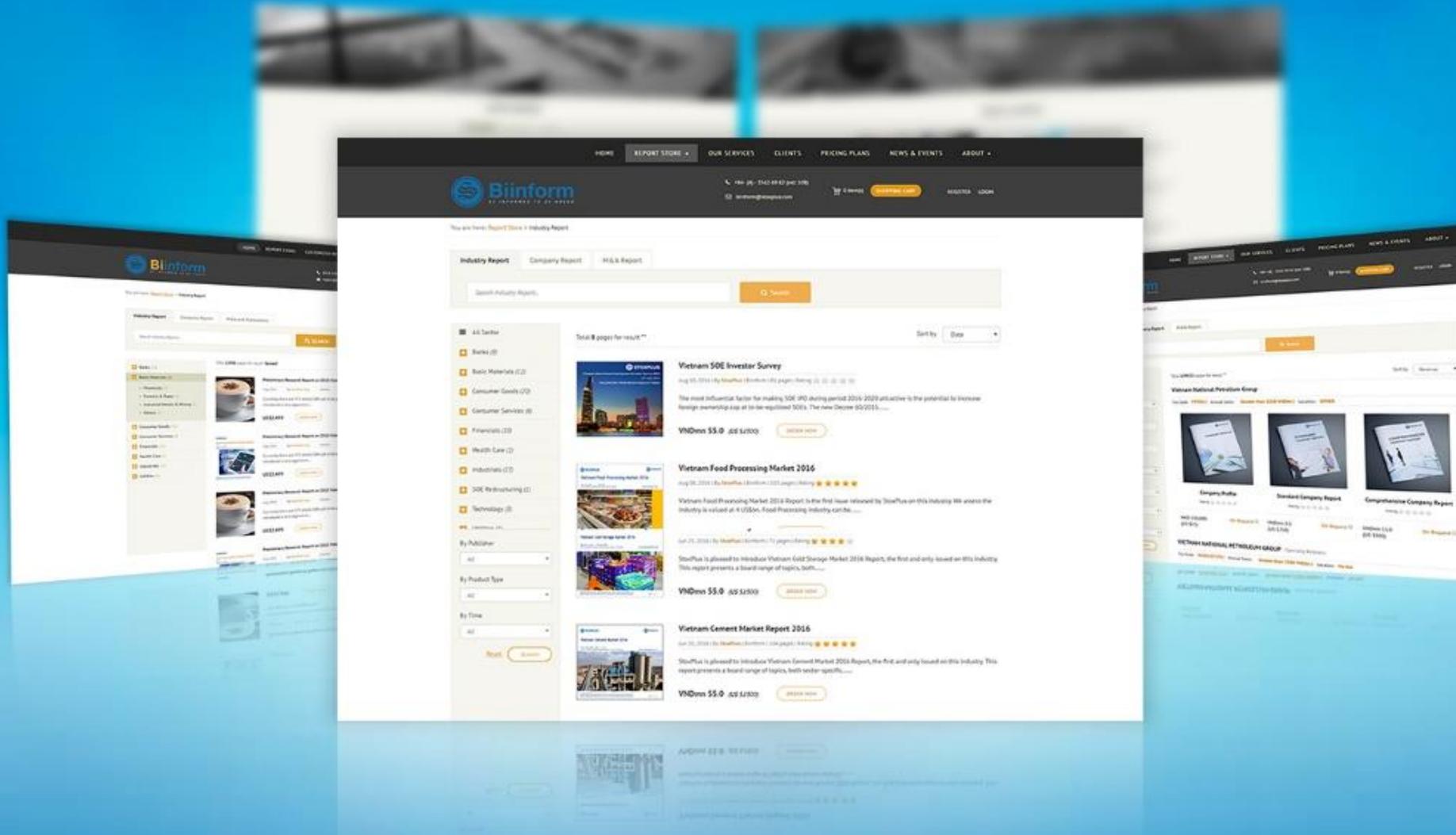
Email: stoxplus@stoxplus.com

FIINPRO PLATFORM

www.fiinpro.com



Biinform® Portal



Our BiinForm Services

WWW.BIIFORM.COM: ONE-STOP-SHOP FOR ALL PREMIUM REPORTS

COMPANY REPORTS

Company reports with credit and financial information. Available for sale via portal: www.biinform.com

INDUSTRY REPORTS

In-depth industry reports of all key sectors of Vietnam. Available for sale via portal: www.biinform.com

CUSTOMIZED RESEARCH

More in-depth research tailored to clients' specific segments of interest with insights input by industry experts.

MARKET ENTRY ADVISORY

Actionable recommendation for clients' entry strategies, including advisory on all stages:

- Market assessment
- Business Intelligence
- Investment Screening
- Trade Connection

Our Focused Sectors

OUR SECTOR EXPERTISE AND PARTICIPATION OF INDUSTRY EXPERTS ENSURE INFORMATION COMPREHENSIVENESS AND IN-DEPTH ANALYSIS



Banking



Consumer Finance



Bank Cards & E-payment



Energy



Cement



Steel



Plastic Packaging



Flexible Packaging



Logistics



Agribusiness



Pharmaceuticals



Healthcare Services