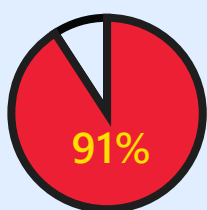


# SOLAR EXPERT SURVEY VIETNAM 2016 HIGHLIGHTS

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## Vietnam has Great Potential



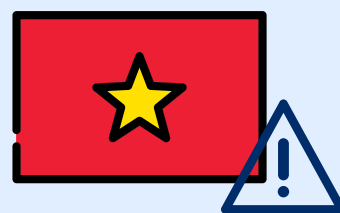
91% Vietnam's Solar Irradiation was considered "Good" or "Very good".

## ASEAN is a Competitive Region



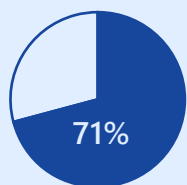
Solar power development is a competitive market in South East Asia and South Asia.

## Vietnam has Significant Risks



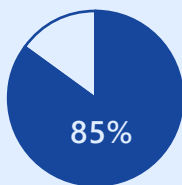
Regulatory impediments, low profitability, power buyer credit risk corruption are major concerns.

## Vietnam Solar Energy needs more Private Sector Involvement



### Public Sector Dominance

71% agreed that Public Sector sponsored projects can crowd out the private sector.



### Private Sector is more Cost Efficient

85% think public sector projects are more expensive to develop than private sector projects.

## Vietnam Tariffs System needs to be Rationlised



### GRID

Increase the Feed-In Tariff from 14 USD cents/kWh to 17USD cents/kWh.



### OFF-GRID

#### SUGGESTED POWER TARIFFS:

- Commercial Rooftop Solar: 15.5 to 20 USD cents/kW
- Residential Rooftop: 15 to 22 USD cents/kWh.

# SOLAR EXPERT SURVEY VIETNAM 2016 RESULTS

The European Chamber of Commerce in Vietnam ("EuroCham") and its Green Growth Sector Committee ("GGSC") are pleased to share the results of the Solar Expert Survey, conducted in May 2016 among 21 solar experts across Southeast Asia. The group of respondents included solar developers, investors, contractors, consultants, lawyers, NGOs and universities, knowledgeable of the Vietnam energy market and solar energy.

This survey aimed to collect the experts' opinion on questions which relate to the Solar Power Draft Decision, which was presented at the Solar Power Consultation Meeting on 9th November, 2015 in Hanoi.

We believe that the Draft Decision calls for a much needed discussion around its related topics. As per our mission towards our members, EuroCham and the GGSC intend remain a trusted contributor to a constructive dialogue with the Vietnamese authorities. This survey is a way to justify the recommendations that we believe can remove barriers to investment and improve the impact of the final Solar Power Decision towards a fast-growing and sustainable solar power market in Vietnam.

Please refer to following pages for a Detailed Analysis of the Expert Survey Results and Recommendations.

**Tomaso Andreatta**  
**Vice Chairman,**  
**Chairman of Green Growth Sector Committee**

## ABOUT EUROCHAM:

Since its establishment with only 60 members in 1998, the European Chamber of Commerce in Vietnam (EuroCham) has grown to represent around 900 European businesses in 2016, among which some of the world's leading companies. With offices in both Hanoi and Ho Chi Minh City, EuroCham's mission is to represent the business interests of its European members in Vietnam, and to improve the business environment in Vietnam for the benefit of all businesses. EuroCham also aims at helping Vietnamese enterprises to successfully meet the many challenges posed by the country's ongoing global economic integration. As the lead organisation representing European business interests in Vietnam, EuroCham works in partnership with the Belgium-Luxembourg Chamber of Commerce in Vietnam (BeluxCham), the French Chamber of Commerce and Industry in Vietnam (CCIFV), The Central and Eastern European Chamber of Commerce in Vietnam (CEEC), the Dutch Business Association Vietnam (DBAV), the German Business Association in Vietnam (GBA), the Italian Chamber of Commerce in Vietnam (ICham), the Nordic Chamber of Commerce Vietnam (NordCham) and the Spanish Business Group in Vietnam (SBG).

EuroCham is also a member and founder of the EU-ASEAN Business Council, representing European business interests in ASEAN; as well as a founding member of the European Business Organisations (EBO) Network, which promotes the interests of European businesses in more than 30 countries across the globe.

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# SOLAR EXPERT SURVEY VIETNAM 2016

## KEY FINDINGS AND RECOMMENDATIONS

### 1. Risks in Vietnam's Energy Market

The most serious risks of developing solar power projects were perceived to be (ranked in order of importance):

- i. Regulatory impediments;
- ii. Low power tariff and low profitability;
- iii. The risk of electricity of Vietnam (EVN) as off-taker was assessed as high;
- iv. Corruption.

### Mitigate Risk

Donors, advisors and other stakeholders in the clean energy sector should aim to reduce risk for the private sector.

### 2. Feed in Tariff (FIT)

100% of the experts concluded that for ground mounted grid connected systems, a level of FIT at 11.2 cents/kWh, is insufficient to attract private investment to solar power developments in Vietnam.

### More attractive FIT Tariff

Increase FIT tariffs from 14 USD cents/kWh to 17USD cents/kWh.

### 3. Competition in South East Asia

The Philippines and Thailand were considered the most attractive solar markets in South East Asia, above Vietnam. Indonesia, Malaysia and Bangladesh were also considered to be attractive markets.

### Solar Power Plans should recognize Competitiveness in the Region

Solar power is a competitive market in South East Asia and Asian region; and investment will freely flow to the markets with acceptable risks and attractive returns.

### 4. Vietnam Faces Competitive Disadvantages

The other countries' solar markets were considered more attractive for these reasons (ranked in order of importance):

- i. The FIT or Power Purchase Agreement ("PPA") price allows a developer to make a profit that is justified given the risks in the market;
- ii. The PPA terms meet recognized international standards; and
- iii. In other regional countries the private sector energy developers/investors and financiers have a track record of success in that market.

### Promote Private Sector Pilots

Initial Solar Power development should be granted a leading role in a clearer approach for the development of Vietnam's solar market to ensure knowledge transfers from more advanced markets.

# SOLAR EXPERT SURVEY VIETNAM 2016

## KEY FINDINGS AND RECOMMENDATIONS

### 5. A "Good" Solar Resource but not Exceptional Resource

Vietnam's Solar Irradiation was considered Good or Very Good by 91% of the experts. This indicates that with appropriate investment incentives, the solar industry could quickly attract substantial investment. But 73% of the experts disagreed with the assertion that "All of the southern regions of Vietnam have 5kWh/m<sup>2</sup>/day resource". This suggests that the solar resource has been over-estimated.

### Deliver on Potential

Conditions should be created for an optimal utilization of the good indigenous resources of Vietnam.

### 6. Role of Private Sector vs Public Sector

- i. The Private Sector is more Cost Effective
- ii. The Private Sector is more efficient investing than the Public Sector - 85% think public sector projects are more expensive to develop than private sector projects. Comments pointed to private investors taking much greater care to ensure that their capital invested is spent wisely and can be recovered with a reasonable profit.
- iii. The crowding out of Public Sector  
71% agreed that Public Sector sponsored projects can crowd out the private sector. With the very limited access to the energy market for Independent Power Producer and the dominance of the state sector, respondents felt overwhelmingly that they would struggle to secure a position in the market.

### A Better Level Playing Field for the Private Sector

The private sector should be allowed better access and standing in the market. Whether it is arguable or not if the Public Sector is a better manager of invested resources depending on the perspective, what is a fact is that an established supremacy of Public Sector in Vietnam is likely to hinder the development of the country's energy market. The Private sector, with its drive and expertise, should be allowed a guaranteed share in the market to ensure that its existence may contribute to more competitive dynamics, generating a healthy interaction between the private and the public sector which can result in a win-win situation for the country.

### 7. Public Private Partnerships ("PPP")

A majority of the experts did not believe that the solar market could best begin with a Public Private Partnership in a Vietnam model. Comments were made that the PPP development had been a slow and unpredictable process to date and the majority of experts felt were unlikely to make this their best first step into the market.

### Provide a Clear Market Development Plan

The private sector should have a leading role in a clearer approach for the development of Vietnam's solar markets.

# SOLAR EXPERT SURVEY VIETNAM 2016

## KEY FINDINGS AND RECOMMENDATIONS

### 8. Pricing Other types of Solar Power Generation

The most popular responses for the suggested power tariffs were:

- i. Solar power plant on remote islands with limited grid at < 5mw capacity 18 USD cents/kWh;
- ii. Commercial Rooftop Solar up to 3mw capacity with a Net-metering and cash payment for any net export to the grid over a year at 15.5 USD cents/kWh to 20 USD cents/kWh; and
- iii. Residential Rooftop < 20kw capacity with Net metering 15 USD cents/kWh to 22 USD cents/kWh.

### Easier exploration of other Solar Power Generation

FIT should sit at a level appropriate to the risk to provide private investors with a reasonable return on capital.

### 9. Regulatory Impediments

92% of experts did not welcome the proposed 500kw capacity licensing cap on rooftop solar systems. They suggested that solar rooftop systems may be installed without the requirement for a power generating license from Electricity Regulatory Authority of Vietnam at up to 2mw peak capacity or 3mw, or that there should be no licensing barrier at all. Regulatory Impediments were the highest risk identified in Point 7.i. above.

### Remove Unnecessary Regulatory Constraints

Experts suggested this as a response to what they consider to be the highest risk in the market and suggested that licenses be required only for systems of 3mw and above.

### 10. Financial Assumptions

A large majority of experts disagreed with the assumptions that:

- i. Debt Finance of 80% of the project cost is available to developers to finance solar plants;
- ii. An Internal rate of Return ("IRR") of 18% was achievable for grid connected plants receiving 11.2 US cents income/kWh of energy produced.

### Consult the Private Sector Experts

Financial assumptions should recognize market conditions and realistic expectations of the return available, using inputs from solar experts in the private sector.