

## CHAPTER 2 ENERGY AND ELECTRICITY

### OVERVIEW

EuroCham Green Growth Sector Committee (GGSC) recognises and supports the essential priorities of the Government in managing the energy market in Vietnam. These priorities are:

- Delivering a supply of reliable and affordable energy for sustainable economic growth. GGSC notes, with mounting concern, commentary from EVN which indicates that there is a risk of power shortages in the period 2020 to 2022 in southern Vietnam: This is of great concern to GGSC members who are power consumers;
- Ensuring the sustainable development of the power sector, based on a new National Power Development Plan #8 to be developed in 2019, which will urgently mobilise private sector investment, and support the equitisation of power generating assets, and;
- Reducing greenhouse gas emissions from energy production in line with the Paris Agreement and the Intended Nationally Determined Contributions (INDC) plan submitted by Ministry of Natural Resources and Environment (MONRE).

At the Vietnam Business Forum (VBF), EuroCham, together with other Chambers, presented the Made in Vietnam Energy Plan (MVEP) to Prime Minister Nguyen Xuan Phuc in Hanoi on the 5<sup>th</sup> of December 2016. This key energy policy document remains the core of our work. We continue to engage with the national energy plan to advocate using indigenous resources to deliver a sustainable energy future to 2030. We contributed to the in June and December 2018 energy policy papers to the Government of Vietnam and held a follow-up meeting with the Ministry of Industry and Trade, and Energy Regulatory Authority of Vietnam (ERAV), to reinforce the messages of MVEP.

**Table 1: Progress on the MVEP energy reform recommendations**

Energy Reform Recommendations	Progress Made in 2018
<b>1. Natural Gas Resources</b>	
a. Commence development of the natural gas resources to displace imported coal	The Government has approved, in principle, the exploitation of new gas fields to supply the power industry. The development of new Liquefied Natural Gas (LNG) terminals has also been approved in principle.
<b>2. Energy Efficiency</b>	
a. Publish a Roadmap to retail power tariffs to 2020 and a vision to 2025	The 3rd Vietnam Energy Efficiency Programme (VNEEP3) has been submitted for approval to the Prime Minister end of 2018 by MOIT. Approval of the programme is expected soon.
b. Smart Grid Technology	A pricing framework was published by the Office of the Government in December 2017 estimating the price inflation to 2020. The estimated rate of inflation is below predicted CPI and contradicts expert analysis such as US AID/Deloitte's November 2017 report.
	Limited small-scale projects implemented.

c. Waste to Energy – special incentives	No significant progress in 2018. Solid waste disposal remains unsustainable. There is no effective waste separation taking place.
d. Public education campaign on energy efficiency for consumers	Limited small campaigns implemented.
<b>3. Renewable Energy</b>	
a. Direct Power Purchase Agreements (DPPAs)	Ministry of Industry and Trade (MOIT) remains committed to implementing a pilot scheme for DPPAs. Progress has been slow and there is no defined start date or conditions for the pilot scheme. EuroCham GGSC has led the Chamber's efforts to implement a DPPA in 2019 based on a "Sleeved DPPA" model.
b. i. Solar and wind FIT and PPA terms made internationally "bankable" ii. Solar Rooftop Electricity can be exported to the grid for value (detail added in 2018)	<ul style="list-style-type: none"> <li>➤ No progress in 2018. Revised FIT for Wind was issued in September 2018. Concerning Solar FIT with the support of the EU-Vietnam Energy Facility various consultation workshops took place in 2018 to propose an adjusted support mechanism for solar power development plan. The regulations governing rooftop solar electricity export remain ineffective and no power producers have been paid for electricity exported to EVN during 2018.</li> <li>➤ On 8th January, 2019 MOIT issued a new Decision 02.<sup>1</sup> In particular, this new Decision addresses the problem of net-metering for solar rooftop projects.</li> </ul>
c. Improve the creditworthiness of Electricity of Vietnam (EVN)	EVN achieved a credit rating of BB- in 2018, but power sales revenues appear to be less than the cost of making and delivering power. Power production costs are rising as cheap hydro and domestic coal resources are already at full capacity.
d. Engagement with the private sector to develop an effective Solar Decision to attract investors	Significant progress was made in 2018 by EuroCham GGSC to establish relations with EREA, Ministry of Planning and Investment (Climate Finance), and the Party's Central Economic Committee to support VBF Power and Energy Working Group to become an accredited Observer at the Green Climate Fund (Korea). Engagement with the private sector took place in the context of the Technical Working Groups of the Vietnam Energy Partnership Group led by MOIT. This led to the endorsement of a set of 40 policy recommendations. Public sector energy consultants advising the Government on energy policy are welcome to make further use of the market knowledge and expertise of GGSC.

<sup>1</sup> Decision 02/2019/QĐ-TTg dated 8 January 2019 of the Prime Minister amending and supplementing to certain articles of Prime Minister's Decision 11/2017/QĐ-TTg dated 11 April 2017 on mechanism for encouragement of development of solar power in Vietnam

## I. MADE IN VIETNAM ENERGY PLAN (MVEP)

Relevant Government authorities: Ministry of Industry and Trade (MOIT), Ministry of Planning and Investment (MPI), Ministry of Finance (MOF), Office of Government (OOG)

### Issue description

The MVEP was produced to help Vietnam meet its growing energy needs, climate change goals from the 21<sup>st</sup> session of the Conference of the Parties (COP21)<sup>2</sup> and achieve its economic development goals. It builds on the 'Power Development Plan (PDP) VII'<sup>3</sup> (MOIT-revised for 2016-2030), the World Bank Group-sponsored report 'Exploring a Low-Carbon Development Path for Vietnam'<sup>4</sup>, the Asian Development Bank's 'Renewable Energy Development and Potential in the Greater Mekong Sub-region Report'<sup>5</sup> and the World Bank's 'Financial Recovery Plan for Vietnam Electricity'.<sup>6</sup>

The MVEP outlines the benefits of cleaner domestic solutions for Vietnam's future energy needs and the positives of prioritising domestic versus imported energy resources. These advantages cover Vietnam's social, economic and energy security goals, its global and domestic environmental commitments, and its need to attract private sector investment. The report also provides key policy and regulatory measures that could help move Vietnam towards these goals.

The MVEP focuses on analysis and regulatory support for the following:

- ▶ **Energy efficiency:** Including enhancing the role of Government and using demand-side management tools to reduce waste and attract private sector investment and innovation in efficiencies;
- ▶ **Renewable energy:** Preparing the policy and regulatory framework to enable the further development of successful markets and attract the required investments in renewables for local and foreign investors, technology and service providers; and
- ▶ **Vietnam's natural gas:** Accelerating and expanding investment in the use of domestic natural gas as a cheaper, cleaner and more flexible fuel than imported coal. Gas remains the least polluting (with 60 per cent fewer CO<sub>2</sub> emissions than coal) and most cost-effective fossil fuel which can serve as a secure bridge fuel.

The report concludes that Vietnam can continue to take full advantage of its indigenous energy resources to reduce the risks and maximise the socio-economic benefits of future energy development, building on its achievements to date.

2 "Vietnam's imprint at COP-21", *Nhan Dan Online*, 2 September 2016. Available at: <[http://en.nhandan.com.vn/special\\_reports/item/4021002-vietnam%E2%80%99s-imprint-at-cop-21.html](http://en.nhandan.com.vn/special_reports/item/4021002-vietnam%E2%80%99s-imprint-at-cop-21.html)> last accessed on 19 December 2018.

3 Decision 1208/2011/QĐ-TTg dated 21<sup>st</sup> July 2011 of the Prime Minister approving the national master plan for power development in the 2011-2020 period with considerations to 2030.

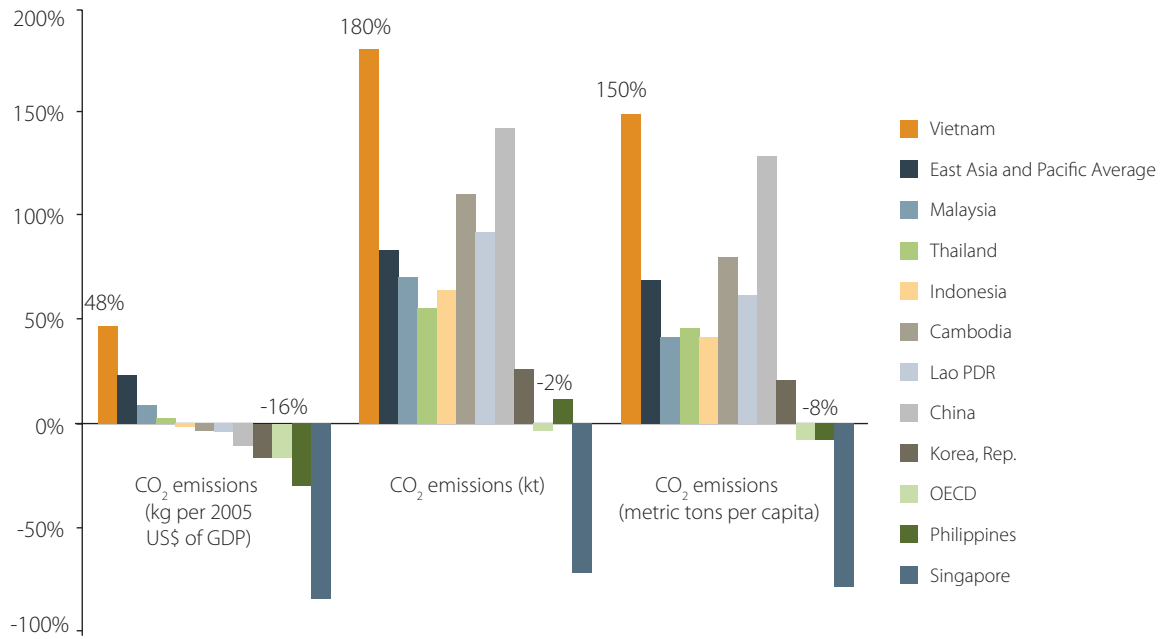
4 P. Audinet; B. Singh; N. Bipulendu; D. T. Kexel; S. Suphachalasa; P. Makumbe and K. Mayer, "Exploring a low-carbon development path for Vietnam" *World Bank Group*, 2016. Available at: <<http://documents.worldbank.org/curated/en/773061467995893930/pdf/102363-PUB-VN-Low-cost-carbon-date-Jan-20-2016-9781464807190-Box-394380B-PUBLIC.pdf>> last accessed on 19 December 2018.

5 "Renewable Energy Developments and Potential for the Greater Mekong Subregion", *Asian Development Bank*, 2015. Available at: <<http://hdl.handle.net/11540/5054>> last accessed on 19 December 2018.

6 J. J. Maweni and J. Bisbey, "A financial recovery plan for Vietnam Electricity (EVN): with implications for Vietnam's power sector", *World Bank Group*, 2016. Available at: <<http://documents.worldbank.org/curated/en/971901468196178656/A-financial-recovery-plan-for-Vietnam-Electricity-EVN-with-implications-for-Vietnam-s-power-sector>> last accessed on 19 December 2018.

## Energy policy goals

**Figure 3: Vietnam's carbon emissions are growing at the fastest rate in the region**



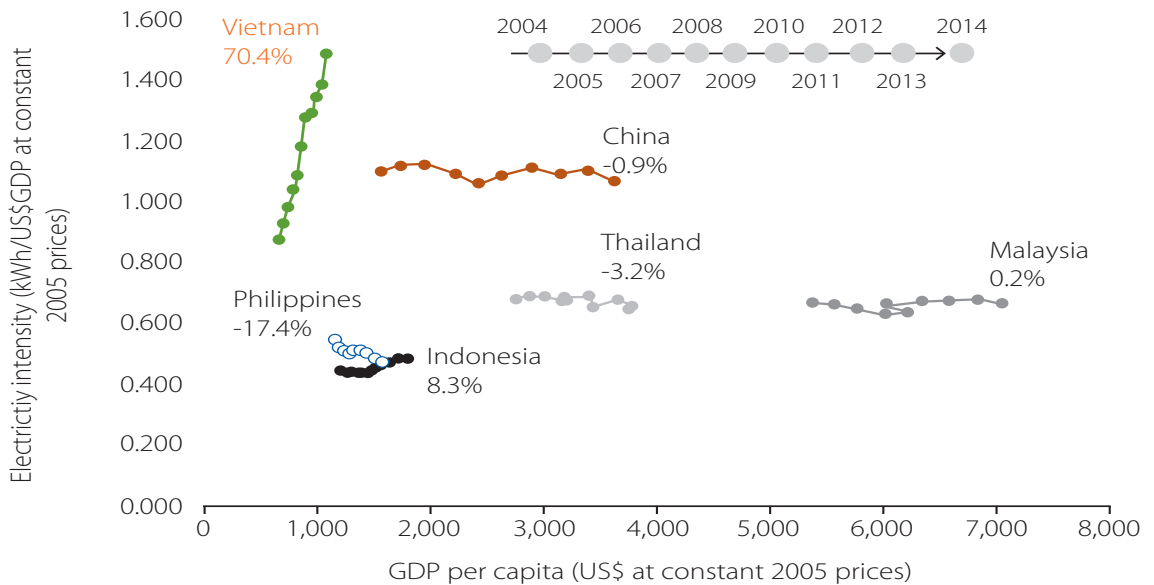
Source: World Bank (2015) *Vietnam Low Carbon Options Assessment*<sup>7</sup>

The MVEP outlines how Vietnam's energy needs can be met with greater emphasis on cleaner domestic sources of energy such as: Renewables including biomass, wind and solar, sustainable energy efficiencies, and the increased development of Vietnam's offshore natural gas. These will all reduce the effects on the environment and the need for imported coal. The MVEP report includes regulatory and policy recommendations that can deliver the private sector investment necessary to meet the US\$100 billion required by 2030 to meet Vietnam's energy needs, and do so in a way that maximises the use of indigenous resources and delivers on Vietnam's environmental goals.

### More efficient use of energy

The growth in demand for electricity has exceeded income growth since 2004, as the graph below shows, and the result has been a rapid rise in electricity intensity. The main constraints facing energy efficiency measures in Vietnam are threefold: (1) a lack of policy framework and its enforcement; (2) subsidised, low electricity tariffs, and no roadmap to future tariff inflation; and (3) financial mechanisms for investment in energy-efficient technology and conservation.

<sup>7</sup> Op. cit. P. Audinet, B. Singh, N. Bipulendu, D. T. Kexel, S. Suphachalasai, P. Makumbe and K. Mayer.

**Figure 4: Vietnam's electricity intensity is extremely high and growing rapidly**

Source: ECA calculations using data from BP Global's Statistical Yearbook (electricity generation)<sup>8</sup> and World Bank (real GDP and GDP per capita).<sup>9</sup>

#### Potential gains/concerns for Vietnam:

The adoption of MVEP would allow:

- Faster construction of energy plants. Solar installations require just one year to be built, and even wind farms come to market much faster than thermal plants. The first phase of the Solar Energy Platform introduced by MOIT in late 2017 has shown good results with new investment attracted in 2018 to 2019 estimated at US\$500m for new solar energy plants. Full implementation of the MVEP recommendations would ensure that the ambitious solar energy plan can be successfully implemented by 2025 with 4000mw of solar connected to the grid and US\$3.5 billion of new investment attracted;
- A more flexible power development plan that can be adjusted to fit future demand, low or high, and removes the risk of either stranded assets or of failing to meet demand if growth exceeds estimates;
- Much greater new investment to be attracted from multiple domestic and foreign sources, in particular mobilising private sector resources, building local manufacturing capabilities, reducing the reliance on foreign governments and the need for Vietnamese Government revenues, subsidies and guarantees or Government Guarantees and Undertakings (GGUs);
- The more efficient use of electricity that will reduce energy waste and make Vietnam more competitive, productive and attractive for Foreign Direct Investment (FDI);
- An estimated US\$15-20 billion could be added to Government revenues over the project lifetime in developing 3 GW of indigenous gas-fired power plants, compared to an estimated US\$20-25 billion in foreign exchange costs to import coal for an equivalent coal-fired development;

<sup>8</sup> "BP statistical review of world energy", BP, June 2017. Available at: <<https://www.bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review-2017/bp-statistical-review-of-world-energy-2017-electricity.pdf>> last accessed on 20 December 2018.

<sup>9</sup> World Bank data. Available at: <<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>> last accessed on 20 December 2018.

- The reduction of social and environmental costs of pollution from a new generation of coal power plants which contribute to poor air, water and land quality and high health costs. Following International Monetary Fund (IMF) calculations, we estimate the costs of health and environmental impacts of the current power development plan, with its reliance on coal, could be as high as US\$15 billion a year by 2030;<sup>10</sup>
- Vietnam to reduce its dependence on imported coal with its consequent risks for security of supply and tens of billions of dollars in foreign exchange demands and balance of payment risk, and;
- A reduction in the significant financial, logistical and environmental costs of transporting coal and coal waste.

### Recommendations:

In our view, the Government should pursue a more sustainable energy path that attracts new investment. This requires enacting some fundamental policy and regulatory reforms, which are described below:

- Promote private investment into renewable electricity generation:
  - a) Introduce "sleeved" DPPAs in 2019 between power producers and large power consumers, as these have proven to be extremely effective in other, similar countries. Companies and other MNCs<sup>11</sup> have stated their global commitments to seek access to clean energy. This will attract additional investment and global brands that will help Vietnam move up the manufacturing value chain.
  - b) Implement the recommended changes to wind and solar PPAs to make these 'bankable' by international finance institutions, define the future Feed-In-Tariffs (FIT) for renewable energy in 2019 and 2020 or even beyond.

EuroCham welcomes the issuance of the new Circular 02<sup>12</sup> regulating implementation of wind power project development. One of the key purposes of this Circular is to revise the Standardised Power Purchase Agreement for wind projects.

It is strongly recommended that the Government consults and takes into considerations private investors' opinions about its future policy on FIT for solar, biomass and waste-to-energy to be revised in 2019 and 2020 with support of EU Vietnam Energy Facility. Any changes of the current policy should give at least the same or more favourable conditions to the projects that are being developed or implemented.

- c) Continue the restructuring of EVN to enhance its creditworthiness. This credit enhancement for EVN would help the Government of Vietnam reach energy and environmental goals and encourage developers to consider Vietnam as an attractive market for investment on commercial terms.
  - d) The Government is encouraged to work with EuroCham's GGSC, VBF and EU private sector solar experts and business groups in Vietnam, to publish a Solar Power Decision with its supporting regulations in the form most likely to attract private capital investment as part of the National Power Development Plan #8 planning process.
- Adopt energy efficiency measures:
    - a) Signal that most consumers will have to pay the true cost of energy and define the timing and speed of progress toward market-based pricing of electricity. Increased transparency is the stimulus to increase investment in energy efficiency and the installation of household solar, wind or other renewable energy sources to relieve pressure on the power distribution system. Specifically, we recommend issuing a Retail Power Price Roadmap for the full introduction of market-based pricing by 2020 with a vision to 2025, including a definition of variable pricing between the 3 main tariff groups (residential, commercial and industrial). Energy efficiency investment and innovation is not occurring in high volume because

<sup>10</sup> Calculated using planned coal-fired generation of 311 TWh in 2030 and IMF estimates of the health and environmental costs of coal consumption in Vietnam of \$ 2.26/GJ (equivalent to around 8.07/MWh of electricity generated). A cost of carbon of \$35/tCO<sub>2e</sub> is applied. Available at: <<http://www.imf.org/external/np/fad/environ/data/data.xlsx>> last accessed on 19 December 2018.

<sup>11</sup> Examples: Apple, Nike, Coca Cola, Google, TetraPak

<sup>12</sup> Circular 02/2019/TT-BCT dated 15 January 2019 of the Ministry of Industry and Trade on wind power project development and power purchase agreement for projects thereof



- businesses and consumers believe that power tariffs will remain subsidised by the Government.
- b) Encourage private sector investment into smart grid and smart transition technologies providing effective cost-saving solutions.
  - c) Develop special incentive measures for waste-to-energy systems, especially to benefit local communities through improved health and hygiene.
  - d) Start a public education campaign to raise awareness of the ability of consumers to reduce energy waste, in conjunction with transparent information about the increases in electricity tariffs.
- Develop offshore gas potential:
    - a) We recommend that careful analysis indicating that offshore gas development cost and revenue structure is favourable to imported fuel options should be conducted. Further, the high cost of 'clean coal' technology far outweighs natural gas.
  - Effectively implement the commitments under the EVFTA: the FTA between the EU and Vietnam contains a dedicated chapter on Non-tariff Barriers to Trade and Investment in Renewable Energy Generation. It covers specific rules for the renewable energy sector on non-discriminatory treatment in general (licensing and authorisation procedures), on local content in particular and on the use of international standards. Cooperation with the EU can help Vietnam from the EU's successful experience in this sector. Clear rules will provide for investor confidence and better trade opportunities.

Excellent progress has been made to implement reforms that will attract substantial new investment to build energy generation capacity in Vietnam's natural gas and Liquefied Natural Gas (LNG) industries and in the potential market to deliver "sleeved" DPPAs with energy supplied from new solar and wind farms.

This beginning of a transfer of the burden of capital investment from the State to the private sector is very timely and has attracted investors and power developers from Europe into partnerships with local companies in Vietnam. However, the desire to attract investment in energy efficiency remains unfulfilled, while retail power tariffs have remained the same for two and a half years. Moreover, there is no transparency on future power prices for consumers and the timing of the movement towards market-based pricing of energy.

EuroCham's Green Growth Sector Committee applauds the initial signs of the development of a stronger relationship with Ministry of Industry and Trade (MOIT) and Ministry of Planning and Investment (MPI) in the development of energy policy for the private sector. We anticipate that EuroCham members' expertise in financing, energy market analysis and risk mitigation will be of valuable assistance to Ministries in developing a reliable and sustainable energy supply in the future.

## ACKNOWLEDGEMENTS

EuroCham Green Growth Sector Committee