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## Financing sustainable development in Viet Nam: solar and wind energy promotion

This paper examines the state of Viet Nam's renewable energy sector and the potential effectiveness of its current renewable energy policies in terms of its ability to attract international climate finance, particularly with regard to the wind and solar energy sectors. Viet Nam has had longstanding problems promoting investment in energy, particularly renewable energy, which has led to worsening air quality, increased dependence on coal and growing concerns that the country may soon face electricity shortages due to increasing energy demand. Despite a push by the Vietnamese government to promote renewable energy policies to address these issues, Viet Nam is still not on track to meet Sustainable Development Goal (SDG) 7 "Ensure access to affordable, reliable, sustainable and modern energy for all" (United Nations, n.d.). Effectively securing climate finance has been identified as key to meeting these goals. The ongoing reform of Viet Nam's solar and wind energy sectors will be analysed in terms of its likely effects on attracting international investment. This paper draws on information from both primary and secondary sources, including statistical data, published studies, newspaper articles and government documents. From this, five policy recommendations will be made to address the shortcomings that have limited investment in Viet Nam's renewable energy sector and electricity market.

## Introduction

Despite the SDG indicators showing that Viet Nam has made considerable strides regards the six climate change related SDGs, major challenges remain if it is to fully meet the goals by 2030 (Sachs et al, 2018). With a constrained government budget and decreasing Official Development Assistance (ODA) due to the country's elevated status as a lower-middle income country (Herbert, 2012; The World Bank, 2017c), it will be a challenge for the Vietnamese government to make significant renewable energy investments, which typically have high fixed costs (Hirth and Steckel, 2016). This is especially concerning as Viet Nam is extremely vulnerable to climate change and is already facing increasing health costs due to high levels of air pollution (Government of Viet Nam, 2011; Le, 2017). The GoV demonstrated its commitment to combatting climate change by signing on to the Paris Agreement (International Climate Initiative, 2018). Viet Nam's Voluntary National Review on the Implementation of the SDGs has identified attracting climate finance as a promising solution to this issue (UN DESA, 2018). Climate finance is financing from public, private or transnational sources that is directed to mitigation and adaptation efforts addressing climate change (UNFCCC, n.d.).

This paper identifies potential gaps in government mechanisms to attract climate finance in clean energy and argues that Viet Nam's renewable energy investment targets need to be more aggressive to ensure the country's long-term energy security. The paper also proposes policies to increase investment in solar and wind energy in Viet Nam and Attracting international investment will be key to ensuring a significant expansion of the renewable energy sector, however, while Viet Nam has favourable investment conditions, key barriers remain that hinder the expansion of the renewable energy sector (US Secretary of State, 2015). Once renewable energy feed-in tariffs (FiTs) are increased, fossil fuel subsidies are eliminated, and structural barriers that increase the opportunity cost of renewable energy investment

in Viet Nam are removed, Viet Nam should be able to achieve SDG 7.2 and its Intended Nationally Determined Contribution (INDC). However, meeting these targets may not be sufficient to ensuring the country's energy security.

The first section of this paper provides context for Viet Nam's climate change and renewable energy targets, particularly in relation to attracting climate finance and ensuring energy security. The second section details the current state of renewable energy policy in Viet Nam and analyses the extent to which they may attract international climate finance. The final section includes recommendations to address shortcomings in Viet Nam's renewable energy policy.

## Background: Renewable energy, climate finance and energy security in Viet Nam

Acknowledging the need for external investment sources, the Government of Viet Nam (GoV) has set two different emissions targets in their INDC that depend on whether or not "new and additional international financial support, technology transfer and capacity building are received" (UNFCCC, 2016, pg 2). If there is no international support, Viet Nam aims to reduce total greenhouse gas (GHG) emissions by 8% by 2030 relative to the Business as Usual (BAU) case and decrease emissions intensity by 20% by 2030 compared to 2010 levels (ibid). If Viet Nam receives adequate external financial support, it pledges to reduce GHG emissions by 25% and emissions intensity by 30% (ibid). This highlights the important role that international climate finance will have on Viet Nam's energy sector.

The SDG indicators show that Viet Nam's access to renewable energy is increasing but at an insufficient rate to meet SDG 7.2<sup>1</sup> (Sachs et al, 2018). Most of the 50% of Viet Nam's electricity that is deemed 'renewable' consists of hydropower energy (Sachs et al, 2018; EVN, 2017). While hydropower can be considered a renewable source of energy in the traditional sense as no water is lost during the generation of kinetic energy (Daigneau, 2013), it is

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<sup>1</sup> SDG 7.2: by 2030, increase substantially the share of renewable energy in the global energy mix

often seen as a less desirable form of renewable energy compared to solar and wind due to its often harmful social and environmental effects (Duflo and Pande, 2007; Spänhoff, 2013). Large scale hydropower projects can damage the environment around them, by disrupting fish habitats and sediment flow (Timperley, 2018). Viet Nam has also exploited most of its hydropower potential, and projections about the future structure of the energy sector indicate that hydropower's share of Viet Nam's energy consumption will decrease significantly (Breu et al, 2019; EVN 2017).

The same projections about Viet Nam's energy sector forecast that wind and solar energy will be the nation's the fastest growing source of energy (ibid). This is in line with the GoV's current renewable energy development strategy, which puts solar and wind energy at the forefront of its plans (GIZ, 2016). There is also a big push to exploit Viet Nam's biomass energy potential from the forty different sugar mills in the country (GGGI, 2018). However, this paper does not focus on attracting investment to Viet Nam's biomass as its cost structure varies significantly from that of solar and wind energy, requiring different recommendations to attract financing (IRENA, 2012a; IRENA, 2012b; IRENA, 2012c; IRENA, 2018). Data from Viet Nam and around the world show that the levelised cost of electricity (LCOE) of producing wind and solar energy will be "consistently cheaper than that of fossil fuels" (IRENA, 2018, pg 3; Breu et al, 2019). This shows their immense potential to be competitive, particularly in Viet Nam where wind and solar energy potential is significant (Breu et al, 2019).

Viet Nam's SDG 7.2 progress, and the role that climate investment can have in catalysing this, is the overarching focus of this paper because Viet Nam's energy sector is responsible for approximately two-thirds of Viet Nam's GHG emissions (USAID, 2016). Thus, increasing the share of renewable energy, specifically wind and solar energy, into Viet Nam's renewable energy mix will be vital in reducing Viet Nam's GHG emissions.

With 3000km of coastline, consistent wind speeds and high solar irradiance, Viet Nam's renewable energy potential is immense (Breu et al; ADB, 2015). However, despite planning to increase the share of renewable energy production in Viet Nam (from 7% by 2020 to

10% by 2030,) the GoV's energy plan projects increased dependence on coal in the near future (GIZ, 2016). The share of coal in the energy mix is projected to increase from 33% of installed energy capacity in 2016 to 43% by 2030, according to Viet Nam's state-owned power company's (EVN) 2016 annual report (EVN, 2017). More effective policies need to be implemented, and more ambitious targets should be

set, for Viet Nam to meet its climate change related SDG targets and achieve sustainable growth.

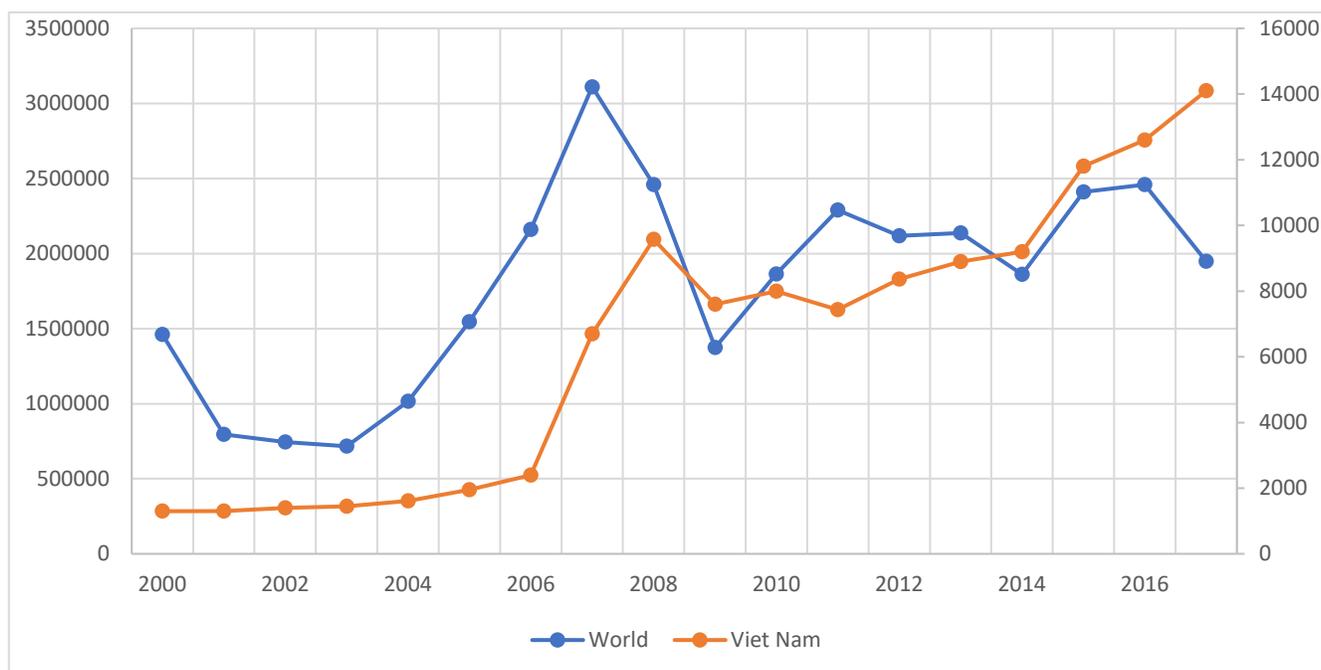
According to data from the Organisation for Economic Co-operation and Development (OECD), Viet Nam received the third highest amount of bilateral and multilateral climate finance globally in 2016 (Timperley, 2018). Over the past decade, foreign direct investment (FDI) inflows in Viet Nam have been rising, while flows to the rest of the world have fluctuated, as highlighted in figure 1 (OECD, 2018b).

Viet Nam’s consistently high economic growth rates, proximity to global supply chains and active efforts at global integration contribute to the country’s strong investment climate (PwC Vietnam, 2018). About half of Viet Nam’s climate finance inflows were directed towards rail infrastructure development, particularly the development of the metro systems in Ha Noi and Ho Chi Minh City from France, Japan, the World Bank

in Viet Nam in 2016 (OECD, 2018a). This suggests that investors are willing to make other low-carbon investments in Viet Nam, such as investment in rail infrastructure, but that there are currently insufficient financial incentives to invest in renewable energy (OECD, 2018a). Attracting renewable energy investments will thus put Viet Nam in a better position to achieve SDG 7.2 and its INDC.

Harnessing Viet Nam’s renewable energy potential will be vital in ensuring that the country’s power supply keeps up with demand. Electricity demand in Viet Nam has increased at an average annual rate of 12.1% between 2005 to 2014 (Urban et al, 2018). This trend is likely to be sustained, as Vietnamese officials estimate electricity demand to increase at annual growth rates of between 8-11.3% until 2030 (Viet Nam News, 2018). Electricity demand has been spurred by economic growth and vast improvements in the electrification rate; 100% of the Vietnamese

Figure 1: FDI inflows (\$, millions)



Source: World Bank, 2017a

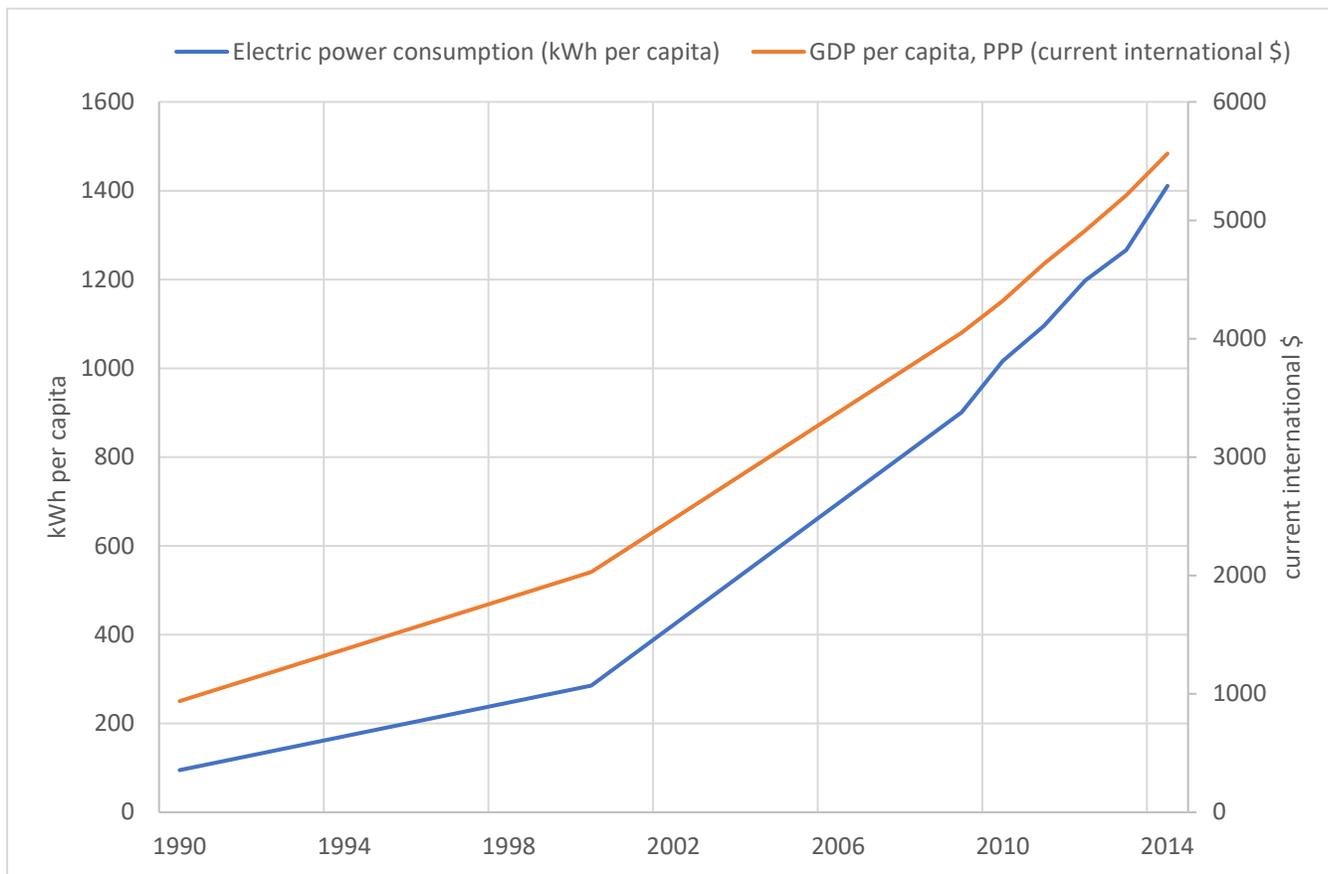
and the Asian Development Bank (ADB) (OECD, 2018a). Despite Viet Nam’s strong potential for renewable energy development (“Prime Minister”, 2018), investment in renewable energy only accounted for 0.623% of international climate finance

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Figure 2 shows a clear correlation between per capita electricity consumption and gross domestic product (GDP) per capita in Viet Nam. The power grid in Viet

2018). If successful, this would mean that renewable energy would comprise 32% of total electricity production in Viet Nam (EVN, 2017).

Figure 2: Growth of per capita electricity consumption and GDP

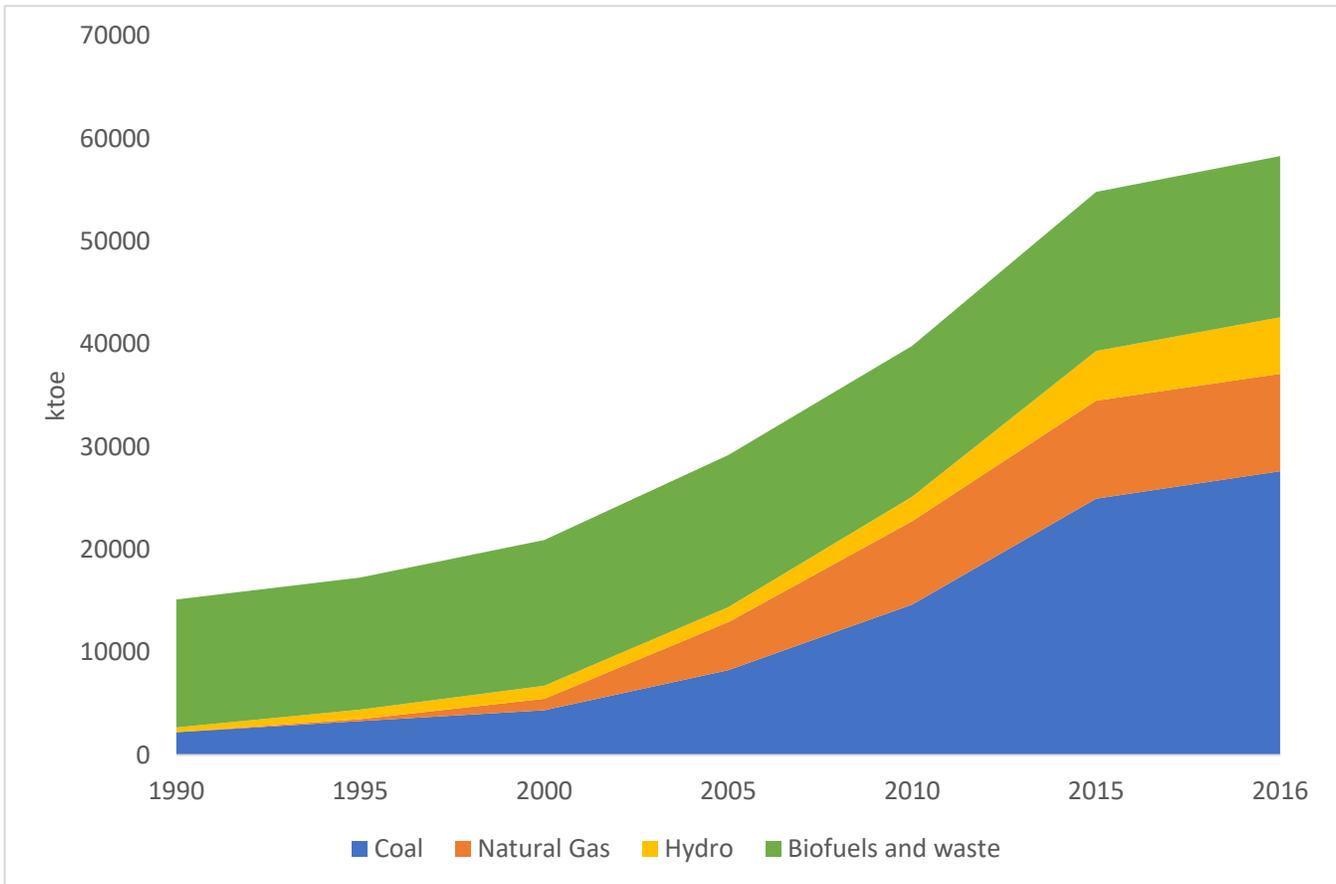


Data source: The World Bank (2014; 2017b)

Nam already has limited reserves (ibid), and there are fears that supply will not be able to keep up with demand, leading the Vietnamese Ministry of Industry and Trade to warn that blackouts by 2030 are likely (Viet Nam News, 2018). While representing a significant share of Viet Nam’s power generation (37.6% in 2016) (Das, 2019), the potential of medium and large-scale hydropower has largely been exploited in Viet Nam (Danish Energy Agency, 2017). Projections for Viet Nam’s future energy mix show that hydropower will have a decreasing share of Viet Nam’s installed capacity (EVN, 2017).

To meet its energy demands, according to the Prime Minister of Viet Nam, Viet Nam has a target to more than double electricity output generated by renewable energy sources in fifteen years, from 58 billion kWh in 2015 to 186 billion kWh by 2030 (“Prime Minister”,

Figure 3: Viet Nam's Total Primary Energy Supply by source from 1990-2016



Source: IEA, 2018

Contrastingly, Viet Nam is expected to become increasingly more dependent on coal, oil, and gas as highlighted in figure 3 (EVN, 2017). This poses severe concerns for the country, as domestic oil and gas reserves are expected to be depleted in sixty years, with domestic coal projected to be depleted soon after, in seventy years (Danish Energy Agency, 2017). As a result, Viet Nam would have to rely on imported sources of energy in the absence of viable alternatives.

Thus, overdependence on coal, oil and gas could pose risks for Viet Nam's energy security in the future if it does not start seriously expanding its renewable energy sector soon (Danish Energy Agency, 2017). Countries with low energy security are forced to become reliant on imported energy sources, risking price and supply volatility and political manipulation from supplier countries (Murphy, 2015). Prices would become subject to tariffs, exchange rate fluctuations and world supply, which could adversely affect domestic consumers in particular (Pasqualetti and

Sovacool, 2012). Energy supply would become vulnerable to geopolitical factors, risking national security (Pasqualetti and Sovacool, 2012). Power shortages would also likely lead to lower consumer welfare and a slowdown in GDP growth (Ou, Huang and Yao, 2016). With an abundance of wind and solar energy potential (Das, 2019; "Prime Minister", 2018), it is imperative that Viet Nam exploits these sources of renewable energy to maintain energy security and meet its climate change targets.

As evidenced by its INDC, the GoV seems to understand that accessing international climate finance will help it achieve energy security and reduce carbon emissions (UNFCCC, 2016). The renewable energy sector in Viet Nam has been evolving rapidly in the past few years, with new wind and solar energy farms currently being developed. The World Bank (2018) projects that investment in all forms of energy will need to accelerate significantly to sustain Viet Nam's energy needs, however investment in

renewables will need to have the greatest percentage increase compared to past investment trends, particularly by the 2020-2025 period, as seen in figure 4. However, the perceived risk of investing in Viet Nam’s renewable energy sector is still high, due to expected changes in electricity market pricing mechanisms and FiTs, and due to weak legal institutions and a cumbersome investment approval process (Vietnamnet, 2019;

Das, 2018; GAN, 2017).

power plants in Viet Nam under a variety of contracts (ADB, 2015). Domestic investors are classified as Independent power producers (IPPs), whereas foreign investors operate with a build-operate-transfer (BOT) contract (ADB, 2015). This contract allows foreign investors to build power plants and manage for a specified number of years. At this point, the investor is required to relinquish control and ownership of the plant to the GoV. EVN now owns 61% of Viet Nam’s installed power capacity, while BOTs and IPPs own the rest (ADB, 2016). Notably, BOTs and IPPs owned all of Viet Nam’s renewable energy capacity in 2014 (ADB,

Figure 4: Historic Investment Trends and Forecast Investment Needs for the Power Sector (US\$ billions)

	Average annual investment				Total Investment Financing Needs 2016-30
	Historic period 2011-2015	Forecast period			
		2016-20	2020-25	2025-30	
<b>Generation</b>	<b>6.6</b>	<b>9.8-12.0</b>	<b>7.8-9.5</b>	<b>6.0-7.3</b>	<b>118-144</b>
Coal	3.6	7.2-8.8	3.9-4.7	3.9-4.7	75-92
Gas	0.4	1.2-1.4	0.8-1.0	0.0-0.1	10-12
Large hydro	2.5	0.3-0.4	0.8-0.9	-	5-7
Renewables	0.1	1.1-1.3	2.3-2.9	2.0-2.5	27-33
<b>Network</b>	<b>1.2</b>	<b>1.7-2.1</b>	<b>2.4-2.9</b>	<b>2.6-3.2</b>	<b>34-41</b>
Transmission	0.5	0.8-1.0	1.3-1.5	1.3-1.6	17-21
Distribution	0.7	0.9-1.1	1.1-1.4	1.3-1.6	17-21
<b>Grand total</b>	<b>7.8</b>	<b>11.6-14.1</b>	<b>10.1-12.4</b>	<b>8.6-10.5</b>	<b>152-185</b>
<b>Total (% of GDP)</b>	<b>4.6</b>	<b>3.4-4.1</b>	<b>2.6-3.2</b>	<b>1.4-1.7</b>	<b>2.3-2.8</b>

Source: World Bank, 2018

2015). Private companies are allowed to run their own power plants, but energy to be used for electricity is then purchased by the EVN (GIZ, 2015).

## Current State of Play

Viet Nam’s energy sector is dominated by three state-owned enterprises, with EVN responsible for Viet Nam’s power sector (ADB, 2015). The state monopolises the transmission and distribution of power and is thus in control of electricity prices, which are fairly low in Viet Nam (GIZ, 2015). However, the government has opened up energy generation to other investors, allowing them to own and manage

Lack of profitability has been cited as a constraint for investment in Viet Nam’s energy industry (ADB, 2016). This has not been limited to renewables, but also extends to coal, fossil fuels and electricity generation. Thus, state support is crucial to attracting investment in new forms of energy in Viet Nam. However, the ADB (2015) and the World Bank (2018) have raised concerns over a lack of government support and funds for attracting investment in renewables, in addition to weak “institutional and regulatory framework to support renewable energies” (ADB, 2015, pg 9). This is

supported by conclusions from expert interviews<sup>2</sup> conducted by Urban et al (2018, pg 578) which found “a lack of policy framework to attract investments” in the renewable energy sector.

The Vietnamese government has approved various policies to target climate change issues in Viet Nam, suggesting that they understand the scale of the problems associated with climate change. However, the country is lacking one master plan for climate change, renewable energy development and green growth, which could act as a reference point for relevant policies such as the National Green Growth Strategy, the National Strategy for Climate Change and the Renewable Energy Development Strategy 2016-2030 with outlook until 2050. Each strategy outlines different targets, but they lack overall cohesion (Urban et al, 2018).

For instance, the National Strategy for Climate Change sets targets for increasing renewable energy’s share of commercial primary energies while the Renewable Energy Development Strategy sets different targets for increasing renewable energy’s share of overall total primary energy consumption (Government of Viet Nam, 2011; Government of Viet Nam, 2015). This is just one example of the lack of coordination between related agendas that was highlighted by expert officials interviewed by Urban et al (2018). This is particularly concerning because each strategy proposes different policies and implementation plans, which can lead to confusion and inefficiency when working toward the targets (Urban et al, 2018)

The GoV has committed to phasing out subsidies for coal and fossil fuel production in their INDC (UNFCCC, 2016), which should reduce distortions in pricing between non-renewable and renewable energy sources in Viet Nam (UNDP, 2012). Further, the GoV has implemented policies that will make the renewable energy sector more competitive, including: corporate tax exemptions, reduction/elimination of import taxes on machinery and capital and land-use fees. Wind and solar energy projects are exempt from paying corporate taxes for the first four years of the project and enjoy a 50% reduction for the next nine years (Cossen, 2017). Further, they are exempted from

land-use fees if they are operating on previously unused land (ibid). However, for these energy sources to become a more attractive investment than coal and fossil fuels, further policies need to be implemented to reduce the perceived risks associated with investment in renewables (World Bank, 2018).

Pricing issues remain in the Vietnamese energy market. High-profile investments in the energy sector are expected to fall through due to uncertainty over pricing (Breu et al, 2019). Investors argue that Viet Nam’s energy pricing model does not allow for investments to become profitable, despite government-provided FiTs (ADB, 2016). As such, the Vietnamese government have committed to creating a market-based pricing mechanism to increase electricity prices and an increase in FiTs for solar power, making renewable energy investments more profitable (ADB, 2016). However, the details of the price plan and the FiT amounts have not yet been announced, leading to uncertainty in the market (Das, 2019).

The issues associated with pricing are compounded in the renewable energy sector due to the high fixed costs and perceived level of risk. In addition to low energy prices, Viet Nam has low FiTs for solar and wind energy that hinder the commercial viability of solar and wind farms (GIZ, 2015; Das, 2019). In fact, electricity prices in Viet Nam are not high enough to cover the total cost of electricity generation (GIZ, 2015). In order to rectify this issue, the Vietnamese government have increased the amount of the FiTs for both wind and solar energy over the past two years (Das, 2018; Government of Viet Nam, 2017). However, it is unclear if these increases will be enough to spur investment, as they remain one of the lowest in the world (Das, 2019). Wind FiTs range from 8.5-9.8 US cents per kWh and solar FiTs range from 6.67 to 10.87 per kWh, depending on the location of the project (Das, 2019).

The GoV’s Decree No.11/2017/QĐ-TTg brought in new mechanisms to try to stimulate the Vietnamese solar industry (Government of Viet Nam, 2017). Since its implementation, the Vietnamese government have seen a rise in planned solar farms, with 100 projects

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<sup>2</sup> With representatives from government agencies, private firms, academic institutions and multilateral institutions in Viet Nam

added to power development plans for a total of 1770MW after 2020 (Vietnam Investment Review, 2018). According to an expert from GIZ<sup>3</sup>, there are an estimated 60-70 wind energy projects in Viet Nam, including some funded by companies from South Korea, Singapore and Germany (Vietnamnet, 2018). However, the majority of them are in initial planning stages or in the first phase of construction (ibid).

Further, modelling by Breu et al (2019) for McKinsey & Company shows that the cost of renewable energy in Viet Nam has been declining at a rate of about 10 percent annually since 2012. While this decline is projected to slow down as these technologies mature, the modelling shows that renewable energy capital costs may already be cheaper than the cost of traditional energy in Viet Nam (see figure 5). The publishing of these results should help potential investors recognise the reduced risk of renewable energy projects in Viet Nam.

*Figure 5: current, planned and estimated technical capacity (MW<sup>4</sup>)*

Energy type	Current capacity	Planned for 2030	Estimated technical capacity
Wind	190	6,000	215,000
Solar	8	12,000	340,000

Sources: Das, 2019; GIZ, 2016; “Prime Minister”, 2018

The same modelling by Breu et al (2019) based on the GoV’s current energy plans shows that despite the GoV’s push for renewable energy in recent years, Viet Nam’s wind and solar targets for 2030 underutilise Viet Nam’s potential technical capacity (Das, 2019; Prime Minister of Viet Nam, 2018). This is emphasised by figure 5, which shows that while Viet Nam’s renewable energy sector will expand rapidly by 2030, the planned capacity will still only be a small fraction of Viet Nam’s estimated technical capacity.

Further, Breu et al (2019) project a significant increase in the installed capacity of coal, to 26GW<sup>5</sup> by 2020 and to 60GW by 2030. Solar and wind energy capacity is projected to increase from an almost negligible

amount in 2020 to 18GW by 2030 (EVN 2017; GIZ, 2016). Hydropower is projected to reach its full capacity by 2030, producing 21GW by 2020 and 28GW by 2030 (Urban et al, 2018; GIZ, 2016). According to these estimates, coal would make up 52% of newly installed capacity in Viet Nam. Further, the total additional installed capacity under the current plan would reach 129GW by 2030, compared to 204GW if renewables were utilised in accordance with McKinsey & Company’s proposed “Renewables-Led Pathway”.

In addition to increased financial incentives, streamlined, transparent processes for investment in renewable energy will attract more external investors to the sector. Urban et al (2018) found that a key hindrance to the development of the sector was that coordination between policies and experts was lacking. Further, Breu et al (2019) found the current investment approval process to be arduous and opaque, and thus a significant deterrent to potential investors. These findings are particularly significant as the GoV’s financial constraints make it dependent on foreign investment (Urban et al, 2018).

In addition to the inefficient investment approval process, Viet Nam’s weak contract enforceability also increases potential transaction costs, thus adding to the perceived risk of investing in the country. Viet Nam fares quite well in the World Bank’s Doing Business Index, ranking 69<sup>th</sup> out of 190 countries, and has an ease of doing business score of 68.36 that is considerably higher than the East Asia & Pacific regional average of 63.41 (World Bank, 2019). However, it is being held back by its weak contract laws (Nguyen, 2016). There is a lack of enforceability of contracts in Viet Nam due to its weak judicial system (ibid; Luu, 2017). Viet Nam scores below the regional average on the World Bank’s quality of judicial processes index, scoring 7.5 out of a possible 18 (World Bank, 2019). Thus, investors need to rely on trust and personal relationships when settling disputes, which is extremely inefficient (Trebilcock and Leng, 2006). Potential investors of projects requiring high fixed costs are more likely to be inclined to invest in countries that provide better long-term security for their significant investments (ibid).

<sup>3</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, a German development agency

<sup>4</sup> Megawatts

<sup>5</sup> Gigawatts

A model by Williges, Lilliestam and Patt (2010) estimates the effect of changes in various factors on overall investment costs and the resulting FITs required to make investment in concentrated solar power (CSP) production in North Africa attractive. Their Mediterranean area renewables generation estimator (MARGE) model show that government loan guarantees could significantly decrease the internal rate of return (IRR) for an investment initially perceived as risky. According to the MARGE model, for each 1% decrease in IRR, the amount of time taken for a CSP investment to reach parity with coal decreases by 1 year (ibid). While their findings cannot be exactly applied to Viet Nam's energy sector, they provide a useful estimate regarding the consequences of government policy on facilitating the profitability of the renewable energy sector.

## Conclusion and recommendations

Given the current trajectory of Viet Nam's climate change related SDG progress, the government's renewable energy plan needs to be improved to ensure that investment in renewable energy sources are worthwhile for investors. This requires reducing investment risk, and consequently reducing the potential opportunity costs to make the investment more financially viable. Developing renewable energy will also help Viet Nam meet its INDC, by reducing dependency on fossil fuels and carbon emissions, while also helping Viet Nam achieve long-term energy security. It must be noted that investing in energy distribution and energy use efficiency improvements will be crucial for reducing overall energy demand in Viet Nam (World Bank, 2018), however evaluation of these policies is out of the scope of this paper.

The following recommendations aim to reduce the potential risks of investment in renewable energy in Viet Nam. Once these recommendations are achieved, it would be feasible for the GoV to re-evaluate its energy mix targets to reduce the share of fossil fuels in Viet Nam's future energy mix by displacing them with renewable energy.

### 1. Increase FITs

Firstly, FITs need to be increased to ensure that investors are able to cover both fixed and variable

costs over the duration of the contract. Both solar and wind energy FITs are low in Viet Nam, as are electricity prices, making investments in sources of energy already perceived as 'riskier' extremely unattractive (Das, 2018; ADB, 2015; Danish Energy Agency, 2017). The GoV has already committed to increasing tariffs for both solar and wind energy, however these need to be increased further for renewable energy to be perceived as a more secure investment. While promising, it is essential that the GoV commit to specific FITs as soon as possible to secure potential investors. The longer that the GoV waits to give current and future investors clarity, the more likely they will be deterred from investing out of concern that their potential project will have to endure uncertainty in the future. They may be incentivised to invest in countries with less uncertainty, and thus less risk and a lower opportunity cost instead.

### 2. Improve transparency

Lack of transparency has been cited as a key deterrent for renewable energy investment in Viet Nam (Breu et al, 2019). Currently, the opaque process puts a heavy burden on potential investors to take the initiative to reach out to multiple government agencies to get approval, and set out terms, for each investment (Breu et al, 2019). This places a significant opportunity cost on investments and is considered a major deterrent to investment in Viet Nam.

Thus, in a revised renewable energy development plan, the GoV should publish a clear and detailed procedure for clean energy investments in Viet Nam. This should detail a typical project approval process, including the role that each government agency will have in the process. It should also include the value of the FITs that they will receive per kWh of energy generated, the projected price of electricity, and any tax exemptions that they may be entitled to. To make the process even more streamlined, the government should minimise the number of government agencies that a potential investor will need to engage with.

### 3. Reduce indirect subsidies for fossil fuels

The GoV has committed to eliminating fossil fuel subsidies (UNFCCC, 2016). It is essential that the GoV follows through with this commitment promptly to remove price distortions between power generated by

fossil fuels and by renewable sources. This should spur investment for renewable energy because it would make it more competitive on the power market. With the elimination of fossil fuel subsidies, according to modelling done by Breu et al (2019), the cost of renewable energy generation should have either already been less than that of fossil fuel generation in the coming years. However, no available data confirms that this tipping point has already been reached.

#### **4. *Improve climate finance reporting***

One of the major challenges for monitoring climate finance is the lack of consistent data regarding climate-related investment. This can be attributed to a lack of a universal definition of climate finance, leading to a variety of reporting methods and standards (IFC, 2011). The GoV should adopt a single definition of climate finance, and then collect data regarding finance that matches this definition. This will enable it to monitor the progress of its policies to attract investment, so as to then favour those that are most successful. This should be a fairly low-cost policy evaluation method as it does not call for additional data collection but rather compilation of relevant, existing data. At present, the OECD runs the only climate finance-related statistical system, Rio Markers, which tracks public climate finance from Development Assistance Committee (DAC) members, including some climate finance to Viet Nam, however it mostly covers bilateral funding.

#### **5. *Strengthen contract enforceability***

The inconsistency and unreliability of Viet Nam's judicial processes add to the bargaining costs of investing in the country (Nguyen, 2016). Foreign investors cannot rely on informal relational contracting that may be acceptable to domestic entities, as the heterogenous cultural norms between foreign firms and domestic partners can lead to inefficient bargaining outcomes (Trebilcock and Leng,

2006). Thus, the GoV should ensure that the judicial process for hearing contractual disputes involving foreign investors is clearly defined and made public (OECD, 2015). This transparency should help improve the implementation of contract enforcement laws. Further, the cost for plaintiffs to enforce a contract should be kept to a minimum, including indirect costs such as amount of time required to enforce a contract through the court system (ibid). Fixing this issue will be key to Viet Nam sustaining its substantial FDI inflows, however it will require long-term structural changes by the GoV (Ahlquist and Prakash, 2009). Pressure from potential investors and multilateral banks should provide sufficient incentive for the GoV to strengthen its legal institutions, and thus improving contract enforceability (ibid).

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