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PRIVATE FUNDING OPPORTUNITIES FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY INVESTMENTS IN VIET NAM



ACKNOWLEDGEMENT

This technical report has been prepared by Dr. Srinivasan Sunderasan and Lucretia Landmann (consultants) and supervised by Dao Xuan Lai, Jiri Dusik, Vu Thi Thu Hang and Jay Malette (UNDP Viet Nam). The authors are thankful for inputs provided also by Koos Neeffjes (consultant) and Cengiz Cihan (UNDP Viet Nam).

The authors would also like to thank each of the respondents for sharing their perceptions and voicing their opinions through a survey that provided input data to this report (in alphabetical order): Asia Climate Partners, Asian Development Bank, Climate Fund Managers, Clean Energy Investment Accelerator, Dragon Capital Group, Embassy of Luxembourg in Bangkok, European Investment Bank, Export-Import Bank of Korea, FMO / SBI Ven Capital, Glennmont Partners, International Finance Corporation, Japan International Cooperation Agency, KfW, Mitsubishi UFG Financial Group, Saigon Asset Management, Société Générale, Susi Partners, Triodos Investment Management, and World Bank.

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EXECUTIVE SUMMARY

KEY MESSAGES

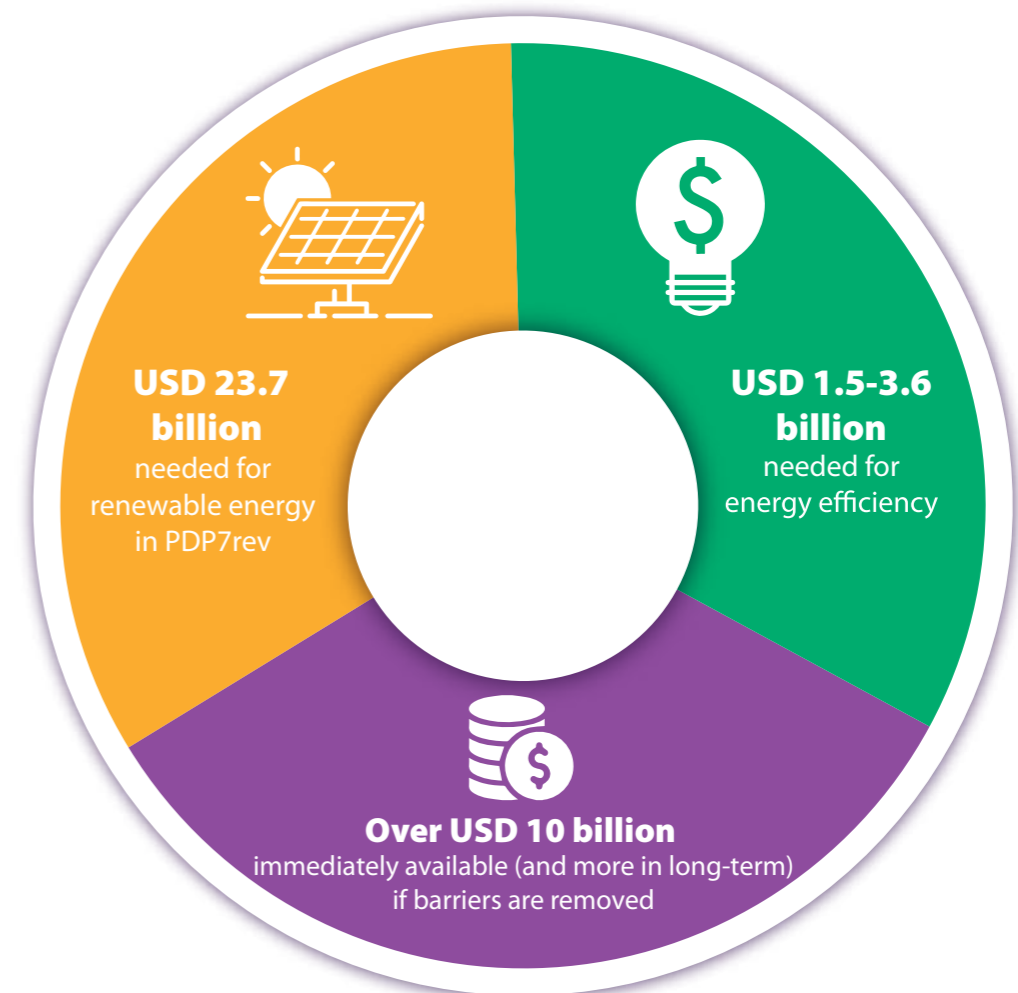
Viet Nam has significant exploitable renewable energy potential, particularly solar photovoltaic, wind, biomass and hydropower. It is estimated that Viet Nam can deploy 85,000 megawatt of solar photovoltaic generation capacity¹ and more than 21,000 megawatt of onshore, near-shore and further offshore wind energy generation.

Viet Nam has also a large potential for saving on electricity-use “energy efficiency” of up to 7.0% relative to the business-as-usual, through to year 2035. Energy efficiency measures can remove some 67 million tonnes of CO₂e in year 2035 and deliver additional environmental benefits. The manufacturing sector offers the largest potential for such savings. The (technical) energy saving potential of some of the industry sectors such as cement production alone is estimated at 40% of present day consumption per unit of output.

At the moment, at least USD 10 billion of external capital is believed to be available, amounting to almost 40% of the total investments needed by 2030, to support Viet Nam’s transition to cleaner energy and energy saving. This figure was obtained from interviews with just thirteen banks, institutions and investors. This investment is possible if the current barriers constraining such investments are addressed- especially low price of electricity that lowers the incentives for efficient use and existing format of power purchase agreements that deter investors from investing in the country.

Expanding the renewable energy capacity and enhancing energy efficiency will improve Viet Nam’s energy independence, lesser expenditures on fossil fuel purchase, and reduce environmental pollution.

¹ AECID-MOIT (2014) Solar Radiation and Potential Mapping: WP6-1. Solar Energy Potential Assessment



RENEWABLE ENERGY

The AECID and MOIT report (2014): “Phase I. Solar radiation and Potential Mapping - WP6-1. Solar Energy Potential Assessment” lists provinces where solar PV could technically produce 109 TWh/year. This would require an installed capacity of about 85 GW on the assumption of average daily production of 3.5 kWh per kWp.²

Viet Nam is endowed with exploitable renewable energy (RE) resources, and the country could deploy sizable solar photovoltaic (PV) generation capacity, and a large portion of the 21,000 MW (estimated) onshore and near-shore wind energy generation potential³ in short order, subject to requisite facilitation, and to resulting investor comfort. Likewise the biomass-based power plants attached to sugar mills, and hydro power projects could be revitalized through appropriate price and non-price policy signals.

The current 7th Power Development Plan (PDP VII, revised 2016) targets the addition of about 24,500MW of (non-large-hydro) Renewable Energy capacity⁴, broken down into solar PV (12,000 MW), wind energy (6,000 MW), biomass power (2,000 MW) and small hydro (est. 4,500 MW) through to year 2030.

Viet Nam Energy Outlook Report (2017)⁵ estimates total electricity production and import for year 2030 in range of 572 – 632 billion kWh, of which the RE capacity (21% of total installed power generation capacity) is projected to generate a minimum of 10% of electricity, i.e. in the range of 57.2 – 63.2 billion kWh (including 19.80 billion kWh from PV, 14.3 billion kWh from onshore / near-shore wind, and 4.8 billion kWh from offshore wind installations, with the remaining projected to be generated from biomass-fired and small-hydro power plants). Correspondingly, the report expects the GHG emissions from electricity generation to decline by about 12 – 15% relative to the business-as-usual scenario projections of 385 million tonnes of carbon dioxide equivalent (mt CO₂e) in year 2025 and 663 mt CO₂e in year 2035.

Subject to assumptions relating to the evolution in upfront project implementation costs, and assuming a debt-equity ratio of 60:40 through to year 2024, and of 70:30 between years 2025 and 2030, such capacity addition could, by our estimates, entail nominal investments of about USD 23.70 billion, broken down into USD 7.75 billion in equity and USD 15.95 billion in project debt as shown in Table 1.

Table 1: Projected renewable energy capacity addition and year-wise investment needs (in USD)

Year	Capacity Target for Renewable Energy (MW) in PDP VII / rev		Expected Investment Needs (USD)			
	Cumulative	Incremental	Total		Equity	Debt
	1,368					
2019	2,372	1,004	1,207,232,000	Debt/ Equity at 60:40	482,893,000	724,339,000
2020	3,103	731	811,115,000		324,446,000	486,669,000
2021	4,193	1,090	1,062,093,000		424,837,000	637,256,000
2022	5,393	1,200	1,218,930,000		487,572,000	731,358,000
2023	6,393	1,000	1,002,317,000		400,927,000	601,390,000
2024	7,593	1,200	1,100,085,000		440,034,000	660,051,000
2025	9,393	1,800	1,509,276,000	Debt/ Equity at70:30	452,783,000	1,056,493,000
2026	11,553	2,160	2,131,641,000		639,492,000	1,492,149,000
2027	14,463	2,910	2,921,263,000		876,379,000	2,044,884,000
2028	17,703	3,240	3,146,443,000		943,933,000	2,202,510,000
2029	21,053	3,350	3,765,198,000		1,129,559,000	2,635,639,000
2030	24,583	3,530	3,826,152,000		1,147,846,000	2,678,306,000
TOTAL			23.70 billion		7.750 billion	15.95 billion

Source: own elaboration

⁴ AECID-MOIT (2014) Solar Radiation and Potential Mapping: WP6-1. Solar Energy Potential Assessment

² AWS Truepower (2011) Wind Resource Atlas of Viet Nam, 18 March, https://www.esmap.org/sites/default/files/esmap-files/MOIT_Viet_Nam_Wind_Atlas_Report_18Mar2011.pdf, p. 4 and 15 of 17.

⁴ Highlights of the PDP 7 Revised http://gizenergy.org.vn/media/app/media/legal%20documents/GIZ_PDP%207%20rev_Mar%202016_Highlights_IS.pdf, last accessed 21 September 2018.

⁵ Viet Nam Energy Outlook Report, (2017) Danish Energy Agency and MoIT, GoVN, p. 50 of 78



Observations and Recommendations

Prospective investors and project developers point out the uncertainties associated with the tariffs structures on offer and the low credit-worthiness of the power purchase agreements (low “bankability of the PPA”) as key impediments to securing funding for renewable energy projects in Viet Nam. Further, tariff levels cannot be viewed in isolation, and have to be evaluated in the context of the stability of the legal and regulatory framework (“government risk”), capacity utilization of the plant (“technical risk”), the ability and willingness of Electricity Vietnam (EVN) to absorb the generated power and to pay for it (“off-taker risk”), the certainty associated with such tariffs (“policy risks”), and the convenience with which earnings could be converted and repatriated (“convertibility risks”).

Table 2 summarizes key recommendations generated on the basis of structured interviews. Respondents emphasized especially the need to improve the existing model of power purchase agreements (particularly adding take-or-pay arrangement with arbitration) and considered it a key for unlocking future external investments into renewable energy generation in Viet Nam.

Table 2: Summary recommendations for facilitation of investments into renewable energy

PLANNING AND PERMITTING FRAMEWORK
<p>Regulatory specifications for renewable energy could be consolidated into a single regulatory instrument on renewable energy development that would stipulate a consistent and simplified legal framework that coordinates various permitting processes and incentive mechanisms for renewable energy.</p> <p>A simple and unified legal framework (similar to e.g. the Energy Efficiency Law) could optimize engagement of authorities involved in renewable energy planning, permitting and monitoring processes. Such "umbrella legislation" would help expedite the achievement of national renewable energy policy objectives.</p>
<p>Integrated master-planning should identify geographic locations that lag in development indicators while also offering attractive renewable energy resources.</p> <p>Such locations could benefit from the creation of enabling infrastructure for utilization of renewable energy, as well as from the employment so generated. This approach would also help with proactive grid network planning and (high voltage) transmission capacity addition.</p>
PLANNING AND PERMITTING FRAMEWORK
<p>Simplify the site allocation and project permitting and allow approval of relatively smaller renewable energy projects (e.g. 50 MW of installed capacity) at the provincial level.</p> <p>This could expedite project design, attract investors and hasten financial closure. The generator may be required to build and operate transmission capacity for a short distance from the power plant - say 500m - and the utility could take the responsibility over for wheeling power from such an interconnection node.</p>
FINANCIAL FRAMEWORK
<p>Provide 'rolling' retail tariff forecasts for the forthcoming period of 2 - 3 years to guide consumers.</p> <p>Guidance on tariff structures helps project returns on investments into e.g. rooftop PV systems with greater accuracy. The administered price mechanism could be phased out and retail prices might be discovered progressively as competitive retail markets mature.</p>
FINANCIAL FRAMEWORK
<p>Separate the commercial and technical functions relating to power procurement, in parallel with the evolution in the whole-sale market for power.</p> <p>EVN and its successor or subsidiary agencies could continue to be engaged with the technical aspects of power procurement, transmission and distribution. A new entity could serve as the counter-party to power purchase agreements and to meeting the legal and commercial obligations under the PPA. Such an entity could be designated a "national implementing agency" for the purposes of achieving the renewable energy targets set out within the Power Development Plan.</p>
<p>Encourage round-the-year operations of biomass-fired power plants through specific tariff structures.</p> <p>Round-the-year operations of waste-to-energy plants and bagasse-fired plants that might otherwise run only during the sugarcane crushing season would enhance capacity utilization. This could be achieved through a separate tariff provided to cover costs of fuel procured at market prices, over and above a capacity payment to encourage plant construction, operation and maintenance. Alternative fuels included in such tariff should include non-fossil fuels – such as agricultural waste such as stock from paddy fields, groundnut shells, residues from coffee processing, wood chips from biomass plantations, and the like.</p>
CONTRACTUAL FRAMEWORK - IMPROVEMENTS OF POWER PURCHASE AGREEMENTS FOR PROCURING POWER FROM INDEPENDENT RE POWER PRODUCERS
<p>Specify step-in rights for lenders and the enforcement of their security interests.</p> <p>Power purchase agreements designed for procuring power from independent power producers utilizing renewable energy sources should specify step-in rights for lenders and the enforcement of their security interests without investors / lenders having to resort to time-consuming legal procedures. In the event of a default by a borrower, lenders should be in a position to notify the borrower of such default with a request to remedy the situation. After the expiry of such a notice period (e.g. 30 days), lenders should be in a position to take management control of the project assets without significant procedural challenges.</p>

CONTRACTUAL FRAMEWORK - IMPROVEMENTS OF POWER PURCHASE AGREEMENTS FOR PROCURING POWER FROM INDEPENDENT RENEWABLE ENERGY POWER PRODUCERS

Indemnify equity investors and lenders against premature termination of the Power Purchase Agreement.

Equity investors and lenders should be indemnified against premature termination of the power purchase agreement. An escrow account could be created to provide requisite comfort and to eventually compensate the investors/lenders for the potential loss of revenue caused by the premature termination of the PPA by the off-taker (EVN or successor entities).

Indemnify equity investors and lenders against curtailment of export by the renewable energy power plant.

Power purchase agreements should indemnify equity investors and lenders against curtailment of export by the RE power plant. Scheduling of power procurement from among base load and intermittent renewable energy sources would need to be planned with greater precision to maximize the overlap between RE-generation and consumption, and consequently, accord priority dispatch to (low-marginal cost) electricity generated from renewable energy sources: doing so would ensure the use of cleaner energy ahead of energy generated from coal or other fossil-fuel-fired power plants.

Indemnify equity investors and lenders against the possibility of default in payments for the power drawn from independent power producers.

Power purchase agreements should indemnify equity investors and lenders against the possibility of default in payments from EVN or successor entities, for the power drawn from the independent power producers utilizing renewable energy sources. An escrow account could be created to provide comfort to investors and to eventually compensate the investors for the potential loss of revenue caused by a payment-default by the off-taker (EVN or successor entities).

Consider constituting an appellate authority to help resolve disputes (if any) between investors and lenders and their counter-parties to the power purchase agreements.

Disputes with EU-based investors are likely to be addressed in accordance with EU-Viet Nam Free Trade Agreement. For other foreign investors, Viet Nam could create an appellate authority to resolve disputes as a half-way measure between international arbitration on the one hand and mainstream domestic legal processes on the other.

Source: own elaboration

In the light of the slow progress with implementing previously licensed projects, a case might be made for the need to customize incentive structures to suit individual segments – solar PV, solar thermal, wind energy, biomass, small hydro power – supported by generic and investor-friendly systemic guarantees relating to project approvals, land acquisition, logistics, grid capacity, inter-connection, off-take payment guarantees, convertibility and repatriation and arbitration.

In keeping with the normal course of operations, EVN could continue to draw power from the renewable energy plants, transmit and distribute such power and collect payments from consumers. Additionally, a standalone legal entity could be created:

- (i) to auction renewable energy capacity subject to a ceiling on tariffs for each technology package / province (to adjust for resource availability),
- (ii) to award licenses being awarded to the bidder seeking the lowest tariffs, and,
- (iii) to execute power purchase agreements and to serve as a counter-party for all commercial aspects of the power purchase agreement.

ENERGY EFFICIENCY

Viet Nam's growth has been driven by industrialization and the country is currently one of the more energy intensive economies in Asia, and in the world. Since the manufacturing sector is generally the most energy-intensive sector in the economy, domestic energy intensity of GDP has steadily increased over the past few years.

Viet Nam has a large potential for saving on electricity-use ("energy efficiency" or "EE") of up to 7.0% relative to the business-as-usual, through to year 2035, with the manufacturing sector offering the largest potential for such savings. The (technical) energy saving potential of some of the industry sectors such as cement production is estimated at 40% of present day consumption per unit of output.

According to World Bank⁶ and UNDP-MPI⁷ estimates, the investment needs in key energy-intensive industrial sectors in the country range from USD 1.427 billion (for cement, steel, pulp and paper, sugar sector) to USD 3.6 billion (if chemical, textile, food processing, bricks and ceramics were to be included). These estimates, however, do not reflect the investment opportunity in the public and residential sectors that might offer large potential for energy efficiency investments, for instance, in street-lighting and heating-ventilation-and-air-conditioning. Table 3 outlines mid-range values of energy efficiency investments in select industry sectors. In all, emission intensity-to-primary energy is estimated to fall⁸ from 2.78 kgCO₂/kgoe to 2.50 kg CO₂/kgoe in year 2035 from exploiting the theoretical potential for energy efficiency in Viet Nam, corresponding to a reduction of some 67 million tonnes of CO₂e in year 2035.

Table 3: Projected investment needs for energy efficiency in selected industrial sectors (in USD)

Industrial sector	Investment need (USD million)
Iron and steel	450
Cement (waste-heat-recovery only)	650
Pulp and paper	306
Sugar	324
Total	1,730

Source: *Private Climate Expenditure of Viet Nam, 2018*

The payback periods on such efficiency investments are estimated to vary by large margins, ranging from under 12 months to being spread over several years, and are substantially influenced by the evolution in end-user electricity prices. It is widely believed that the majority of this funding could be provided by the local banking sector. To put this into perspective as of June 2018, total credit provided by the banking sector to the economy was VND 6,827,140 billion (approximately USD 29 billion), of which VND 1,460,883 billion (approximately USD 6.25 billion) went to the industrial sector.⁹

⁶ World Bank Project Appraisal Document for the VEEIE, 2017; and GCF Funding Proposal for Scaling Up Energy Efficiency for Industrial Enterprises in Viet Nam, 2018

⁷ *Private Climate Expenditure Review of Viet Nam (2018)*

⁸ *Viet Nam Energy Outlook Report, (2017) Danish Energy Agency and MoIT, GoVN, p. 49 of 78*

⁹ <https://www.sbv.gov.vn/>.

Recommendations

Table 4 below lists a number of recommendations to address the principal barriers, to unlock investment opportunities, and ultimately to meet Viet Nam's energy efficiency targets. The recommendations are based on desk research, previous studies (including interviews) and the general feedback that the consultants have been able to obtain from financial institutions and other market participants. Preference has been given to simple recommendations, and those that could be implemented in a relatively short period, and such measures that would be profitable in the short-term. In addition, the order in which the recommendations are listed also reflects this preference, with electricity price adjustments playing a dominant role in decision-making on energy efficiency investments by private sector investors.

Table 4: Summary recommendations for facilitation of investments into energy efficiency

ENERGY & ELECTRICITY PRICE ADJUSTMENTS AND INVESTMENT INCENTIVES
<p>Advance energy and electricity price adjustments.</p> <p>Gradual adjustment of electricity price that would reflect total costs of production (including environmental externalities) is essential for overcoming one of the main obstacles for investments into efficient use of energy in Viet Nam. Low energy prices do not provide financial incentives due to long payback periods. At the very least, it would be useful to adopt a roadmap that would indicate the expected medium-term evolution of end-user energy prices in the country and provide requisite signals to institutions evaluating the returns on potential energy efficiency investments.</p>
<p>Support dedicated credit lines/funds that co-finance EE investments combined with partial credit guarantee instruments.</p> <p>Many of the specific issues relating to barriers for energy efficiency would be best addressed through end-user energy price adjustments. In addition, dedicated credit lines/funds that co-finance energy efficiency investments – possibly combined with partial credit guarantee instruments to address perceived risks – could help unlock further investments. The Bulgarian Energy Efficiency and Renewable Resource Fund is an example of a fund with a longstanding track record.¹⁰ Examples of such targeted energy efficiency financial instruments could be found in Thailand and South Africa as well.</p>
REGULATORY FRAMEWORK
<p>Introduce an ESCO certification or accreditation scheme.</p> <p>An ESCO certification or accreditation scheme will enhance the quality of services provided by ESCOs and confidence in the energy services sector. Such schemes exist in Thailand and India for example. In fact, in India the Bureau for energy efficiency empanels ESCOs through credit rating agencies indicating their implementing capability. The Bureau also accredits energy auditors.¹¹</p>
<p>Develop a set of accepted reference documents for energy performance contracting.</p> <p>Uptake of energy performance contracting can be facilitated through reference documents for contracts, investment grade audits, report templates, M&V protocols, etc., which would be recognized as legitimate by the different market players. For example, in India the Alliance for an Energy Efficient Economy (AEEE) has developed EPC contract templates.¹² Such reference materials could further strengthen the capacity of energy service providers (ESCOs and interested FIs) to invest into energy efficiency.</p>
<p>Facilitate ESCO operations, in particular payment for ESCO services by government-owned organizations.</p> <p>According to current regulations in Viet Nam, payments by the public sector must necessarily be made in return for the supply of specific products, or the provision of services with a defined cost, defined activities and specified equipment. ESCO operations and investments would require adjustment of such public-sector procurement mandates, including removing obstacles such as the least-cost approach used for the final evaluation of tenders, fixed length contracts, necessity for detailed project definition before tendering, affixed project costs, and internal budget allocations based on real expenses. For example Indonesia has taken steps towards adjusting procurement rules by allowing for multi-year payments (contracts).¹³</p>



Impose compulsory energy savings targets for major energy users.

Non-compliance with applicable legal and regulatory obligations¹⁴, particularly those applicable to energy-intensive enterprises, should lead to appropriate sanctions and potentially to the imposition of higher power tariffs to try and incentivise the efficient use of energy. Such command-control instruments for major energy users could potentially be complemented by a trading scheme of energy savings certificates. The Indian Perform, Achieve and Trade (PAT) scheme offers interesting example of such approach.¹⁵

AWARENESS & CAPACITY BUILDING

Raise awareness about energy efficiency investment opportunities and energy efficiency labels and standards.

Awareness campaigns and training efforts that build on past initiatives should target energy-intensive enterprises and the public at large and promote the use of energy efficient equipment and encourage energy performance contracting. Thailand, for example, has implemented training programmes for ESCOs in particular on a large scale.

TECHNICAL ISSUES

Reinforce and improve technical infrastructure for energy efficiency.

Viet Nam should continue developing its system of appliance quality testing laboratories and promoting energy efficiency labelling and standards. Mexico has successfully implemented and promoted such labelling and standards programmes. The country has currently 13 energy efficiency labels for a range of appliances and technologies used in the domestic, commercial, industrial/building and agricultural sector.¹⁶

¹⁰ <https://www.bgeef.com>, <https://www.idc.co.za/special-schemes/afd-green-energy-fund.html>, <http://iepd.iipnetwork.org/policy/energy-efficiency-revolving-fund-eerf>

¹¹ <https://beeindia.gov.in>

¹² <http://www.aeee.in/wp-content/uploads/2016/03/AEEE-Model-EPC-Template.pdf>; The AEEE is a non-profit policy advocacy and energy efficiency market enabler.

¹³ Indonesia issued the Presidential Decree 38/2015 by which EE is deemed an infrastructure project under the public private partnership model. This means that an EE projects, can use the payment for performance scheme in working with the private sector (i.e. ESCO).

¹⁴ The Law on Energy Efficiency and Conservation 2010 obliged major energy users (around 2,000) to develop annual and five-year energy plans, appoint energy managers, develop energy management models, and conduct energy audits every three years.

¹⁵ The PAT is a market-based mechanism to enhance cost effectiveness through certification of excess energy savings in energy intensive industries, which can be traded, and is being implemented by the Bureau of Energy Efficiency (BEE) under the Ministry of Power.

¹⁶ <https://www.gob.mx/conuee/acciones-y-programas/seccion-normalizacion-21484?state=published>

Starting with energy and electricity price adjustments, the above interventions related especially to regulatory conditions can create positive market signals for investors, mitigate the presently perceived investment risks and help lower borrowing costs. Once the local regulatory context improves, investments into renewable energy generation and the efficient use of available energy are expected to follow naturally and support Viet Nam's mitigation aspirations.

FUNDING FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY INVESTMENT

Availability of exploitable renewable energy resources, declining costs of renewable energy solutions and political statements promoting the deployment of energy efficiency theoretically create interesting investment opportunities for such investments in the country.

Yet, at the moment, the local financial sector does not appear to expect a significant increase in demand for investments into energy efficiency and renewable energy projects. According to the State Bank of Vietnam, commercial banks that operate in Viet Nam reported only about USD 0.4 million (VND 9.50 billion) of outstanding credit for renewable energy and energy efficiency by Q1-2018. Future investment demands for these sectors would need to be met, at least partly, by external capital. This is confirmed by the Vietnam Energy Outlook Report (2017) jointly brought out by the MoIT and the Danish Energy Agency.¹⁷

Within this context, UNDP has commissioned an independent study to analyze contextual factors influencing potential mobilization of foreign capital for meeting the future investment needs to help meet energy efficiency and renewable energy policy aspirations in Viet Nam.

The study included a detailed review of literature examining investments into renewable energy and energy efficiency projects in Viet Nam and consultations with well established prospective investors and institutions that could be mobilized to play a bigger role within the country's ambitions to promote energy efficiency and renewable energy, if the specific barriers to investments in these sectors were removed. The potential for investment and the barriers to realizing such potential, as expressed by some of the respondents, are summarized in Table 5.

¹⁷ Vietnam Energy Outlook Report, *ib id*, p. 70 of 78.



Table 5: Potential for and barriers to foreign investments into renewable energy and energy efficiency in Viet Nam

Interviews	Inflow available for potential use in Viet Nam (in USD million)		Remarks
	Equity	Debt	
Respondent 1	500.00	1,000.00	USD 1.0 billion that could be spread across 10 projects. Estimates of debt and equity flowing into Viet Nam (at 33% equity and 67% debt). Bank's engagement in Viet Nam's RE market is presently prevented by Power Purchase Agreements (PPA) that are considered un-bankable.
Respondent 2	90.00	180.00	USD 180 m for Inter-bank Financing Facility for RE; credit line could be expanded if market demand grows. Potentially interested investors face problems with PPA and PPP framework – especially with termination payment due to political force majeure, take-and-pay regime; convertibility risks in case of PPP schemes.
Respondent 3	500.00	1,000.00	Bank has USD 10.0 b for RE investment loans; would be happy to get engaged in emerging market with RE investments in Viet Nam, but so far have no deployment in the country. Bank could theoretically offer up to USD 1.0b (est. at 33% equity and 67% debt) for Viet Nam but has several major concerns about the PPA framework that prevent its engagement.
Respondent 4	500.00	1,000.00	If the regulatory framework gets simplified, Bank could provide USD 0.5 billion annually for RE/EE in SOEs through concessions loans + 0.5million USD annually for project preparation. However, Public Investment Law procedures are too long – larger projects may take several years to develop during which time procedures may change. Flexible credit lines related to RE/EE are effectively not allowed since most RE projects have to be approved by Prime Minister which further complicates lending.
Respondent 5	400.00	1,000.00	Local resources might be sufficient to meet 2020 RE targets but external capital is needed to meet 2030 targets
Respondent 6		840.00	USD 500.0 million credit line for industrial EE; a partial credit guarantee of USD 85.0 m; and USD 10.0 million for TA (capacity building). Estimate assumes that credit guarantee is leveraged by a factor of 4.0.
Respondent 7	500.00	1,000.00	Could offer up to USD 1.0 billion over the next 5 years in case of local demand. However, investor has concerns about PPA (termination payment, curtailment, permitting risks related to land acquisition)
Respondent 8	200.00	200.00	Investments in Viet Nam planned for the next 3 years
Respondent 9	100.00	200.00	USD 1.0 billion (including debt from banks) for four South East Asian countries. Estimate is made for investments into Viet Nam alone.
Respondent 10	50.00	100.00	USD 2.0 billion under management / made more than 25 RE project investments; will consider Viet Nam if conditions improve; debt-equity assumed at 2:1 .
Respondent 11	45.00	90.00	USD 30 to 45 million expected to be invested in Viet Nam in the near future; figures are based on estimated leverage (2:1).
Respondent 12	50.00	100.00	Consultant's estimates of debt and equity; USD 500m allocated for infrastructure projects in all of South and SE Asia. Figures are based on estimated leverage (2:1).
Respondent 13	200.00	400.00	Potential (Conditional): 200m of equity could be mobilized. The key challenges are: lack of clarity on energy price evolution; problems with the PPA (termination conditions); figures are based on estimated leverage (2:1).
Total	3,135.00	7,110.00	

Source: own elaboration