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PRIVATE CLIMATE EXPENDITURE AND INVESTMENT REVIEW OF VIET NAM

In 2015, the Ministry of Planning and Investment of Viet Nam, UNDP and World Bank published the first Climate Public Expenditure and Investment Review (CPEIR) which identified that 88% of the climate-relevant expenditure in Vietnam related solely to adaptation. Expenditures having both mitigation and adaptation functions (mainly forestry) accounted for 10% of the public climate finance spending and only 2% of the public expenditure related solely to mitigation - mainly because mitigation actions are carried out by private sector and utilize private sources of financing.

In order to fill-in the missing information on climate-related private sector spending, the Ministry of Planning and Investment, supported by UNDP and USAID has initiated first Private Climate Expenditure and Investment Review (PCEIR) that focused on the following business areas with the most significant

GHG reduction potentials in Viet Nam:

- renewable energy
- energy efficiency measures in cement sector, sugar cane sector; iron and steel; and pulp and paper.

The PCEIR was conducted through bottom-up approach which involved review of investments in selected sector and determination of approximate unit prices for typical investments through interviews with selected investors.

For renewable energy, the PCEIR indicates that **private sector in 2011-2015 spent approx. USD 9.75 billion on renewable energy projects** mainly in hydropower and with initial uptake of wind power, solar water heaters and biomass (see Table 1 for details).

Table 1: Private investments in renewable energy in 2011-2015

Type	Comments	Number of projects	Total capacity (MW)	Total investment cost (million USD)
Hydropower	Capacity from 1.9 - 340 MW, mostly CDM projects	230	>7000	9,150
	<i>Small hydropower (<30MW)</i>	<i>160</i>	<i>2,000</i>	<i>2,800</i>
Windpower	Capacity from 6.0 - 99.2 MW	5	190	428
Solar PV	Scattered micro-scale projects up to 150 kWp.	One grid connected	5	Grant funding
Solar water heaters		700.000	-	170
Biomass	Mainly co-generation in the sugar industry	6	200	Mostly included in energy efficiency investments
Total		235	7.395	9,748



The price of renewable energy installations is quickly decreasing and the Government of Viet Nam continues issuing policies favouring investments into renewable energy (for example, feed-in-tariff for utility-scale solar PV has been set at 9.35 USCent/kWh, tariff for purchase of wind power price is proposed to increase from 7.8 USCent/kWh to approximately 8.8 USCent/kWh, etc.). Based on this, PCEIR affirms that investment needs of private sector in renewable energy are projected to increase significantly, totaling 4.0 to 4.8 billion USD by 2020.

For **energy efficiency, estimated private sector investments accounted for approx. USD 630 million in 2011-2015** (see Table 2 for details). These figures are relatively low primarily because of limited economic incentives for energy efficiency due to low price of energy. PCEIR predicted that investments in energy efficiency will grow significantly in the coming years as the government continues issuing policies favouring energy sector reform (for example, energy price should be adjusted to reflect actual market price).

Table 2: Private sector investments in selected industries

Industrial Sector	Measures considered	Overall investment need (millions USD)	Estimated investments made in the period 2010-2015
Iron and Steel	Waste heat recovery, construction of closed production lines, replacement of low performance air compressor, and installation of inverter for motor to operate at low or fluctuating loads.	450.0	169.6
Cement	Investments especially into waste heat recovery systems in about 36 cement companies with a capacity above 2,500 tons clinker per day.	650.0	
226.7	Energy efficiency investments in new efficient boilers for cogeneration of heat and electricity, replacement of motors, switching to biomass fuel technology, and chemical waste recovery for heating.	306.0	104.5
Pulp and paper	Energy efficiency investments in new efficient boilers for cogeneration of heat and electricity, replacement of motors, switching to biomass fuel technology, and chemical waste recovery for heating.	306.0	104.5
Sugar	Cogeneration systems at sugar mills.	360.0	127
Total		1,766.0	627.8

As Vietnam becomes increasingly involved in the regional and international integration, investments in advanced and energy efficient technologies will become inevitable in order to reduce production costs and retain competitiveness of the domestic industry.

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In overall terms, the PCEIR identified major investments opportunities in all sectors reviewed if the prices of energy are gradually adjusted. The draft report is being currently reviewed and is expected to be publicly released in spring 2018.

The Private Climate Expenditure and Investment Review of Viet Nam was undertaken within the framework of Low Emission Capacity Building Programme (LECBP) that is supported by the European Union, German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), the Australian Government and the United Nations Development Programme (UNDP).

