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RESEARCH

Green Growth Towards Sustainable Development in Vietnam

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Abstract: Nowadays, growth model towards sustainable development widely recognized by international community is green growth. However, the awareness, understanding and application of green growth are still in process of formation for most countries. Promoting green growth in Vietnam is not only suitable for the current economic integration process, but more importantly it comes from the requirement of internal economy for growth model transformation. Vietnam, after three decades of rapid growing is now facing several development issues such as low economic growth quality, weak competitiveness, low efficiency, social inequality, natural resource depletion, environmental pollution and climate change. In this context, green growth can be a potential solution to these problems and helps Vietnam going towards sustainable development

This paper aims at analyzing basic dimensions of green growth in Vietnam by focusing on following contents (i) development context in Vietnam; (ii) reasons for the selection of green growth model in Vietnam; (iii) commitments and steps of Vietnam towards green growth; (iv) opportunity and the challenge of Vietnam towards green growth model and (v) policy implications for green growth in Vietnam. This paper uses the secondary data gathered from officially international and domestic sources in Vietnam.

Economic growth is a critical goal of all nations. After more than two decades of embracing economic reforms, Vietnam has now joined the group of medium income countries. The paper analyses the relationship between green growth and quality of sustainable development in Vietnam.

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Keywords: Green growth, climate change, energy efficiency, sustainable development, Vietnam Green Growth Strategy.

1. Introduction

After more than two decades of embracing economic reforms, Vietnam has now joined the group of medium income countries. The country has achieved many important United Nations Millennium Development Goals on poverty reduction and hunger eradication. However, along with that growth is the expansion of energy-intensive sectors such as

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manufacturing, transport and power generation. Given the country's dependence on fossil fuels, Vietnam's total greenhouse gas emissions have more than doubled over the past decade, and are expected to triple by 2030 [8]. Vietnam now has the 20th highest carbon intensity in the world. Vietnam is also highly exposed to the effects of climate change, in particular to floods, storms, and sea-level rises. Climate-related natural disasters result in economic losses equivalent to 1.5 percent of GDP, and these losses are expected to increase. At the same time, the recent low growth of total factor productivity has raised questions about the quality and sustainability of the country's rapid economic growth [3].

Taken together, these factors have made finding a more sustainable pathway to development a top priority in Vietnam. In 2012, the government finalized a National Green Growth Strategy that highlights the need for emission reduction targets, industrial and consumer energy efficiency, and ecosystem restoration. Green growth is about making growth process resource efficient, cleaner and more resilient without slowing them down. It also means making investment in the environment to drive economic growth. Within a Green Growth approach long term positive synergies across the three dimensions are focal point. Pursuing Green Growth will bring opportunities for Vietnam not only to add value to products and services, capture international market, and develop clean technologies but also reduce environmental costs and to mitigate climate change impact. It is a win- win approach- it makes sense, locally and globally.

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2. Rationale for green growth in Vietnam

The quality of growth in Vietnam has decreased in the last 5 years. First, there has been a significant decrease in Vietnam's total productivity factor resulting from inefficient use of capital and labor. Second, Vietnam's climate change vulnerability is among the highest in the world and a significant increase in CO2 emission is projected due to rising energy demand. And finally, while Vietnam has experienced a fall in monetary poverty, it has also seen a rise in income and social inequality.

These challenges are all warning on the limitations of the current growth model. The ability of Vietnam to address the quality of its growth is at the core of its development challenges. In the long run, a new model is needed. A Green Growth approach, hence, could be a vehicle for bringing quality at the centre of policy discussion.

Economic dimension

Vietnam has achieved and impressive growth over the last 20 years and has become a middle income country. Particularly noteworthy is the average economic growth rate of 7.5 percent per year during 1998-2008. The country's rapid growth has to a large extent been based on a successful market opening attracting foreign capital and an abundance of low labor. These two elements

account for more than 70% of the growth in the last decade [8].

However, the added value within the exporting sector remains low and productivity in other parts of the economy is lagging far behind. When comparing Vietnam to other ASEAN countries, it is clear that Vietnam has not used the capital inflow and labor force efficiently using total factor productivity (TFP) as an indicator.

Table 1: Total factor productivity contribution to growth 1990 - 2010

	Period 1990 - 2000			Period 2001 - 2010			Development in TFP
	GDP growth rate	TFP contribution	TFP contribution share	GDP growth rate	TFP contribution	TFP contribution share	
Vietnam	7.3	3.2	44%	7.3	1.9	26%	-18%
China	9.9	5.5	56%	9.7	5.0	52%	-4%
India	5.3	2.0	38%	7.3	2.7	37%	-1%
Cambodia	7.3	2.0	27%	9.0	1.3	14%	-13%
Indonesia	4.1	0.5	12%	5.1	2.5	49%	37%
Malaysia	6.9	1.1	16%	5.4	2.7	50%	34%
Philippines	3.0	0.3	10%	4.7	1.8	38%	28%

Source: European Unions (2011)

In the same time, there has been a significant increase of TFP contribution in Indonesia, Malaysia and the Philippines. Both China and India with the same or better growth rates as Vietnam have managed almost to keep the same level of TFP contribution. Within this group, Vietnam stands out with a decrease of 18% in its TFP contribution compared to 1990's. This can be seen in the current macroeconomic imbalances like high inflation as well as microcosmic bottlenecks like qualified skilled labor shortages [3].

Environmental dimension

The economics growth model of Vietnam is now challenged by serious environmental issues including energy dependency and inefficiency, increased level of carbon emission and especially climate change.

Energy import dependency: There is a general consensus among the Vietnamese policy makers and planners that the domestic energy resources of Vietnam are unlikely to be able to meet the increasing energy demand of the nation, which is driven by high growth rate of the economy and population. Table 2 provides a summarized overview of primary energy demand-supply balance for the period 1990-2025. With rapidly increasing energy demand and limited domestic supply, Vietnam is expected to become a net energy importer within the next decade. It is projected that by 2025 the country will need import 48.6% of its total commercial primary energy needs of which coal, oil and gas are expected to account for 18.8%, 23.4%, 5.1%, respectively, in the total imported energy. At the same time, electricity imports will also account for 1.3% of total commercial primary energy requirement [5]. This will lead to a substantial change in the Vietnam's energy structure. Appropriate energy policies are therefore needed to achieve a balance in the sources of energy supply and to avoid energy supply disruption caused by geopolitical disputes [6].

Table 2: Energy balance in Vietnam during 1990 - 2025

Unit: MTOE

Type of energy	1990		2007		2025	
	Demand	Supply	Demand	Supply	Demand	Supply
Commercial	5.4	5.8	31.0	49.4	135.4	88.7
Coal	2.2	2.6	9.9	24.3	64.2	45.0
Oil	2.7	2.7	13.0	16.5	43.7	19.9
Gas	0	0	5.5	5.9	16.3	16.2
Hydro	0.5	0.5	2.6	2.6	6.8	5.4
Nuclear	0	0	0	0	2	2
Renewable	0	0	0	0	1	0
Elec. Import	0	0	0	0	2	0
Noncommercial	18.9	18.9	24.5	24.5	10.6	18.6
Total	24.3	24.7	55.6	73.9	146.0	107.3

Source: JICA (2008)

Energy efficiency: Low energy efficiency (on the demand and supply sides) is another major energy issue facing Vietnam. The major sources of such inefficiency include: old technologies and poor energy management practices, from conversion to processing and end-use levels. Indeed, only new, large-scale combined-cycle natural gas-based power plants incorporate world-class technology and provide high fuel efficiency. Most existing coal and oil-fired plants have low fuel efficiency as their facilities and technology are relatively old (IE 2005). In 2005, energy losses in power generation amounted to 9.5 % of total primary energy consumption. The same explanation could be applied for the demand side where old and high energy intensive technologies are employed. Indeed, both primary and final energy intensities of Vietnam are conspicuously higher as compared with almost all ASEAN and OECD countries. For example, in 2005, the country's primary energy intensity was 0.23 kgOE/$ while ASEAN and OECD averages were 0.2 and 0.18 kgOE/$, respectively [6].

Carbon emission: Vietnam is currently one of the lowest per capita emitters of carbon emissions. In 2007, the country's CO2 emissions per capita were 1.07 tons - approximately 20% of the world average. At the same time, however, CO2 emissions per unit of GDP are very high - about 2 times the world average. The CO2 emissions are expected to grow rapidly as Vietnam industrializes and the economy utilizes more carbon intensive fuels, substituting traditional non-commercial fuels including biomass. For example, in the year 2025, fossil fuels will account for nearly 93 of total commercial, primary energy consumption, of which coal will have a 47% share. Such a significant reliance on fossil fuels, coal in particular, could have serious environmental consequences. On average, the CO2 emissions are projected to increase at an annual rate of 8.5% and could reach 400 millions tons by 2025. Also, SO2 emissions - a key contributor to Acid Rain - are likely to increase from 0.34mn tons currently, to 1.14mn tons by 2025 [5]. Major sources for such emissions are energy, industry and transport sectors, accounting for more than 85% of total CO2 emissions. Therefore, environmental issues will need to be taken into consideration in making plans for economic and energy development [6].

Climate change impacts

According to ISPONRE and UNDP (2009), Vietnam is among the 5 countries most heavily affected by climate change. Of the 84 coastal developing countries investigated in terms of sea level rise (SLR), Vietnam ranks first in terms of impact on population, GDP, urban ex-tent, and wetland areas, and ranks second in terms of impact on land area. About 10.8% of Vietnam's population, mostly those people living in the two river deltas, would be impacted by an SLR of just 1 meter. As to the IPCC (2007), a 1 meter SLR in Vietnam would lead to flooding of up to 20,000 km2 of the Mekong River delta and 5,000 km2 of the Red River delta. In the Mekong River delta alone, more than 1 million people would be directly affected. Also, the Stern Review on the economics of climate change confirms Vietnam's high vulnerability to climate change [7]. Vietnam ranks fourth behind China, India, and Bangladesh in terms of the absolute number of people living in vulnerable, low elevation coastal zones, defined as the contiguous area along the coast that is less than 10 m above sea level. About 43 million Vietnamese, or about 55% of the country's population (38 % of Vietnam's urban population), are living in those zones. This is the highest percentage of all countries worldwide. All in all, the country would face losses totaling US$17 billion per year in case of a SLR of 1 meter [2].

Social dimension

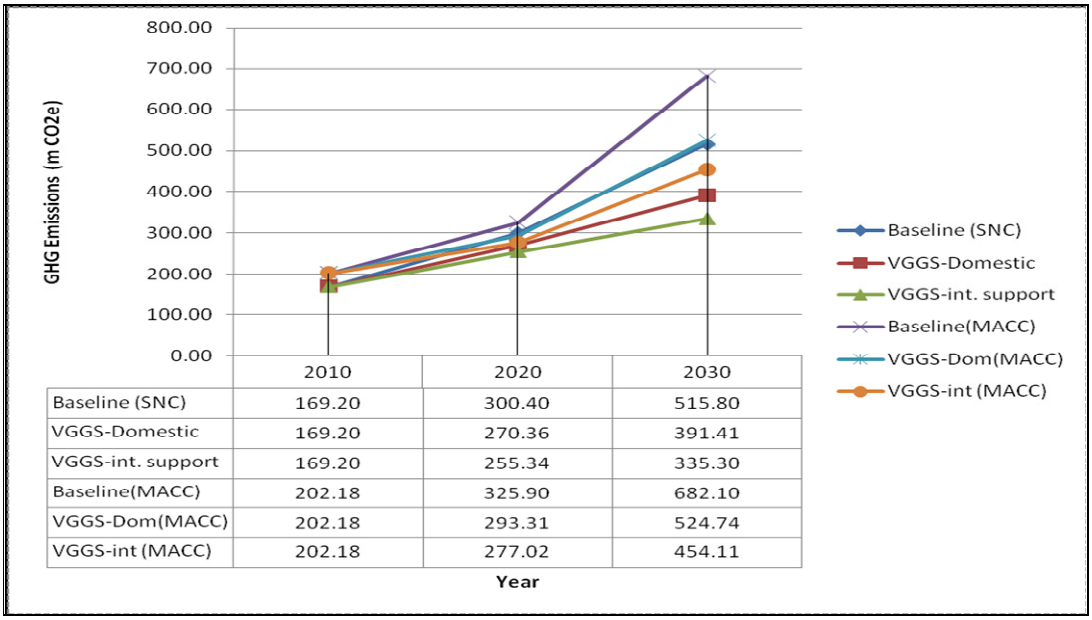
Vietnam has had a relatively equitable development process and it is on track to achieve most of the Millennium Development Goals by 2015. It has also successfully reduced poverty and has been fairly successful in containing economics inequality. But there are signs that this is now changing. As income poverty continues to fall, income inequality has recently risen and regional trends indicate that rising inequality is a feature of Vietnam's current pattern of growth. At the effects on depletion of natural resources and climate change affect those who are the most marginalized. As such, access to clean water is becoming an increasingly critical issue. Widening disparities and inequalities are starting to pose a risk to Vietnam' long term sustainable development [3].

3. Vietnam effort toward green growth

In the above development context, Vietnam considered green growth as a part of a wider economic restructuring agenda in the country and being a crucial step on the path to sustainable development. Embarking on a low emission development path can allow Vietnam to develop new green industries and products, and generate opportunities for increased competitiveness and job creation.

The Vietnam Green Growth Strategy (VGGS) was approved in September of 2012 is a critical effort to synthesize green action plans of major sectors and society in Vietnam toward green growth. The strategy aims to accelerate the process of economic restructuring in order to use natural resources efficiently, reduce greenhouse gas emissions through research and application of modern technologies, develop infrastructure to improve the entire efficiency of the economy, cope with climate change, contribute to poverty reduction, and drive economic growth in a sustainable manner. Three main goals of VGGS include (i) Promote "green production" via more efficient use of resources and new technologies. This objective aims to facilitate sustainable production, green existing business, and create new green businesses. (ii) Reduce the intensity of greenhouse gas emissions by 8-10 percent

as compared to the 2010 level; and reduce energy consumption per unit of GDP by 1-1.5 percent per year. Reduce greenhouse gas emissions from energy activities by 10 percent to 20 percent compared to the business as usual case. This commitment includes a voluntary reduction of approximately 10 percent, and an additional 10 percent reduction with additional international support. This objective underlines Vietnam's commitment to low carbon growth and to global efforts to mitigate climate change and (iii) Stimulate green lifestyles and promote sustainable consumption.



	2010	2020	2030
Baseline (SNC)	169.20	300.40	515.80
VGGS-Domestic	169.20	270.36	391.41
VGGS-int. support	169.20	255.34	335.30
Baseline(MACC)	202.18	325.90	682.10
VGGS-Dom(MACC)	202.18	293.31	524.74
VGGS-int (MACC)	202.18	277.02	454.11

Figure 1: GHG emission in Vietnam to 2030 under VGGS.
Source: VGGS (2012)

The VGGS is driven by several national policies and Vietnam's awareness of, and contributions to, international efforts to respond to climate change. The Vietnam National Climate Change Strategy, approved in December 2011, provides a strong foundation for formulating long-term socio - economic development plans amid climate change challenges. The strategy outlines overall objectives, prioritized projects to be implemented in 2011-2015, and plans for 2016-2025 as well as a vision to 2100. It considers a low carbon economy and green growth as principles in achieving sustainable development, with greenhouse gas emission reduction and removal to become a mandatory index in social and economic development.

To guide implementation, a "roadmap" was developed for the period 2012 through 2050 that outlines the key processes and actions to take place in the coming years and decades.

Figure 2: Green growth strategy roadmap.
Source: VGGS (2012)

Because the VGGS requires coordination across a wide variety of ministries and sectors, Vietnam established an Inter-ministerial Coordinating Board under the National Committee on Climate Change chaired by a Deputy Prime Minister, to support effective implementation of the VGGS.

As part of the VGGS, Vietnam has established a series of greenhouse gas emission reduction and related targets based on studies of sectors with high emissions, such as the energy, forestry, and agriculture sectors. Vietnam also undertook a Marginal Abatement Cost Curve (MACC) analysis on key sectors which showed significant win-win options in the energy and agricultural sectors and large cost effective opportunities in the forestry sector. The study underlined that with appropriate levels of investments, Vietnam's greenhouse gas emission reductions targets can be achieved while maintaining high growth levels.

In order to mobilize resources for implementation, Vietnam is looking to effectively blend and manage international and national, public, and private sector finance for green investments. These include a variety of strategies to mobilize financing and encourage domestic and international organizations to provide financial assistance for the VGGS in a focused and effective manner, prioritizing win-win solutions. Some main activities include (i) Increase investment from the state budget, taking into account the decentralization and mainstreaming processes of budget management for green growth, and assessment of new funding mechanisms such as the possibility of a Green Growth Fund. (ii) Mobilize international support through the Green Climate Fund and other Official

Development Assistance opportunities. Through a Climate Public Expenditure and Investment Review (CPEIR), develop and apply financial mechanisms that suit existing international climate change policies and enable the country to mobilize and use effectively bilateral and multilateral financial aid for responding to climate change. (iii) Promote private sector engagement and promote green foreign direct investment. (iv) Encourage further development of market-based mechanisms and financial instruments, such as the CDM. Consider a shift in fiscal policy towards taxation through wider application of eco-taxes and a carbon tax and (v) Increase management and coordination in using domestic and international financial resources for responding to climate change.

Initiatives in Vietnam toward Green Growth

LOW CARBON SOCIETY: Vietnam has developed scenarios for a low carbon society, with projections to 2030. Thescenarios forecast CO emissions from sectors such as energy, transport, construction, land use, forestry, and agriculture.
ENERGY: Initiatives include the Vietnam Law on Energy Efficiency and Savings, and nationally appropriate mitigation actions (NAMAs) on scaling up mitigation activities in the cement sector.
TRANSPORT: Vietnam is working to improve energy efficiency in the transport sector in several ways, including by (a) technological innovation, regular maintenance of machinery and transport equipment, and disseminating eco-driving skills for drivers; (b) increasing water based transportation and railways; and (c) mandating a limited lifecycle for commercial motor vehicles.
INDUSTRY: An ADB project includes initiatives for GHG mitigation in industrial sectors such as street light energy efficiency and green building in the residential and commercial sectors.
AGRICULTURE/FORESTRY: "Programme 661" is reforesting five million hectares nationally and Vietnam has developed a national Reducing Emissions from Deforestation and Forest Degradation (REDD+) strategy. REDD+ is a mechanism being designed to provide financial rewards to forest owners and users. The National REDD+ office was established in 2011 to coordinate and manage the process of developing tools to implement Vietnam's National REDD Program. The various partners are rapidly moving the country forward to make REDD+ a reality in the country.
LOW CARBON PLANNING CAPACITY: Strengthening Planning Capacity for Low Carbon Growth in Developing Asia is funded by Japan, UK, and the ADB with activities in several Asian countries including Vietnam. The project focus is on energy (power, transport, household, industry sectors), land use and land use change.
GHG INVENTORY: The "Capacity building of national GHG inventory in Vietnam" project is supported by the Japan International Cooperation Agency (JICA). Vietnam is part of the "Southeast Asia Greenhouse Gas Inventory Project" supported by the US Agency for International Development (USAID) and the US Environmental Protection Agency (USEPA) in partnership with the UN Framework Convention on Climate Change Secretariat.
WASTE: Vietnam is undertaking a study on NAMAs in a measurement, reporting, and verification (MRV) manner in the waste sector. This includes identifying a baseline and NAMA scenarios in the waste sector; drafting domestic guidelines for a NAMA selection and MRV of NAMAs in the waste sector; and a technology needs assessment for the waste sector.

Besides improving the system of laws and institutions to promote green growth, Vietnam is also very active in international cooperation to embrace the experience and financial support of other countries and international organizations for achieving targets of VGGS. Many international agencies are also now supporting Vietnam in its low carbon development efforts. Main donors are the World Bank, ADB, European Unions, United Kingdom's Department for International Development (DFID), Japan International Cooperation Agency (JICA), Korean International Cooperation Agency and the governments of Germany, Switzerland, Denmark and the UK.

Vietnam Low Carbon Development Forum was held in 2013 to facilitate experts from the World Bank, Asian Development Bank (ADB) and UNDP, other government ministries, and a wide range of donors to support Vietnam to meet emerging low carbon development objectives. Among other initiatives, the World Bank in 2012 approved a $70 million project to support the government of Vietnam in adopting policies and strengthening institutional capacity to promote climate resilience and lower carbon intensity development. In addition, the Bank's Energy Sector Management Assistance Program (ESMAP), with support from the (DFID), is providing technical assistance to help Vietnam review its green growth options. A scoping study completed looks at low carbon development potential in transport, agriculture and power. It also includes a macroeconomic assessment that gauges the impact of possible mitigation efforts on Vietnam's economic and social development.

Donors also support Vietnam on training low carbon growth models and the Energy Forecasting Framework and Emissions Consensus Tool (EFFECT) to build consensus on greenhouse gas mitigation scenarios. Currently, teams from the Central Institute for Economic Management, the Institute of Energy and the Transport Development and Strategy Institute, are now working with ESMAP team to model further low carbon development options focused on transport and power generation.

4. Opportunities and challenges for green growth in Vietnam

4.1. Opportunities

For Vietnam, green growth is a key to resolving the issues in the current growth model as low labor productivity, intensive and waste of resources, environmental pollution and low technology. With green growth, the productivity and quality of the economy can be improved in a sustainable manner. Therefore, green growth has an important position in in-depth growth strategy in Vietnam in the coming time. Some favorable conditions for green growth in Vietnam include: Firstly, in the past 10 years, the legal system and policies for environmental protection and sustainable development are more and more increasingly completed creating legal foundation for implementing green economy. In addition to the Law on environmental protection (2005), Vietnam has enacted other laws relating to environmental protection including Law and Forest Protection and Development (2004), Law on Chemical (2007), Law on Biodiversity (2008), Mineral Law (2010), Law on Energy Efficiency and Conservation (2010), Law on Environmental Protection Tax (2010) and the Law on Natural Resource Tax (2009). Directly related to green

growth, besides VGGS, Vietnam also issued the National Strategy on Climate Change (2010), Resolution of the Party Central Committee on Climate Change (2013) and the National Program for developing the Environmental Industry (2008). Secondly, financial resources and spending for environmental protection and green growth are also improved significantly in recent years. Since 2006, according to the Law of Budget, spending for environmental protection is not less than 1% of the national budget. Thus, Vietnam has annually spend about USD450 millions for environmental protection. National Congress is now submitting requirement to increase spending for environmental protection up 2 % from the 2015 budget. At the private level, along with the process of globalization and international economic integration, implementation of social responsibility of business (CSR) including environmental protection has been initially implemented in multinational corporations, foreign -invested enterprises and some domestic corporations on textile, leather, fisheries, electricity, coal and minerals. Although the investment of the private sector to environment is not large in scale, the change in environmental protection awareness to ensure integration of private sector is a positive signal for green growth. On the whole country, there have appeared many models of urban ecology, industrial ecology and ecological production households. In recent years, businesses operating in the environmental services sector are also growing rapidly due to increasing social demand for environmental protection. There are now nearly 4,000 businesses in the service environment operating in 46 provinces and cities in the field of wastewater treatment, processing and recycling of solid waste, environmental impact assessment and environmental technology.

Thirdly, the strong economic integration over the past decade gives Vietnam an opportunity to transfer environmentally-friend technology platform towards green growth. Currently, Vietnam is ranking 4th in ASEAN in attracting foreign capital investment (FDI) with approximately USD21 billion in 2013. Data of MOST (2013) shows a total contract of technology transfer certificates issued from 1999 to 2012 is 838 contracts. In particular, the number of technology transfer contracts from FDI projects accounted for over 70%. For recent years, FDI has contributed importantly to promote innovation and technology transfer in general and environmental technology in particular in Vietnam, especially in the field of oil and gas, transportation, construction, mechanical engineering and electronics, textile, footwear and renewable energy.

Fourthly, with favorable natural conditions, Vietnam has great potential to develop renewable energy. According to the Ministry of Industry and Trade (2012), Vietnam is one of 14 countries around the world have great potential for hydropower with 120,000 hydropower stations total estimated capacity of 300 MW. Vietnam also has about 200 hot springs with temperature from 40-150 C concentrated in the central region which is ideal condition for geothermal power stations. In addition, more than 100,000 rice millers in the Mekong Delta can provide the raw material for rice husk power plants with a total capacity of with 70MW. Currently, number of bagasse from sugar mills can also supply input for power stations with a capacity of 250MW. In addition, biogas in the Red River Delta and the Mekong River are now

being used by thousands of households for cooking, lighting and running of small capacity engines. Solar power in Vietnam is also abundant with thermal radiation levels from 3 to 4.5 kwh/m2/day (winter) and 4.5 to 6.5 kwh/m2/day summer. The potential for wind energy is quite large, with 860-1.410KWh/m2/year in islands and 800-1.000KWh/m2/year in coastal areas.

Last but not least, the strong trend of shifting to green economy at international level creates opportunities for Vietnam to learn experience and participate in the process of green growth implementation. In Asia, in the "East Asia Climate Forum" in Seoul in 2009, regional countries have exchanged views, share experiences and related policies on the establishment and implementation of green growth. "Seoul Initiative on Green Growth in East Asia" was also adopted in the framework of the forum. In Southeast Asia, ASEAN Joint Declaration (7/2010) emphasized that partners and international organizations have an important role in supporting ASEAN moving closer to the model development "Reducing Carbon - Green Growth". In 2010, at the Summit of the Asia - Europe Meeting (ASEM) in Brussels, the Prime Minister of Vietnam officially proposed Asia - Europe collaborative initiatives on green growth highly appreciated by many organizations and ASEM member countries. At the meeting of APEC in 2011 in Hawaii, the APEC leaders also adopted the Honolulu Declaration identifying the need to deal with economic and environmental challenges in the region through green economy, low carbon society, energy security and efficiency and green job. APEC, from 2012 will develop a list of environmental goods and reduce tariffs on these goods by the end of 2015. APEC will also remove non-tariff barriers include ratio requirements for localization services and environmental goods. To promote green growth goals, APEC will implement measures to cut down 45% energy use intensity of APEC countries in 2035 compared with 2005.

4.2. Challenges

Vietnam's economic growth was mainly based on quantitative rather than qualitative development, featuring high fuel and energy consumption in making products, thereby hurting the environment. Eco-friendly industries are largely underdeveloped. The current usage of natural resources is irrational and profligate, posing a real threat to the environment in a variety of areas. Power consumption in Vietnam quadrupled in the past decade on the back of vigorous economic development and booming population growth. Critically, while energy demand spiked, energy usage has been ineffective and wasteful, proven through the fact that fuel consumption per product in Vietnam was 1.5 to 1.7 times higher than Thailand and Malaysia. Escalating energy prices have driven up production costs and products and services have become costly which in turn undermined business efficiency, competitiveness and profit margins. The best way to save costs would be via more efficient resources and energy usage and reducing energy losses in production. However, the lack of financial sources and limited capacity of financial institutions hampers the implementation of sustainable energy projects.

Instead of using fossil fuels, green growth uses renewable energy and low carbon technologies, and encourage measures for energy efficiency. As Vietnam economy is accelerating, it is difficult to cut down fuel

consumption and using alternative and more luxuries fuels. Any restructuring process also leads to slower growing rate to convert. This process will reduce the growth itself in the short term and it will affect the employment, income and welfare. The VGGS is a good starting point for greening Vietnam economic growth. However, it is not entirely clear how this strategy related to other policies, plans and strategies. Some of targets will most likely need to be revised when data is more available and the financing mechanism could be more specifically defined.

Financial resource is one of the fundamental barriers to green growth in Vietnam. 90% of enterprises in Vietnam are small and medium (SME), of which technology investment only accounts for 1% -3% total revenue annually. Therefore, the Government should have clear policies to support business making investment in clean technology, especially tax policy, funding incentive or interest rate support. The World Bank said that the financial mechanism should be more clearly defined in the VGGS, especially incentives for the private sector because there should be more involvement of this sector in this strategy [11].

5. Green growth - the way a head

It is believed that in order to drive a transformation from the current growth model towards Green Growth, Vietnam needs to consider some key initiatives in the short term:

Set target for GHG emission reductions: commitment to GHG emission reduction targets through a sectoral approach will cultivate Vietnam as a progressive force and as a serious Green Growth country in the Asian region. It will spur investments in energy efficiency in current industries and create demand for green high tech development. Sector - based baselines for GHG emission need to be established and a solid monitoring, reporting and validation system to be developed to follow up on progress.

Establish an effective public framework: Greening of an economy requires financial and human resources as well as effective and coordinated governance regime to establish and support implementation of green policies, regulation and initiatives. Clear government commitment throughout the public sector is needed. Policy and institutional coherence is necessary. This can be supported by integrating Green Growth goals (environment, social and economic) into public planning, i.e. master plans, social economic development plans, investment plan, land use plans, SOE restructuring plans, technological renovation, etc. Policy and regulation integration should take place both 'vertically' between levels of government; and 'horizontally' between different sectors of government. Work on establishing a coherent green legal framework and a transparent financing mechanism should be started.

Involve the private sector and enhance financial institutions for green growth: Government initiatives promoting capacity development in areas such as cleaner production, eco efficiency, pollution control and lifecycle management as well as facilitating absorption and diffusion of new green technologies would be beneficial for involving the private sector to transit to a green growth model. A substantial and effective mechanism for green capacity development access to green investment capital and technology transfer driving concrete

implementation of green business should be prioritized.

It is also important to recognize the role of local financial institutions in spurring investments in energy efficiency in Vietnam. The practice in new emerging economies shows that financing efficient energy usage has been and will be a new promising business field for banks. By enacting the Law on Energy Efficiency, the government of Vietnam recognized that improving energy efficiency will lead to better energy security and availability for the country and improved competitiveness of enterprises. The ever increasing energy costs, unstable and inadequate energy supply is resulting in Vietnam's burgeoning demands for energy efficiency and cleaner production which should pave the way for the financial market to step in. Considering the current economic turmoil, banks pioneering strategies and rolling out products to finance energy efficiency will gain an advantage as innovative, and be considered as contributing positively to the sustainable development of the country. Through funding energy efficient projects for small and medium-sized enterprises, banks can both help businesses sharpen competitiveness and boost profits and develop their customer portfolio and increase market share.

Enhance the role of green consumption: Consumers have a critical role in green growth, they creates "green demand" for green goods and services. In this way, as the largest consumer, the government should take the lead in the procurement of green goods and services. In addition, government can increase the use of market mechanisms (through taxes, fees, trade regime) to encourage businesses to internalize the costs of environmental and application of green. It is also important to encourage the development of renewable energy and "green creation", and support environmental management models through public - private partnership (PPP).

Get the energy price right: Vietnam is coping electricity and fossil fuel prices equaling a substantial indirect subsidy to energy price causing inefficiency in energy supply and demand. This subsidizing is not sustainable as it creates increased social inequality by benefiting the richer more than the poor. It hampers national competitiveness by reducing the incentive for continued increased effectiveness, and it contribute to climate change by higher than needed GHG emissions. An energy fiscal reform has the potential to deliver economic, social and environmental benefits contributing to green of the economy. A carefully thought out fiscal reform of energy pricing to avoid wasteful consumption and negative environmental externalities should be initiated.

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