



Germany's carbon market cooperation with Viet Nam: Prospects for engaging with Article 6 of the Paris Agreement

Editorial information

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Project Background

This case study is part of the third work package of the research project “Analysis of interactions between new market mechanisms and emissions trading systems” tendered by the German Emissions Trading Authority (DEHSt) at the German Environment Agency (UBA) (FKZ 3714 41 506 0). It builds upon two previous outputs produced under the project (see Kachi et al. 2016; Cames et al. 2016).

Study objectives

Germany has been a key-actor in promoting market instruments and in fostering an international carbon market in the past. In the context of the paradigm shift induced by the Paris Agreement, the question arises in how far the existing German cooperation in the field of carbon markets needs to be readjusted and further developed in line with rules and regulations to be further developed under Article 6, as well as incorporating the interests of Germany and its partners. The purpose of this research is to gather evidence towards answering this question.

To achieve this purpose, a focus has been placed on three exemplary cases from countries that have traditionally collaborated with Germany on carbon markets. The case studies build upon the rationale that different countries find themselves at different stages of carbon market development and that the development stages have specific implications for the potential use of Article 6. Deeper thought is given to each country’s explicit interest in participating in carbon market development in a post-Paris world and its capability to realise this interest. In the absence of concrete rules for Article 6, the assessment provides a first order estimate of the readiness of countries to engage in Article 6, and identifies pathways for Germany to continue supporting its partner countries in developing rule-based and well-functioning market instruments.

Approach

The case studies are the concluding component of a three-stage framework in the aforesaid project:

- 1. German carbon market cooperation:** As a first step, current German engagement in carbon market cooperation, including in major initiatives and funds, was outlined. This set the stage for compilation of a comprehensive carbon market cooperation inventory.
- 2. Country selection process:** In the second step, the cooperation inventory was taken as the basis for selecting countries for the case study assessment. Three candidates were chosen based on a multi-step selection approach. These represent a spectrum of different levels of carbon market development (from early to advanced). The selected countries were Ethiopia (early), Viet Nam (medium) and Ukraine (advanced).
- 3. Case studies:** An in-depth analysis of the three case countries was undertaken in the third step. The case studies provide a first order estimate of a countries’ readiness to engage in different market options presented by Article 6 and the pathways for future cooperation with Germany for developing rule-based and well-functioning market instruments.

Note: The first two components have been developed as a stand-alone document. These along with the other two case studies can be found at: <https://www.dehst.de/EN/carrying-out-climate-projects/prospects/prospects-node.html> .

Methods

The case studies combine a thorough desk research with expert interviews to arrive at a meaningful analysis and derive concrete recommendations on a country level and beyond. They also benefit from two international workshops carried out in January 2017 and May 2017 that provided additional insights and feedback on the assessment.

Acknowledgement

We sincerely thank Vietnamese representatives from the Department of Meteorology, Hydrology and Climate Change (Dr Luong Quang Huy), the Ministry of Natural Resources and the Environment (Mr Pham Van Tan) and the Ministry of Planning and Investment (Mrs Nguyen Tuan Anh) for their valuable inputs and review. The research also benefits from inputs provided by participants of the two project workshops conducted in January 2017 and May 2017.

Finally, the paper benefits from inputs provided by Dr. Karsten Karschunke from the German Environment Agency at various stages of this research.

Abstract

This paper discusses the current readiness of Vietnam to engage in carbon market options that Article 6's provisions may present. Engagement readiness is discussed for three indicators: enabling conditions present in the country to participate in markets; feasibility of maintaining robust accounting and MRV to maintain quality of generated reductions and transparency of transfers; and the compatibility of the country's nationally determined contribution (NDC) to maintain the environmental integrity of Article 6 and strengthen mitigation ambition of the Paris Agreement. The paper argues that at the current level of capacity, crediting instruments seem to be most feasible in the short term. In the medium to longer term, the linking of the proposed small scale ETS for the iron and steel sector may be a future option for Viet Nam. These assertions are arrived at using empirical evidence from interviews, project workshops and literature review on various factors discussed under the three indicators.

Based on the assessment, recommendations are made for Germany to further support Vietnam to participate in Article 6. Three entry-points are recognised: first, furthering in-country MRV capacities for market mechanisms; second, providing focussed technical support on common elements/linkages between Article 6 and NDC implementation; and third, sharing own experiences and lessons learnt for instrument design and implementation.

Kurzbeschreibung

Die Fallstudie diskutiert Vietnams 'Bereitschaft zur Nutzung von Kohlenstoffmarktmechanismen, die möglicherweise im Rahmen des Artikels 6 des Pariser Abkommens umgesetzt werden. Die Bereitschaft für ein mögliches Engagement Vietnams im Kohlenstoffmarkt wird anhand von drei Indikatoren betrachtet: i) die Rahmenbedingungen im Land, welche eine Teilnahme am Kohlenstoffmarkt erleichtern; ii) die Durchführbarkeit von robusten Emissionsberechnungen und MRV, um die Qualität der generierten Emissionsreduktionen und die Transparenz ihrer Transfers zu gewährleisten; und iii) die Kompatibilität des nationalen Klimabeitrags (NDC) mit Artikel 6, um die Umweltintegrität zu erhalten und die Minderungsambition des Pariser Abkommens zu stärken. Das Papier argumentiert, dass die Baseline-und-Crediting-Ansätze auf derzeitigem Niveau der Kapazitäten kurzfristig am ehesten umsetzbar sind. Mittel bis längerfristig könnte die Verknüpfung des vorgeschlagenen Emissionshandelssystems eine Zukunftsoption für Vietnam darstellen.

Die in der Studie vorgestellten Ergebnisse basieren auf empirischen Daten aus Interviews, Projekt-workshops und Literaturrecherche zu den drei genannten Bereitschaftsindikatoren. Ausgehend von der Bewertung der Indikatoren werden Empfehlungen ausgesprochen, wie Deutschland Vietnam hinsichtlich der Teilnahme an den Mechanismen unter Artikel 6 bestmöglich unterstützen kann. Drei mögliche Ansatzpunkte für eine solche Unterstützung werden identifiziert: zunächst steht eine Förderung der MRV Kapazitäten für Marktmechanismen im Vordergrund; an zweiter Stelle steht die zielgerichtete technische Unterstützung von gemeinsamen Elementen und möglichen Verknüpfungen zwischen Artikel 6 und der Implementierung des nationalen Klimabeitrags (NDC); und drittens wird das Teilen eigener Erfahrungen und Erkenntnisse hinsichtlich der Ausgestaltung und Umsetzung von Marktinstrumenten hervorgehoben.

List of Abbreviations

BAU	Business as usual
CAT	Climate Action Tracker
CDM	Clean Development Mechanism
CER	Certified emission reductions
CPA	Component project activities
CORSIA	Carbon Offsetting and Reduction Scheme in International Aviation
DMHCC	Department of Meteorology, Hydrology and Climate Change
ETS	Emission Trading Scheme
GEF	Global Environmental Facility
ICAO	International Civil Aviation Organisation
IKI	International Climate Initiative
ITMOs	internationally transferable mitigation outcomes
JCM	Joint Crediting Mechanism
LDC	Least Developed Countries
MBI	Market Based Instrument
MAC	Marginal Abatement Cost
MOC	Ministry of Construction
MOIT	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
MRV	Monitoring, reporting and verification
NAMA	Nationally Appropriate Mitigation Actions
NDC	Nationally Determined Contribution
POA	Programme of Activities
PDD	Project Design Document
PMR	The Partnership for Market Readiness
UNFCCC	United Nations Framework Convention on Climate Change

1 Introduction

Vietnam	
Profile:	Developing country
Income group:	Lower middle income
Population:	91.7 million (2015)
Total emissions:	246.8 Mt CO ₂ e (including LULUCF) in 2010
Per capita emissions:	1.7 tCO ₂ e/capita (2013)
Key growth sectors:	Services, Industry

Following the reunification of the country in 1976, the Socialist Republic of Viet Nam has been governed as a one-party state by the Communist Party of Viet Nam. Socio-economic reforms during the 1980s, referred to as ‘Doi Moi’ (meaning economic rejuvenation), were intended to facilitate a transition from a centralised economy to a ‘socialist-oriented market economy’ (Hays 2008). The reforms encouraged the establishment of private businesses and foreign investment, which led to the country experiencing rapid economic growth between 1990 and 2010 (Table 1). During this time period, the value added from manufacturing and service sectors increased as the country’s reliance on the agricultural sector declined slightly (Table 1). Breu et al. (2012) explain that this economic transition was further supported by the country embracing more open trading relations by both joining the World Trade Organisation (WTO) in 2007 and normalising trade relations with the United States. Indeed, the import and export of goods and services have increased considerably since 1990 (Table 1).

Table 1: Overview of socio-economic indicators for Vietnam

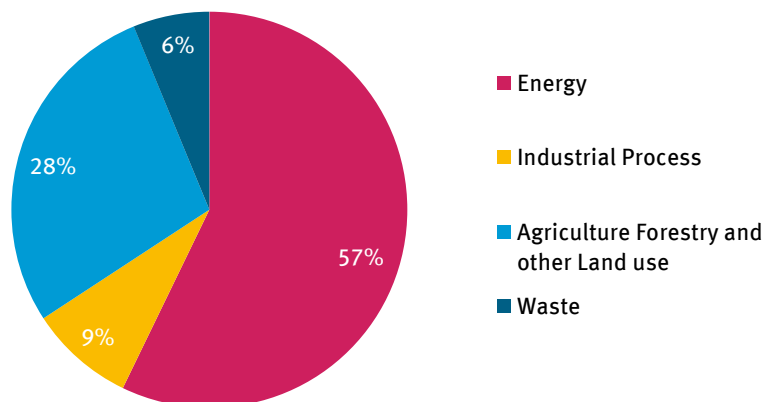
	1990	2000	2010	2011	2012	2013	2014	2015
Population, total (millions)	66.0	77.6	86.9	87.9	88.8	89.8	90.7	91.7
Population growth (annual %)	1.9	1.3	1.0	1.1	1.1	1.1	1.1	1.1
GDP (current in billion USD)	6.5	33.6	115.9	135.5	155.8	171.2	186.2	193.6
GDP growth (annual %)	5.1	6.8	6.4	6.2	5.2	5.4	6.0	6.7
Agriculture, value added (% of GDP)	38.7	22.7	18.4	19.6	19.2	18.0	17.7	17.0
Industry, value added (% of GDP)	22.7	34.2	32.1	32.2	33.6	33.2	33.2	33.3
Services, etc., value added (% of GDP)	38.6	43.1	36.9	36.7	37.3	38.7	39.0	39.7
Exports of goods and services (% of GDP)	36.0	50.0	72.0	79.4	80.0	83.6	86.4	89.8
Imports of goods and services (% of GDP)	45.3	53.3	80.2	83.5	76.5	81.5	83.1	89.0

Source: World Bank 2017

The majority of emissions in Viet Nam come from the electricity sector (Figure 1). Despite the economic reforms that have taken place in the country, the electricity sector is still mainly controlled by a state owned utility called Viet Nam Electricity (ENV) that is responsible for the majority of electricity transmission, distribution and generation in Viet Nam. Given the structure of the energy market in the country, fossil fuel subsidies are prevalent with electricity prices capped and differentiated for different users and domestic coal prices are set below market prices in order to enable cheap electricity production and manufacturing (Government of Viet Nam 2014a).

Under such a favourable policy environment, the use of fossil fuels in total energy consumption has risen from 28 % in 1990 to 70 % in 2010 resulting in CO₂ emissions per capita increasing from 0.3 to 1.7 metric tons over the same time period (World Bank 2017). It is however important to acknowledge that the goal of the Vietnamese government is to develop a competition based generation, wholesale and retail market by 2023 and that the average electricity selling price has continuously increased in the last few years; albeit it still remains too low to finance overall electricity generation costs (Cattelaens et al. 2015).

Figure 1: Overview of Viet Nam’s emissions profile and major contributing sectors



Source: Government of Viet Nam (2014b)

Given that the rapid economic growth in Viet Nam is based upon a high carbon infrastructure, the emission profile of the country is expected to increase in the short to medium term. This is reflected in the country’s Nationally Determined Contribution (NDC) submission, where Business As Usual (BAU) emissions are forecast to increase from 246.8 MtCO₂e in 2010 to 787.4 MtCO₂e in 2030 under the assumption of continued economic growth and the absence of climate change policies (Government of Viet Nam 2015). However, with the adoption of the Green Growth Strategy in 2012 the country hopes to implement a range of policies to divert away from this BAU emissions projection (Government of Viet Nam 2014a). Indeed, the revised Power Development Plan VII for the period 2016-2030 (approved by the Prime Minister in March 2016) puts a stronger emphasis on renewable growth, fuel diversification and transmission reliability (Cattelaens et al. 2015).¹ At the same time, under the plan, Viet Nam envisages adding around 40 GW of new coal capacity, which if implemented, would have a detrimental impact on the country’s ability to reduce GHG emissions in the energy sector.

Germany has built a solid partnership with the country over 20 years by collaborating on a range of activities. Currently the GIZ are involved in an ongoing project until 2018 that aims to create an overarching framework for nationally appropriate mitigation actions (NAMAs) and measurement, reporting and verification (MRV) in Viet Nam. There is a need for continuation and realignment of such support post Paris. The carbon market framework agreed in Paris will have a much closer link with national climate mitigation contributions than was the case under the former climate regime. Yet, much of the future carbon market design is still on the drawing board. This ambiguity in understanding how markets will develop and the links it has with national policy frameworks and international commitments creates a need for research at an international and country level. Through this case study, options for connecting these loose ends are conceptualised in a Vietnamese context and recommendations are developed for further German cooperation in order to help achieve them.

The paper is structured as follows: Section 2 provides the background on the carbon market experience of Viet Nam from the years of the CDM to their plans under the NDC. Section 3 outlines Viet Nam’s position for the use of Article 6 of the Paris Agreement and identifies current capabilities for participation. Keeping these background elements in mind, Section 4 provides an overview of the market options under Article 6 and establishes an evaluation framework, which is then used for the assessment in Section 5 on Viet Nam’s readiness to engage in market mechanisms. In Section 6, recommendations are provided in the conclusion on the role of Germany’s cooperation to support Viet Nam’s participation in market mechanisms under Article 6.

¹ The revised Power Development Plan increases the renewable generation target from 4.5 % to 6.5 % by 2020 and from 6 % to 10.7 % by 2030 (GIZ 2016).

2 Setting the scene: carbon markets in Viet Nam

With the adoption of the Green Growth Strategy in 2012, the Vietnamese government has set the overall objective of decarbonising its economy by setting both GHG intensity targets (e.g. relative to GDP) and GHG reduction targets (e.g. relative to BAU) (Government of Viet Nam 2014a).² It is envisaged within the Green Growth Strategy that carbon pricing (both domestic and international) will play an important role in mitigation activities. Therefore, the following sub-sections provide an overview of the country's experience so far with carbon markets and highlight the potential lessons learnt in order to inform the country's use of market mechanisms in the future.

2.1 Glance into the past: CDM experience, opportunities and challenges

As of February 2017, 255 CDM projects in Viet Nam have been registered, which have generated approximately 16.5 million Certified Emission Reductions (CERs) (UNEP DTU Partnership 2017a).

- ▶ Viet Nam is ranked fourth internationally in terms of the number of registered CDM projects, following China, India and Brazil.
- ▶ Viet Nam is ranked seventh internationally in terms of the total issuances of CERs, following China, India, Brazil, Mexico, South Africa and Indonesia.

According to the Government of Viet Nam (2014a) the relatively late registration date of CDM projects in Viet Nam, due in part to the lengthy validation and registration processes of the CDM, impacted the country's ranking in terms of the total issuances of CERs. While the majority of CDM projects in Viet Nam were registered during 2012 (e.g. 54 %), the number of CERs issued from these projects only represent 18 % of the total (UNEP DTU Partnership 2017a). Given that the late registration of these CDM projects coincided with the collapse in the CER price, the Government of Viet Nam (2014a) argue that the monitoring and issuance for many projects is no longer financially 'worthwhile' for project developers to continue.

The CDM portfolio of Viet Nam is dominated by hydro projects that account for 78 % of the total number of registered projects (Table 2). The majority of the programme of activities (PoAs) that have been registered in Viet Nam also relate to hydro power projects (e.g. 3 out of 9). Once a PoA is registered an unlimited number of component project activities (CPAs) can be added without undergoing the complete CDM project cycle. However, the uptake of this programmatic approach is yet to be fully utilised in the country with only 112 kCERs issued for CPAs, which are all generated from hydropower projects (UNEP DTU Partnership 2017b)

Table 2: Portfolio of CDM projects in Viet Nam

Project type	Registered projects	Total issuance (kCERs)
Biomass energy	16	85
EE Households	1	
EE own generation	2	
Fugitive	1	8857
Hydro	200	6450
Landfill gas	7	248
Methane avoidance	22	638
Reforestation	1	
Wind	5	247
Total	255	16526

Source: UNEP DTU Partnership (2017a)

² By 2030 Viet Nam aim to reduce GHG emissions by 8 % compared to BAU with domestic resources, which will be achieved in part by reducing the emission intensity per unit of GDP by 20 % compared to the 2010 levels and by increasing forest cover to the level of 45 % (Government of Viet Nam, 2015).

The lack of diversity in the CDM/PoA portfolio of Viet Nam is due partly to the dominance of unilateral projects (e.g. projects undertaken without a foreign partner), which may have limited incentives for technology transfer, innovation and international cooperation (Bruyninckx et al. 2013). Unilateral projects are common as Annex I countries (developed countries and economies in transition) prefer to simply buy CERs rather than invest in the development of CDM projects that are characterised by a diverse set of risks (e.g. policy uncertainty, land acquisition, equipment purchasing, implementation uncertainty etc.). Annex I countries therefore shifted the risks related to equity investments to the companies in the countries hosting the CDM projects (Bruyninckx et al. 2013). However, in the absence of foreign involvement in the development of CDM projects, several barriers have emerged preventing the development of a more diversified portfolio of CDM projects:

- ▶ Limited access to capital and political influence: the number of project developers that can mobilise capital and lobby authorities are limited. Indeed, hydro power plants that successfully obtained CDM registration are often managed by (semi) state-owned entities, which can effectively influence policy makers by lobbying for investment in the electricity transmission network in remote areas (Bruyninckx et al. 2013).
- ▶ Limited influence on national policies: Vietnamese national policies create favourable conditions for the investment in hydro projects (e.g. the priority of hydro projects in National Power Development Plans). In the absence of Annex I entities actively participating in the CDM, the diversification of the CDM project portfolio in Viet Nam is more difficult to achieve. Furthermore, efforts to attract foreign direct investment to diversify the power mix has been hindered by the Vietnamese government limiting the average price of electricity at a relatively low level to enable the country's products to remain competitive around the globe (Bruyninckx et al. 2013).
- ▶ Duplication of project experience by CDM consultants: 'Twin projects' with nearly identical project design documents (PDDs) have been registered in Viet Nam to reduce costs that clearly constrain efforts to diversify the CDM portfolio. Project developers will also often prefer the more certain profits of a hydro power installation over investing in riskier project activities (Bruyninckx et al. 2013). Indeed, the relatively quick approval process for hydro projects in Viet Nam was confirmed during an interview with a policy maker from Ministry of Natural Resources and Environment (MONRE).

Given the additionality concerns associated with hydro power projects in Viet Nam (Bruyninckx et al. 2013) the lack of diversity in the CDM portfolio increases the risk of undermining its environmental integrity. A policy maker from the Department of Meteorology, Hydrology and Climate Change (DMHCC) expressed his frustration that the CDM only tapped into a small portion of the GHG reduction potential of the country. Although the revenues from the CDM may have been lower than anticipated, Viet Nam has nevertheless gained experience with carbon markets – especially with regards to baseline determination and the MRV of projects in the energy sector (Government of Viet Nam 2014a).

2.2 Current carbon market activity in Viet Nam

Nationally Appropriate Mitigation Actions (NAMAs) refers to any action that reduces emissions in developing countries and is prepared under the umbrella of a national governmental initiative. NAMAs have been under development in Viet Nam with the support of two framework projects (internationally funded) to help build MRV capacity in the country:

- ▶ 'Support the planning and implementation of NAMAs in an MRV manner' (SPI-NAMAs), 2015-2018 funded by the Japanese government;
- ▶ 'Creation of an overarching framework for NAMA and MRV in Viet Nam', 2015-2018 funded by the German government.

Viet Nam has several NAMAs ongoing in different sectors (e.g. NAMA in cement sector with Ministry of Construction (MOC), NAMA on energy efficiency in building sector, in waste and renewable energy sectors with MONRE and NAMAs in the steel and fertiliser sectors with the Ministry of Industry and Trade (MOIT)). However, none of these have so far been able to secure the necessary finance for their implementation (Hanh & Loan 2016). Competition for finance remains high and understanding of NAMAs and MRV requirements remain limited according to the Government of Viet Nam (2014b). A policy maker from MONRE suggested that the preparation of the NAMAs submitted to the NAMA registry were not to a high standard and that more international support would be welcomed.

The Partnership for Market Readiness (PMR) by the World Bank intends to address such shortfalls by facilitating collaboration between developed and developing countries to provide funding and technical assistance for the piloting of market-based instruments (MBIs) for GHG emission reductions. Viet Nam is a participant in the PMR and has identified two sectors (e.g. steel and solid waste) for financial support from the PMR to help to develop NAMAs that generate credits. The role of MBIs in facilitating energy efficiency improvements in the power sector will also be investigated under the PMR project (Government of Viet Nam 2012). As a consequence of the financial support from the PMR, the improved MRV capacity of the country should make it more attractive for foreign investment in future NAMAs. The later phase of the PMR project envisages the establishment of domestic carbon market instruments. A policy maker from DMHCC confirmed that there is an ambition within the Vietnamese government to implement a small scale emission trading scheme (ETS) for the steel sector. The government intends to select five installations in the sector to set up a pilot ETS. However, it was stressed that this remains a medium to long term goal that will require time to prepare for and eventually implement after 2020.

The Joint Crediting Mechanism (JCM) in Viet Nam was established in July 2013. Under the JCM, the Japanese government facilitates the diffusion of low carbon technologies, products, systems, services and infrastructure in Viet Nam. The emission reductions that result from these actions can then all be used towards fulfilling Japan’s national emission reduction target up until 2020. However, according to a policy maker from MONRE the share of credits between the two countries will need to be reevaluated after 2021 when Viet Nam starts implementing its NDC. Viet Nam currently has six approved methodologies and four registered projects that have all started to lower emission levels (Table 3); albeit at a considerably smaller scale than under the CDM. However, a representative from MONRE recently expressed that the most important achievement of Viet Nam’s participation in the JCM is the country’s improved capacity to manage (e.g. measure, report and verify) the reduction of GHG emissions (Ogahara 2016).

Table 3: Portfolio of JCM projects in Viet Nam

Project title	Registration date	Average annual emission reduction
Introduction of amorphous high efficiency transformers in power distribution systems in the southern part of Viet Nam	15 May 16	610 (t/CO ₂ e)
Low carbon hotel project in Viet Nam: Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	15 May 16	272 (t/CO ₂ e)
Promotion of green hospitals by improving efficiency / environment in national hospitals in Viet Nam	30 Nov 15	515 (t/CO ₂ e)
Eco-Driving by Utilizing Digital Tachograph System	04 Aug 15	296 (t/CO ₂ e)

Source: JCM Vietnam - Japan (2017)

2.3 Glance into the future

Viet Nam’s NDC outlines a GHG reduction pathway for the 2021-2030 period, which comprises of a domestic contribution of 8 % by 2030 (relative to BAU). This could be increased by an additional 25 % depending upon levels of international support e.g. via the financing of NAMAs (Government of Viet Nam 2015). Viet Nam’s NDC covers the entire economy (except for industry, which is not currently included in the BAU) and the country is also open to the use of carbon markets in order to fulfil its targets. However, Schneider et al. (2017) strikes a note of caution with the country’s use of international market mechanisms as the country is identified as a potential source of ‘hot air’ (refer to Section 5.3 for further information).

Viet Nam is also a member of the International Civil Aviation Organisation (ICAO). However the country as of yet has not expressed a willingness to voluntarily participate in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) from its outset (ICAO 2017). Given that Viet Nam is forecasted to be the fifth fastest market in terms of additional aviation passengers per year between 2015-35 (IATA 2016), it is expected that the country will exceed the threshold criteria and be obligated to participate in the second phase of CORSIA from 2027 onwards.

3 Country position and capabilities

Viet Nam includes both conditional and unconditional contributions within its NDC. The unconditional contributions are measures ‘that will be implemented using domestic resources, while the conditional contributions are measures that could be implemented if new and additional international financial support, technology transfer and capacity building are received’ (Government of Viet Nam 2015). The use of Article 6 market mechanisms may help to facilitate a raising of the ambition of Viet Nam’s NDC if the country has the domestic capacity to engage in such approaches. The following sections aim to further uncover Viet Nam’s readiness and needs for international support to participate in different types of market based approaches being conceptualised under Article 6 of the Paris Agreement - Article 6.2 covering transfers through linked ETs or bilateral transfers of emission reductions e.g. internationally transferred mitigation actions (ITMOs); and transfers under the Article 6.4 mechanism.

3.1 Viet Nam’s position for the use of Article 6

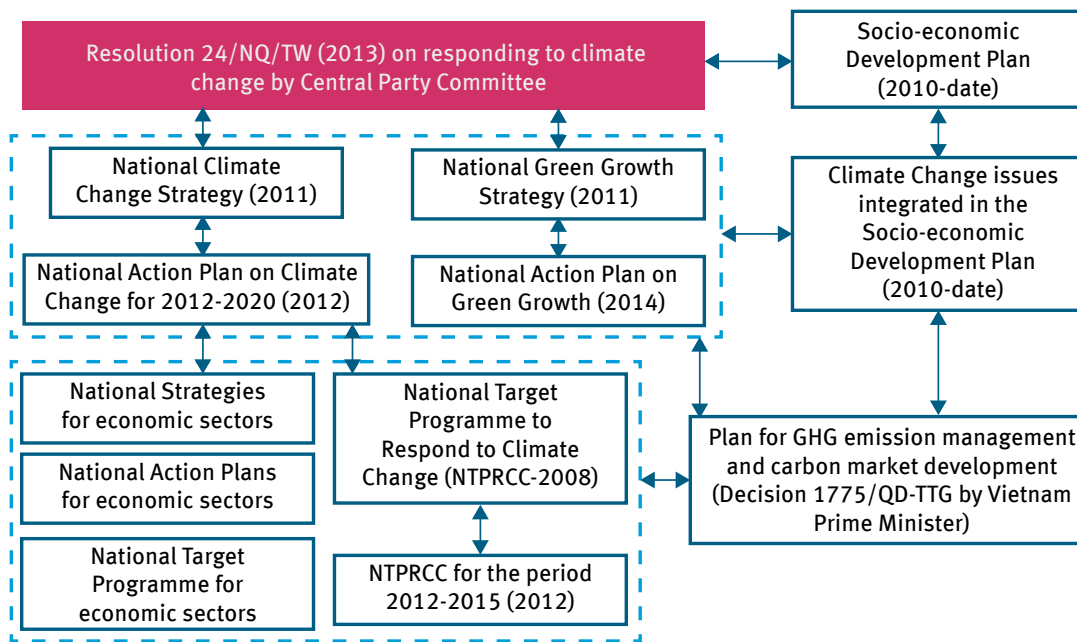
The Vietnamese government is currently adopting a ‘wait and see’ approach to the negotiation of market mechanisms under Article 6 and have not submitted their own proposals. However, it is expressed within the country’s NDC that they are very much open to using market mechanisms to fulfil their obligations (Government of Viet Nam 2015). It is most likely that the country will be a supplier of emission reductions in any post 2020 climate regime.

3.2 Classification of carbon market related capabilities

The capacity of Viet Nam to engage in carbon markets has been primarily driven by the country’s participation in the CDM. Given the unbalanced portfolio of CDM projects in Viet Nam, this has resulted in the country only having limited experience in non-hydro projects. In order to address this imbalance, Viet Nam is currently working with the World Bank and development partners to enhance their carbon market capacity. Delays in approving the PMR proposal for Viet Nam has slowed progress, however according to a policy maker from MONRE, it is still expected that the Vietnamese government will approve the capacity building activities within the PMR proposal.

3.2.1 Domestic administrative and regulatory capacities

An overview of the most relevant climate change related policies in Viet Nam is provided in Figure 2. In 2013, Resolution 24/NQ/TW identified the key solutions (e.g. awareness raising, education, R&D, improvement of financial mechanisms and policies) that are required to respond to climate change. Strategies are developed (e.g. National Climate Change Strategy and National Green Growth Strategy) that correspond to the broad solutions identified by the Central Party Committee. In order to implement these strategies, action plans are subsequently developed and are associated with specific activities. These action plans are also influenced by the National Target Program to Respond to Climate Change (NTP-RCC) which also lists the implementing organisations (Government of Viet Nam 2014a).



Source: Government of Viet Nam (2014a)

Figure 2: Climate change policies in Viet Nam

The Ministry of Planning and Investment (MPI) has primary responsibility for performing the function of State management over climate change³ in Viet Nam and is the focal point of UNFCCC. Based on the NTP-RCC, MONRE was designated in the year 2008 as the lead agency to facilitate the development of the National Climate Change Strategy and subsequently has also taken the lead on coordinating the policy making process for the National Green Growth Strategies. MONRE is responsible for the implementation of policies, the supervision of their progress, and in the establishment of MRV frameworks. The GHG inventory is also developed under the lead of this ministry. Within MONRE, the Department of Meteorology, Hydrology and Climate Change (DMHCC) is the Designated National Authority (DNA) of Viet Nam and hence represents the focal point for the CDM and for NAMAs. It provides support to the Government in the management of carbon trading in the international context (Government of Viet Nam 2014a).

The domestic administrative and regulatory capacity of Viet Nam to enhance the carbon market capacity of the country is still very much in an early stage of development. However, Booth (2013) argues that although Viet Nam has demonstrated the capacity to plan a national climate change policy framework, intergovernmental coordination still needs to be improved with more clarity needed on the roles of leading authorities to avoid duplication of efforts. Furthermore, there remains considerable work to do to achieve climate change action planning at a sectoral and provincial level. A policy maker from MONRE highlighted the data collection problems experienced with the establishment of a national GHG inventory, which illustrates the lack of regulation to compel stakeholders to provide data on their emissions. From an administrative perspective, interviews with policy makers have suggested that the country could improve how the collection of data is organised and this may be an area for additional support from countries with more advanced carbon markets. The lack of urgency in the collection of data may be indicative of the fact that there is not yet any demand domestically for carbon credits as the NDC for Viet Nam only specifies a target for the period 2021 to 2030. A policy maker from DMHCC suggested that protocols still need to be developed to delegate responsibility for the collection of data between the different layers of government (e.g. national vs regional).

3.2.2 Accounting capacity

Accounting capacities include those for estimating national emissions, e.g. as done for national communications to the UNFCCC; and accounting for mitigation actions and related emissions reductions, e.g. from projects, programmes and sectoral actions.

³ State management refers to the provision of advice on national socio-economic development, general economic management, and domestic and foreign investment. The MPI is involved in helping the mainstreaming of climate change response into national and provincial socio-economic development plans (the REDD desk 2017).

Viet Nam's latest national GHG inventory is for the year 2010 and was developed for the country's Initial Biennial Updated Report, which was submitted in 2014 and also included information on GHG mitigation activities, financial, technology and capacity needs and support received for climate activities (Government of Viet Nam 2014b). Viet Nam has also previously submitted two National Communications to the UNFCCC, the latest of which was completed in 2010 with GHG inventory data for the year 2000 (Government of Viet Nam 2010). Greenhouse gas inventories for all of these submissions have been developed with support from international organisations and no organisational system or official institutional arrangement has been established in Viet Nam for these activities, making it difficult to compile data regularly keeping their quality, especially on time-series consistency (Government of Viet Nam 2014a).

According to a policy maker from MONRE, progress towards a national GHG inventory in Viet Nam has so far been very challenging. This is primarily due to issues with the collection of data from different ministries and sectors that are so far reluctant to co-operate. Ministries and sectors have no experience with accounting for their emissions and regard such efforts as an economic burden. A policy maker from DMHCC added that it will be necessary to raise awareness of the potential co-benefits associated with mitigation activities. In addition, the quality of the national GHG inventory is currently being undermined by the use of default IPCC emission factors, inadequate Quality Assurance and Quality Control (QA/QC) procedures and inadequate activity data (Government of Viet Nam 2014b). Improvements to the national GHG inventory are being hindered by a lack of local experts and limited domestic financial resources. Nevertheless, policy makers from both MONRE and DMHCC have suggested that if these difficulties can be overcome (possibly with international support) it is expected that the national GHG inventory will be completed in around two years.

Accounting capacities for mitigation actions at a sector or project level are highly variable and are significantly influenced by the country's experience under the CDM. For example, a policy maker from MONRE explained how Viet Nam has built up its domestic capacity in the accounting of GHG reductions from hydro projects, reflecting the high share of such projects in the country's CDM portfolio. In contrast, the accounting capacity for mitigation activities in other sectors is currently less developed and therefore PMR funding is intended to address this shortfall by building domestic accounting capacity in sectors with considerable mitigation potential. Even for hydro projects, the quality of Viet Nam's GHG data unfortunately still led to delays with project registrations. Bruyninckx et al. (2013) highlighted how the DNA defined a standard calculation sheet for the emission coefficient of the national grid, in order to help lower the costs for hydropower project developers in the preparation of Project Design Documents (PDDs) and in the validation process. However, the emission data included in the standard calculation sheet were averages of 2006, 2007 and 2008 and the Executive Board (EB) required more up to date data. As a consequence, it was necessary for the project developers to use an alternative methodology to re-calculate the emission coefficients (increasing costs and delaying project implementation). This example emphasises the importance of developing the national GHG inventory to enhance the accounting capacity of the country.

3.2.3 Monitoring, reporting and verification (MRV)

MRV capacities can be distinguished as MRV of national emissions and MRV provisions for mitigation activities. In addition to the results, MRV also includes criteria to track implementation progress, effectiveness of the outcomes and support in a transparent manner.

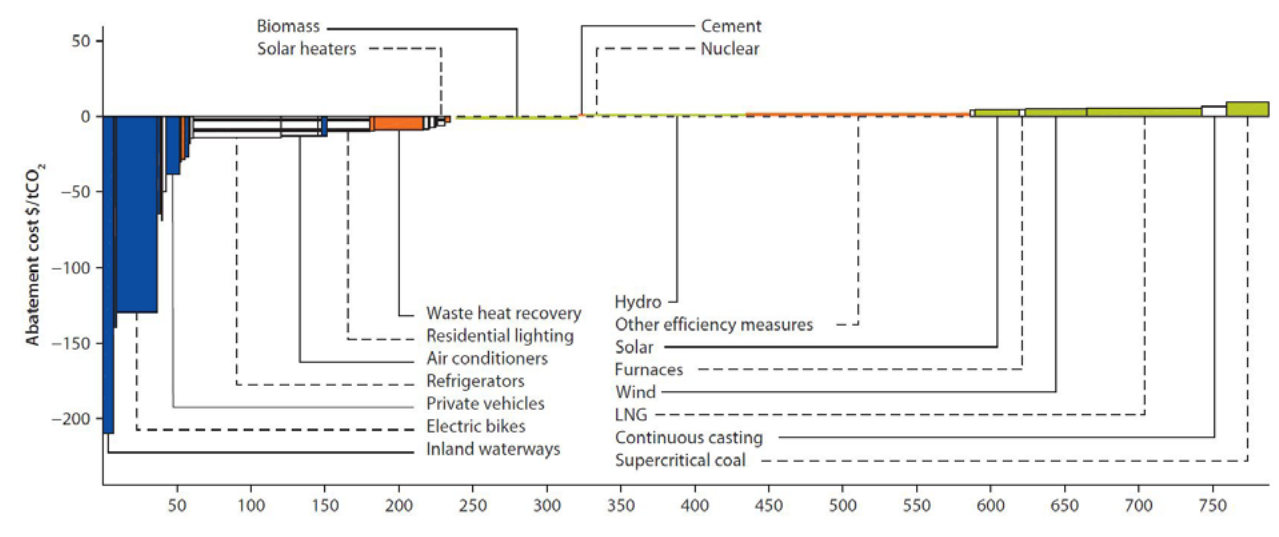
The Project of GHG Emission Management, which was approved by the Vietnamese government in November 2012, sets the target of preparing the framework to register and widely deploy NAMAs. In support of this target, the Decision⁴ also includes the establishment of an MRV system at both the national and sectoral levels (Government of Viet Nam 2014a). However, so far, the effective implementation of this Decision has not yet been achieved with Viet Nam's Initial Biennial Updated Report stating that 'current national and sectoral policies to develop and implement NAMA/MRV are inadequate' (Government of Viet Nam 2014b). It was also acknowledged that the MRV systems at the national and sectoral levels are still in a development phase and that there was currently a lack of effective co-ordination between ministries, economic sectors, localities, public and private sectors.

⁴ Decision 1775 Approval of Project of Greenhouse Gas Emission Management; Management of Carbon Credit Business Activities to the World Market, 21/12/2012

Efforts are therefore on-going to improve the market readiness of Viet Nam, with the PMR providing a leading role in advocating both top-down (e.g. centralised and national/sector reporting, QA/QC at system level) and bottom-up (e.g. installation level data collection, QA/QC at data point level) MRV approaches (Government of Viet Nam 2014a). The need for the development of a registry system to accompany the national GHG inventory should be reviewed on an on-going basis as it prepares for more complex interaction with the international carbon market (Government of Viet Nam 2014a).

3.2.4 Mitigation potentials and costs

It is outlined in Viet Nam’s NDC that a roadmap with methods to implement GHG mitigation measures is under development. A policy maker for DMHCC expects that this assessment should be completed by 2018. The roadmap will build upon research conducted by Audinet et al. (2016) that assessed the mitigation potential in Viet Nam between 2010 and 2030 (Figure 3). An interesting outcome from the analysis was a Marginal Abatement Cost (MAC) curve, which showed the mitigation potential as a sum of annual emission reductions between 2010 and 2030. Although any MAC curve is sensitive to the underlying assumptions, Audinet et al. (2016) estimated that 40 % of the country’s total mitigation potential between 2010 and 2030 is ‘win-win’ with negative costs. These ‘win-win’ abatement options are mainly in sectors such as industry, transport and residential buildings. Audinet et al. (2016) estimates that only 2 % of the total MAC potential between 2010 and 2030 has incremental costs over \$10 /tCO₂e.



Note: The figure depicts marginal abatement costs (MACs) and potential emissions reduction up to \$10/tCO₂e for visualization purposes. Source: Audinet et al. (2016)

Figure 3: Viet Nam’s Marginal Abatement Cost Curve, 2010-2030

The international carbon market could help to finance the vast majority of the abatement options identified for Viet Nam in Figure 3. However, in order to do so market barriers evident from the country’s experience with the CDM need to be overcome to attract the necessary international finance. International support to enhance the capacity of Viet Nam to participate in carbon markets needs to be a priority, especially with regards to the development of a national GHG inventory and improving MRV expertise for a broader range of sectors.

4 Assessment framework for countries’ readiness to engage with Article 6

This section lists potential participation options for the countries to engage with Article 6 of the Paris Agreement and introduces an assessment framework to analyse the countries’ readiness to participate in the new mechanisms. In the following section, Viet Nam’s readiness is discussed in line with this methodological framework.

4.1 Participation options under Article 6

Article 6 of the Paris Agreement includes several provisions allowing for the use of the international carbon market to support the implementation of NDCs and enable ambition raising. These are defined as ‘Cooperative Approaches’ (discussed in Article 6.2-6.3) and a ‘Mechanism for Sustainable Development and Mitigation’ (discussed in Article 6.4-6.7). We interpret Internationally Transferred Mitigation Outcomes (ITMOs) as mitigation outcomes realised through any Article 6 approach, and transferred between countries with the objective of NDC achievement of the acquiring country. While the detailed rules and modalities of these mechanisms are being negotiated, countries as well as experts are reflecting on how to best integrate previous experience from market related domestic and international activities.

In Table 4 and the paragraphs that follow, we outline a set of broad and non-exhaustive options for transferring ITMOs and differentiate if they may fall under Article 6.2 ‘Cooperative Approaches’ or under Article 6.4 ‘Mechanism for Sustainable Development and Mitigation’. These form the basis of the assessment in Section 5.

Table 4: Potential non-exhaustive options for ITMO transfers under Article 6

Options for ITMO transfers under Article 6.2 (✓) and Article 6.4 (✓)	
ITMO transfers as a result of linked Emission Trading Schemes	✓
Direct transfers of ITMOs between countries	✓
Transfers of ITMOs generated from bilateral baseline and crediting instruments (e.g. JCM)	✓
Transfers of ITMOs generated from international baseline and crediting instruments	✓

Source: Authors

4.1.1 Participation options under Article 6.2

Article 6.2 encompasses direct cooperation between sovereign states that involves the transfer of ITMOs. Multiple instruments could generate ITMOs under Article 6.2, as long as their generation is consistent with the international guidance adopted by the COP. Based on currently operational domestic as well as international carbon pricing instruments and our interpretation of ITMOs, a few broad participation options emerge:

1. ITMO transfers through linked domestic Emission Trading Schemes (ETS): Mitigation outcomes are traded between established ETS from respective jurisdictions through linking their markets;
2. ITMO transfers through (bilateral) baseline and crediting on project-by-project or sectoral level: Crediting of emission reductions in non ETS sectors for the countries with ETS, a general crediting approach, or the Joint Crediting Mechanism (JCM) approach;
3. Direct government-to-government ITMO transfers: Other forms of government-to-government transfers of mitigation outcomes.

4.1.2 Participation options under Article 6.4

Article 6.4 establishes a Mechanism for Sustainable Development and Mitigation, which generates emission reduction credits and operates under the authority of the COP⁵. Based on engagement in operational international mechanisms and existing structures (e.g. CDM), participation in the mechanism can involve - first and foremost - the generation of emission reduction credits and their transfer between countries (and/or obligated entities e.g. in ETS) towards meeting the acquiring country’s NDC. We assume that emission reduction credits generated under Article 6.4, which are internationally transferred and used by the acquiring country towards its NDC, could also potentially be regarded as ITMOs.

4. Design options that exist under Article 6.4 are yet to be agreed and include a project or programme based mechanism, similar to the CDM/JI approaches; or a sectoral international crediting mechanism in which fixed sectoral baselines/thresholds could be set and credits generated if a lower level of emissions is achieved. Alternatively, credits could be also generated by adopting, quantifying and MRVing GHG-friendly policies in particular sectors or be based on intensity-based baselines e.g. GHG emissions per unit of output.

⁵ We note that emission reduction credits generated under Article 6.4, which are internationally transferred and used by the acquiring country towards its NDC, could also potentially be regarded as ITMOs.

4.2 Assessment framework for countries' readiness to engage with Article 6

The development of Article 6 modalities presents several issues and potential challenges, such as environmental integrity, as well as countries' motivation and capacities to participate in the market. They are often interlinked and have implications on how different countries choose their pathways to operationalise Article 6. In the absence of firm rules on the nature and form of market mechanisms possible under Article 6, an assessment of countries' readiness for it cannot be based on precise benchmarks. It can still stock-take the broad preconditions to engage with future mechanisms, identify support needs early on and provide important insights for ongoing negotiations and further development of the modalities for Article 6.

The indicators used in this assessment of 'engagement readiness' of countries are – firstly, the enabling conditions for uptake of Article 6 market instruments (enabling conditions); and secondly, those which ensure that the mitigation outcomes used as ITMOs follow principles of environmental integrity desirable under Article 6 (compatibility of the NDC; feasibility to maintain robust accounting and MRV). These indicators and factors underlying each are briefly discussed below:

Table 5: Assessment framework for countries' readiness for Article 6

Indicators	Factors considered in the assessment
<i>Enabling conditions</i>	Availability of instruments
	Political will
<i>Feasibility of maintaining robust accounting and MRV</i>	Accounting capacity
	Implementation capacities
	MRV systems
	Registry experience
<i>Compatibility of the NDC</i>	Scope of NDC and type of target
	Clarity of NDC
	Nature of NDC
	NDC ambition
	Coverage of GHGs

Source: Authors

4.2.1 Enabling conditions

Prior experience and availability of instruments such as emission trading schemes, crediting instruments and bilateral transfers have a facilitative role in Article 6 uptake. Furthermore, Paris Agreement has redefined the paradigm for international climate policy as unlike the KP, all Parties are taking up some form of contributions towards global mitigation efforts. As all Parties are free to buy or sell ITMOs, market instruments will have an impact on (and be impacted by) domestic mitigation efforts. Hence, political will of Parties to pursue domestic and international instruments, facilitating their uptake by stakeholders, and ensuring the quality of ITMOs will be critical in the post-Paris world.

4.2.2 Feasibility to maintain robust accounting and MRV

Firstly, these indicators include experiences of a country with economy wide emission accounting e.g. in the form of a national emissions inventory, MRV systems and prior registry experience. Secondly, experiences with accounting approaches for specific sectors and mitigation activities (similar to project-based crediting instruments) are considered. Additionally, presence of appropriate institutional frameworks, e.g. a coordinating body, would be critical to maintain robust accounting and MRV. Further, interest and implementation capacity of stakeholders (e.g. businesses, NGOs, and state agencies) is important to maintain robustness of accounting and MRV provisions agreed in Paris.

4.2.3 Compatibility of the NDC

The relationship of ITMOs with NDCs will be critical for maintaining the environmental integrity of Article 6 instruments and strengthening mitigation ambition of the Paris Agreement. Considering the broad range of NDCs that have been submitted to the UNFCCC, aspects such as the nature (conditional or unconditional) and scope (sectoral, actions only, economy wide) of the NDC, elements of quantifiability such as clear emission trajectories and clarity of underlying actions are important. Moreover, ambition of the NDC could influence generation of genuine emission reduction credits ('hot air').

5 Viet Nam's readiness to engage with Article 6 market options

The aim of this section is to analyse the potential readiness of Viet Nam to engage with Article 6 options, by applying the methodological framework provided in the previous section, as well as to outline specific country needs for the implementation of Article 6.⁶

5.1 Enabling conditions

Viet Nam has gained extensive experience with market mechanisms that can be built upon in the future. At the current level of capacity, a crediting instrument based on past experience seems to be more feasible for Viet Nam. For example, the country's experience with the JCM may provide the enabling conditions for a cooperative approach to be formed with Japan under Article 6.2. It is most likely that this would initially involve a continuation of the crediting mechanism that is currently in place with Viet Nam, whereby emission reductions from projects are credited to the NDC of Japan in return for financial support and the transfer of technology. However, the extent to which these efforts are credited to Japan in the future will be the subject of negotiation as Viet Nam will need to also ensure that their NDC is also fulfilled. Several issues with regards to the accounting of such transfers have been identified by IGES (2016) and these will require further consideration for Viet Nam's future participation in the JCM:

- ▶ Clear accounting policy needs to be established for the use of JCM credits towards Vietnam's NDCs;
- ▶ Clarity required on how Vietnam will use JCM credits generated outside of the target year of its NDC;
- ▶ Robust reporting processes will be necessary in Vietnam to prevent double counting of JCM credit use at the national level.

In the medium to longer term, the cooperative approach with countries, such as Japan, could involve the linking of a small scale ETS in the iron and steel sector. The setting of an ETS cap will rely upon improving the availability of data on the historic emissions of installations expected to be within the scope of the policy instrument (e.g. mandatory bottom up reporting of emissions). Additional information on projected emissions and marginal abatement costs would also ideally be available in order to set the ETS cap. Further key design elements of the ETS will also need to be carefully considered (e.g. allocation, cost containment, compliance etc.). Once an ETS is established, the possibility of linking to other ETSs as a means of engaging in cooperative approaches under Article 6 is a possibility. According to the PMR & ICAP (2016) the linking of ETSs requires the following:

- ▶ An agreement on acceptable levels of ambition in each jurisdiction and the willingness to agree upon changes to ambition levels over time;
- ▶ The harmonisation of key design features to ensure environmental integrity and price stability;
- ▶ Necessary preparation time for linking and may even be designed from the outset (e.g. Quebec's ETS) to link to other markets.

Given the country's considerable experience with the CDM (refer to Section 2.1), it is also very likely that Viet Nam could participate in market mechanisms through the crediting mechanism envisaged under Article 6.4. Furthermore, the approved methodologies already developed under the country's participation in the JCM may be helpful to quickly develop simple yet robust methodologies in any future crediting mechanism under Article 6.4. The fact that Viet Nam's NDC is economy wide (except for industry) should also ensure that their access to the mechanism is not too limited (e.g. there is a proposal to only allow ITMOs to be generated within the scope of a country's NDC).

⁶ Given the high uncertainty of the Article 6 negotiations and the fact that it will take considerable time (at least till COP 24 in 2018) to negotiate the exact design details of the new mechanisms, this study can only provide limited analysis with regard to potential options of the country under Article 6 of the Paris Agreement.

Viet Nam’s government has already expressed the intention to participate in the future international market mechanisms under Article 6 in the NDC. Given that the details of the mechanisms under Article 6 are yet to be agreed, it is not possible to obtain a definitive view from the Vietnamese government on how they expect to participate in market mechanisms. Nevertheless, it was clear that the less restrictive nature of Article 6.2 may appeal to Viet Nam and enable the country to build upon its’ collaboration with Japan under the JCM. Given the need to establish a national GHG inventory and to improve upon its’ current MRV capacity, the use of market mechanisms under Article 6.2 may enable the country greater access, depending upon the stringency of the guidance.

Table 6: Summary of the indicator ‘Enabling conditions’

Indicator	Factors	Current situation
Enabling conditions	Availability of instruments	<ul style="list-style-type: none"> ▶ Planned ETS (small scale pilot for steel sector in the medium to longer term) ▶ Experience with CDM and JCM
	Political will	<ul style="list-style-type: none"> ▶ Willingness to participate in Art. 6 expressed in NDC ▶ Establishment of a framework of climate change policies but there is a lack of financial resources for implementation and enforcement ‘on the ground’

Source: Author’s assessment

5.2 Feasibility to maintain robust accounting and MRV

The quality of the national GHG inventory under development is limited by the use of default IPCC emission factors, inadequate QA/QC procedures and inadequate activity data (Government of Viet Nam 2014b). Improvements to the national GHG inventory are being hindered by a lack of local experts and limited domestic financial resources. Without further improvements to the national GHG inventory, it will be more challenging for the country to fully participate in the market mechanisms under Article 6. Furthermore, the development of MRV systems in Viet Nam are highly variable depending upon the mitigation activity and therefore considerable efforts are also underway (supported by the PMR) to improve capacities in sectors with high mitigation potential (refer to Section 3.2.4). However, participation in the JCM is expanding the capacity of the country to perform MRV on a greater number of emission reduction projects (refer to Section 2.2). The implementation and enforcement of climate change policies ‘on the ground’ to maintain robust accounting and MRV remains a considerable challenge for the country and it is therefore important for private sector stakeholders to also engage in the developing carbon market in Viet Nam.

Table 7: Summary of the indicator ‘Feasibility of maintaining robust accounting and MRV’

Indicator	Factors	Current situation
Feasibility of maintaining robust accounting and MRV	Accounting capacity	<ul style="list-style-type: none"> ▶ Work is underway to establish a national inventory system but hindered by a lack of experts and financial resources
	Registry experience	<ul style="list-style-type: none"> ▶ Limited
	MRV system	<ul style="list-style-type: none"> ▶ Ongoing active development of the MRV system (e.g. through PMR support) but currently uneven distribution of MRV knowledge by sector based on previous experience of crediting mechanisms
	Implementation capacity	<ul style="list-style-type: none"> ▶ Coordinating institutions – (but additional personnel resources could be required) ▶ Private sector stakeholders currently need more incentives and support in order to participate in the development of the domestic carbon market

Source: Author’s assessment

5.3 Compatibility of NDC

Viet Nam has set both unconditional and conditional targets in its NDC that puts forward quantifiable absolute emission reductions. While the NDC says its targets are economy wide, it excludes the industry sector in its target setting. This means that Viet Nam could generate ITMOs without necessarily impacting the ambition of the country’s NDC.⁷ This leads to the question of whether the NDC is sufficiently ambitious given the absence of the industrial sector from the country’s NDC. Schneider et al. (2017) argues that the NDC targets of Vietnam could be a potential source of ‘hot air’ (e.g. target level of emissions are higher than BAU emissions). The research applies an independent BAU to the one adopted in the NDC of Viet Nam revealing strong differences in the expectations of future emission levels – that if true may make the target of Viet Nam’s NDC less ambitious. Indeed, in a forthcoming study, Vieweg et al. (2017) suggests that the BAU may not ‘appropriately’ reflect future developments mainly due to the assumptions in the energy sector.⁸

In order to prevent the transfer of hot air, it is possible that less ambitious NDCs could be excluded from the international carbon market. ‘Potential solutions may thus be formal or informal agreements among Parties interested in the environmental integrity of the Paris Agreement, to transfer units only among Parties with sufficiently ambitious NDCs’ (Cames et al. 2016). Based on existing assessments of the ambition level of Viet Nam’s NDC, it could be assumed that there might be a certain risk that the country’s participation in the new generation of market mechanisms could be restricted until the country raises the ambition level of its NDC.

Table 8: Summary of the indicator , Compatibility of NDC*

Indicator	Factors	Current situation
Compatibility of NDC	Scope of NDC	▶ Economy wide (excluding industry)
	Clarity of NDC	▶ Absolute emissions reduction target ▶ Target year only
	Nature of NDC	▶ Unconditional and conditional elements
	NDC ambition	▶ Potential for hot air
	Coverage of GHGs	▶ CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆

Source: Author’s assessment

5.4 Engagement with Article 6 options

Table 9 provides an overview of Viet Nam’s readiness to engage in various market options under Article 6. In general, the range of preliminary options listed previously in Table 4 (refer to Section 4) could all be used by Viet Nam in the future. Still, given the current level of experience and capacity, crediting instruments seem to be the most feasible in the short term. In the medium to longer term, the linking of the proposed small scale ETS for the iron and steel sector may be a future option for Viet Nam. Allocating more personnel resources to the development of market mechanisms as well as to the UNFCCC reporting could support the country’s engagement with Article 6 options. Apart from that, raising the level of NDC ambition is crucial to avoid the risks of potential restrictions from the use of market mechanisms (in case there are any). Finally, stronger domestic high-level political support and broader stakeholder engagement are factors that could additionally foster participation of the country in the new mechanisms.

7 The scope of the NDC and the trajectory to reach the conditional and unconditional emission reduction targets in 2030 will need to be further clarified along with a further explanation on what exactly constitutes ‘international support’ for Vietnam to then fulfil its more ambitious conditional target.

8 Vieweg, M.; Fekete, H.; Luna, L. & Hoa, V. X. (2017) identify that ‘outdated electricity demand projections were used that are not in line with the most current (lower) estimates from the Ministry of Energy’ at the time of INDC preparation. In addition, Vieweg, M.; Fekete, H.; Luna, L. & Hoa, V. X. (2017) find that ‘the baseline assumes that all expected demand growth is delivered through new coal-fired power’ which is deemed to be unrealistic and incompatible with existing strategies for the power sector in Vietnam.

Table 9: Potential engagement options for Viet Nam based on the readiness assessment

Options for ITMO transfers under Article 6.2 (✓) and Article 6.4 (✓)	
ITMO transfers as a result of linked Emission Trading Schemes	✓
Direct transfers of ITMOs between countries	
Transfers of ITMOs generated from bilateral baseline and crediting instruments (e.g. JCM)	✓
Transfers of ITMOs generated from international baseline and crediting instruments	✓

Source: Authors

6 Conclusions and recommendations

Germany continues to hold a keen interest in supporting the development of rule-based and well-functioning carbon markets in its partner countries. In the post-Paris context, however, existing German cooperation in the field of carbon markets may need to be readjusted and further shaped in line with the rules and guidance being developed under Article 6. The readiness assessment undertaken in Section 5 has aimed to provide empirical evidence to this effect. It outlines the entry points for German cooperation with Viet Nam by discussing the country's readiness to engage in Article 6. Building on the assessment, the following paragraphs provide recommendations on the prospects for future German cooperation with Viet Nam on carbon markets. Three broad areas of potential cooperation have been identified:

1. Furthering in-country MRV capacities for market mechanisms:

- ▶ Viet Nam's MRV systems at the national and sectoral levels are in a development phase and there is currently a lack of effective coordination between ministries, economic sectors, localities, public and private sectors. Furthermore, technical and financial resources within the country to develop MRV systems are limited. It is therefore crucial to involve the private sector and that incentives are needed to engage private stakeholders from the start, because the state budget cannot cover all necessary resources.⁹ Hence, an entry point for international cooperation to build readiness towards future markets could be by supporting enhanced technical readiness of sectoral actors. To a certain extent, efforts are already ongoing with support from the PMR to focus on building up MRV capacities in several sectors with large mitigation potential. However, further technical and financial support remains necessary.
- ▶ Urgent needs also exist for developing in-country capacities in national emissions accounting. According to a policy maker from MONRE, progress towards a national GHG inventory in Viet Nam has so far been very challenging. This is primarily due to issues with the collection of data from different ministries and sectors that are so far reluctant to co-operate. An additional challenge is that those responsible for implementing MRV on the ground have different levels of education and knowledge. Therefore international support to develop tools for streamlined, common emissions reporting and training for actors (at different levels of governance) reporting and administering these systems would be beneficial.

2. Focussed technical support on linkages between Article 6 and NDC implementation.

- ▶ If Viet Nam's current participation in the JCM is to evolve into a cooperative approach with Japan, further work would be necessary to ensure that ITMOs generated under the crediting mechanism would meet the environmental standards that will eventually be set out in the guidance to Article 6.2. It would also be necessary to agree upon how ITMOs generated under the cooperative approach would be distributed amongst the two countries.
- ▶ Alternatively, if the country participates in Article 6.2 via the linking of a future domestic ETS, the key need would be technical and financial support for the design, successful launch and operation of the ETS. One possible way is to organise detailed and demand-driven, tailor-made technical exchange with countries and subnational jurisdictions where an ETS is already operational. The issue of linking an ETS would also

⁹ Based on the view from Nguyen Thi Dieu Trinh (representing the Ministry of Planning and Investment) who provided an overview of the common needs of Viet Nam to participate in market mechanisms under Article 6 at a recent side event in Bonn in May 2017, during the on-going UNFCCC negotiations.

require additional technical support and political coordination.

- ▶ Viet Nam may also be supported to develop experience with registry systems for documenting and tracking mitigation outcomes and associated support. Such support could either take the form of in-country work supported by the German government or could happen through Viet Nam's participation in programmes supported by Germany such as the PMR.

3. Sharing experiences and lessons learnt:

- ▶ A third significant need identified was to learn from experiences of other jurisdictions on administrative and technical issues. Specifically, learning from experiences of developed countries was highlighted to be an extremely useful resource for countries beginning to develop domestic systems by Vietnamese representatives in the current project's workshop. International technical guidelines as well as case studies from developed countries on how to establish market mechanisms could be extremely helpful for Viet Nam to learn from this experience.

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