



# REPORT

## **3E NEXUS AND DEVELOPMENT OF JOINT CREDITING MECHANISM (JCM) PROJECTS FOR IMPLEMENTING INTENDED NATIONALLY DETERMINED CONTRIBUTIONS**

Hanoi, Vietnam, January 24<sup>th</sup>, 2015



## **REPORT**

# **3E NEXUS AND DEVELOPMENT OF JOINT CREDITING MECHANISM (JCM) PROJECTS FOR IMPLEMENTING INTENDED NATIONALLY DETERMINED CONTRIBUTIONS**

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## **Overview of domestic network building activities**

### **Potential needs for Joint Crediting Mechanism (JCM)**

Climate change is occurring faster than our predicted, and causes major impacts on fluctuation of temperature and precipitation, sea level rise, increasing the extreme weather events and disasters (i.e., tropical typhoon and storm). Climate change is a major factor that increases the vulnerability of the natural and social systems, threatens the resilience, food security, and sustainability of human being.

In order to prevent serious effects of climate change by reducing greenhouse gas (GHG) emissions in half from current levels by 2050, it is imperative to create low-carbon societies by implementing effective means, including Joint Crediting Mechanism (JCM). The JCM is proposed by Japan government with a goal to facilitate diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries. The JCM will contribute to not only reduce GHG emission but also increase our awareness about low-carbon development and green growth as well as building a sustainable society.

Several priority sectors can jointed to develop the JCM projects, including energy efficient appliances, low-carbon waste management projects (waste reduction and best disposal method), transportation infrastructure development and effective use, development of low-carbon societies.

For promoting the JCM projects in Vietnam, it is urgently needed to establish an organization, playing as One-Stop service. The One-Stop service should play as the main researcher within the academic community of the host country to promote JCM projects and to maintain the domestic network. The One-Stop service should receive requests from Japanese businesses/local governments for projects, communication with relevant domestic individuals, businesses, and/or government, and assistance in collection of basic data.

### **Progress of activities to promote the JCM in Vietnam**

A research team of Vietnam National University (here after VNU team) has been established and led by Prof. Dr. Mai Trong Nhuan for acting as One-Stop service (as National Focal Person – NFP) and promoting the JCM in Vietnam. The NFP consisted of three lecturers and five researchers of VNU-University of Science.

The NFP has conducted many activities for promoting the JCM projects through many consultants and study workshops in Vietnam. Among those activities NFP has held several meetings with academic institutions, policymakers, stakeholders, and business sectors in Vietnam to get supports and advice for promoting the JCM projects.

The results of those activities have strongly indicated that it is imperative to create low-carbon societies by implementing effective means such as Joint Crediting Mechanism (JCM) in Vietnam. The JCM mechanism will contribute to not only reduce GHG emission but also increase our awareness about low-carbon development and green growth as well as building a sustainable society. However, the JCM is a new mechanism with almost enterprises, companies, and academic institutes in Vietnam. Thus, the JCM workshop is among initiative activities to facilitate the JCM mechanism to a broad social scale in Vietnam. Moreover, we also emphasized that this workshop will provide an interactive platform for researchers, policymakers, stakeholders, and communities to discuss and examine opportunities and challenges for this mechanism and development of low-carbon society in Vietnam and strengthen collaboration among social and economic sectors as well as cooperation between VNU University of Science, Vietnam and the IR3S, The University of Tokyo.

### **Roles of domestic network in Vietnam in promoting JCM projects**

The domestic network will be constructed from four major organizations, consisting of One-Stop service, academicians, policymakers, and regional and local communities (Figure 1). In which, the One-Stop service will play as a central organization to collaborate: (1) with academicians for developing and transferring scientific results in the MRV, (2) with policymakers for cooperating in political consultancy on proposing and developing JCM projects, and (3) with stakeholders, enterprises, and companies in developing JCM projects. Moreover, the domestic network will maintain the contact and collaboration with Japanese headquarters (IR3S secretariat) and stakeholders (Japanese companies and businesses) for developing the education, training, and developing the JCM projects. The One-Stop service organization will include reception of requests from Japanese businesses/local governments for projects, communication with relevant domestic individuals, businesses, and/or government, and assistance in collection of basic data. Moreover, it is needed to promote the development of capacities in low-carbon society development, 3E nexus and JCM projects. The One-Stop service should be supported to promote the education and researches and to implement knowledge transfer based on these researches.

For promoting JCM, Vietnam needs to establish JCM consultancy, to support science and technology based on low-carbon development, and green growth. The consultancy and academic institutions need to provide information and training on the JCM and low-carbon development. Vietnam needs to create an innovative policy to ensure the cost-benefits of jointed entities in JCM project, to regulate implemented mechanism and financial support in clear and easy manner. The science and technology sectors need to conduct researches to develop low-carbon technology, green technology and waste management and treatment.

Both Japan and Vietnam organizations need to increase awareness of communities on the JCM by implementing study workshop and seminar.

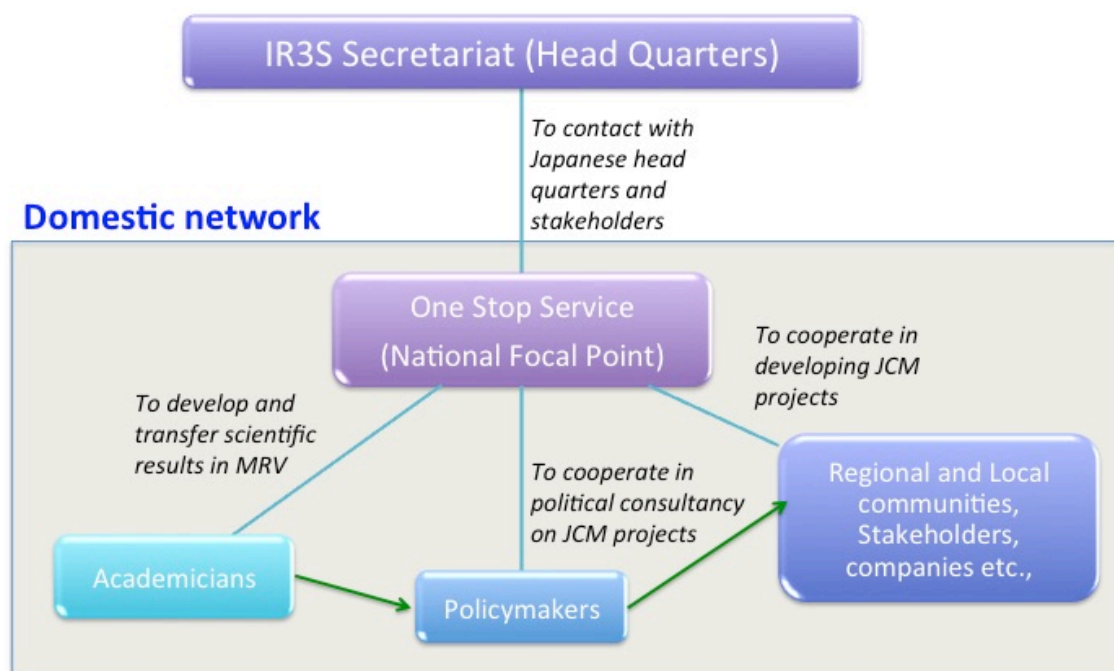


Figure 1. The structure of domestic network to promote JCM projects in Vietnam

## Summary of the study workshop

### Objectives of the study workshop

The study workshop will provide an interactive platform for researchers, policymakers, and stakeholders to discuss on the potential of JCM projects for sustainable development of low carbon societies in Vietnam under the INDC and Energy-Ecosystem-Environment (3E) Nexus platform; to improve the consulting and know-how for JCM project proposal development; and to exchange their experiences and ideas towards creating actual JCM projects in Vietnam; and to strengthen collaboration between Vietnam National University, Hanoi and The University of Tokyo.

### Workshop outcomes

The JCM workshop in Vietnam was held on December 14<sup>th</sup>, 2015 at the VNU Hanoi University of Science. Total 59 participants attended the workshop. The participants come from academic, business, and industrial sectors, and policymakers from both Japan and Vietnam (Figure 2).

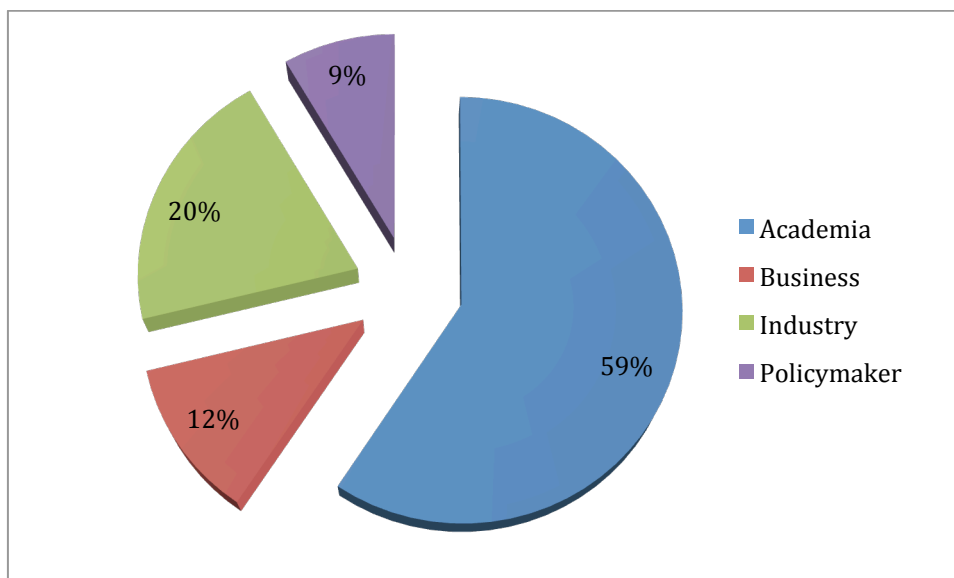


Figure 2. The proportion of participants attended in the study workshop in Vietnam National University.

In the workshop, specialists from Vietnam and Japan have presented five presentations and all participants joined roundtable discussion. The workshop agenda is shown in Table 1.

Table 1. Workshop agenda

Time	Description
8:30 – 9:00	Registration
9:00 – 9:10	Opening and welcome remarks <i>Assoc. Prof. Dr. Vu Van Tich, Head of VNU Department of Science and Technology</i>
9:10 – 9:20	Workshop introductory remarks <i>Dr. Nguyen Tai Tue VNU University of Science</i>
9:20 – 9:40	Keynote speech: Joint Crediting Mechanism JCM & Intended Nationally Determined Contributions (INDC) in Vietnam <i>Prof. Dr. Mai Trong Nhuan, Vietnam National University, Hanoi</i>
9:40 – 10:20	NAMA and GHG emission reduction: Policy Landscape and Gaps in Viet Nam <i>Dr. Luong Quang Huy, Department of Hydrology, Meteorology and Climate Change</i>
10:20 – 10:40	Coffee break
10:40 – 11:10	Introduction to Energy, Environment and Ecosystems (3E) Nexus Initiative and Joint Crediting Mechanism (JCM) <i>Prof. Dr. Hirotaka Matsuda – The University of Tokyo</i>
11:10 – 12:00	Roundtable discussion: Q & A and Suggestions
11:00 – 13:30	Lunch
13:30 – 14:00	Proposed Writing Lecture (VIDEO) <i>Prof. Kensuke Fukushi – The University of Tokyo</i>
14:00 – 14:45	Joint Crediting Mechanism (JCM) in Vietnam <i>Mr. Le Ngoc Tuan, Department of Hydrology, Meteorology and Climate Change</i>
14:45 – 15:00	Q & A and Suggestions
15:00 – 16:30	Individual discussions between participants <i>All participants</i>
16:30 – 16:45	Conclusions and wrap-up <i>Prof. Dr. Mai Trong Nhuan</i>

The summary of each presentation is shown as follows:

## Opening and welcome remarks

Dr. Nguyen Tai Tue presented some remarks on climate change impacts and illustrated that Vietnam and other countries need to develop INDC with an emphasis on the GHG reductions. He also presented an introduction of 3E nexus and the ways for reducing GHG based on the Jointed Crediting Mechanisms (JCM). However, the JCM is a new mechanism in Vietnam, particularly, the JCM proposal development and discussions between academic persons, business persons, government, etc. toward real projects. Thus, the objective of the workshop is to bring all participants from different disciplines to discuss on the potential of JCM projects for sustainable development of low carbon societies in Vietnam under the INDC and Energy-Ecosystem-Environment (3E) Nexus platform; to improve the consulting and know-how for JCM project proposal development; and to exchange their experiences and ideas towards creating actual JCM projects in Vietnam.

## Building resilient and low-carbon society by implementing Intended Nationally Determined Contributions (INDC) and Joint Crediting Mechanism (JCM) Projects presented by Prof. Dr. Mai Trong Nhuan

In this presentation, Prof. Mai Trong Nhuan overviewed the global issues threatening sustainable development of all countries, including global environmental change, climate change, natural resources depletion, economic crisis, etc. Thus it is urgently needed to build up a resilient society. In which, resilient society has four major dimensions, including low carbon society, resource-circulating society, society in harmony with nature. Among measures, the low carbon society will help the earth's temperature below 1.5 °C. Thus, the Intended Nationally Determined Contributions (INDC) of each country will contribute to mitigate the GHG emissions and to increase the adaption to climate change and natural disasters. As his comments, when INDC of Vietnam to be implemented, the GHG emissions will reduce 8% with unconditional reduction (means that without support from foreign countries) but can markedly increase to 25% with the supports from other countries. From these points, he emphasized that low carbon society development is a priority of Vietnam for promoting green technology, low carbon environment and green life. This is a crucial opportunity for JCM projects and Reducing Emissions from Deforestation and Forest Degradation (REDD+) scheme. The JCM project will significantly contribute to the Vietnam INDC. For conclusion his talk, Prof. Nhuan emphasized on several questions on JCM program, consisting of: What is real cost of unique technologies by Japanese companies, How to pay for the technologies when there is a need to refund the cost. Additionally, he warned that we need to cooperate to develop the database of the needed JCM projects in Vietnam and other Asian countries. Finally, he demonstrated that this workshop is an important activity to response the success of the Paris Agreement.



## NAMA and GHG emission reduction: Policy Landscape and Gaps in Viet Nam

NAMA and GHG emission reductions and related policies in Vietnam were presented by Dr. Luong Quang Huy, Department of Hydrology, Meteorology and Climate Change (MONRE, Vietnam). In his presentation, he overviewed the GHG emission status in Vietnam. He showed that Vietnam economy growth rate is 6.5%, being one of the fastest developing countries. Although Vietnam is a developing countries, but the GHG emission per capita is quickly growing and being the highest GHG emission per capita. The plans for GHG emission management and carbon market development (Decision 1775/QD-TTG by Vietnam Prime Minister) are major orientations for developing National Action Plan on Climate Change and National Action Plan on Green Growth. From these action plans, Vietnam Government has established two important strategies, consisting of National Climate Change Strategy in 2011 and National Green Growth Strategy in 2012. Currently, many laws and legal documents related to the response to climate change have been issued in Vietnam, consisting of Law on Mining activities (2010), Land Law (2013), Law on Environmental Protection (2005), Law on Biodiversity (2008), Law on Water Resources (2012), Law on Natural Disaster Risk Prevention and Reduction (2013), Law on Environmental Protection (2014), and Law on Meteorology and Hydrology (draft). He also emphasized that the ratio of CO<sub>2</sub> emission per GDP in Vietnam is growing at a fast rate in comparison with that of other countries in the Asia-Pacific region. Following the prediction of the BAU scenarios, the CO<sub>2</sub> emission in Vietnam will range from approximate 600 to over 700 MtCO<sub>2</sub>e. Major sectors of GHG emissions in Vietnam are energy, industrial processes, agriculture, land-use and land cover change, waste. Thus, Vietnam needs to put more effort into reducing emissions, use the opportunity to change economic development path and integrate into “globalized climate change mitigation”. For Vietnam’s pledges on GHG emission reduction, he showed that Vietnam need to reduce total amount of GHG emissions by 8 – 10% from 2011 to 2020 in comparison with year 2010. From 2020 – 2030, and towards 2050, the reduced rate of the GHG emission should be from 1.5 – 2.0%/year. Among reducing GHG activities, renewable energy shall increase to 4% of the total electrical energy and the forest cover shall reach to 45%. Moreover, in next several decades, Vietnam needs to implement and develop cooperation and bilateral mechanisms with other nations in some fields such as green technology, low carbon technology, low carbon development etc. Thus, the JCM projects are one of the important mechanisms for developing low carbon society.

Summary of opportunities and challenges of reducing GHG emissions in Vietnam:

### *Opportunities*

- Develop Nationally Appropriate Mitigation Actions (NAMAs);
- Review carbon-intensive industries which seriously affect the environment and development;

- Development of emission standards for industry, energy, transportation and construction sectors;
- Enhance fuel efficiency and encourage the development and use of new and renewable energies;
- Implementation of GHG inventory in industrial sectors and local areas;
- Encourage green communities (low emissions);
- Fundamentally change economic growth path.
- Raising awareness of the importance and significance of both adaptation and mitigation;
- Enhance adaptive capacity and mitigation for central and provincial agencies;
- Strengthen research on climate change and development;
- Institutional capacity building and policy support to respond to climate change;
- Develop economic / financial policies and tools;
- Review and supplement ministerial and regional planning in order to effectively integrate and implement adaptation and mitigation activities;
- Enhance participation in international negotiations and cooperation.

#### *Challenges*

- Incomplete National GHG Inventory system,
- Inadequate policies and guidance for NAMA development and management,
- Few application of advanced technologies to reduce GHG emission,
- Financial support and investment remain limited,
- Fragmented and few technology transfers and technical support
- Few capacity building programmes, only top-down approach at this stage.

#### **Introduction to 3E Nexus Initiative and Joint Crediting Mechanism for sustainable low carbon development in Asia-Pacific region**

The third presentation entitled “Introduction to 3E Nexus Initiative and Joint Crediting Mechanism for sustainable low carbon development in Asia-Pacific region” was presented by Prof. Dr. Hirotaka Matsuda from Integrated Research System for Sustainability Science (IR3S), The University of Tokyo, Japan. Prof. Matsuda showed that the 3E Nexus project aims to advance mitigation action by facilitating the diffusion of advanced low-carbon technologies, products, systems, services and infrastructures in line with the Japanese Joint Credit Mechanism (JCM). The goals of the 3E nexus are (1) to promote awareness of national/local government and local business on the JCM and advanced technology, (2) recognize local requirements and similar with advanced technologies in order to

understand co-benefits, (3) to assist Japanese business to develop the JCM project, and (4) to create enabling environment for advanced low carbon technologies. The 3E nexus also aims to enhance regional research network on low-carbon development in Asia-Pacific countries and academic activities such as workshop and training and technical aspects such as GHG emission reduction project and measuring, reporting and verification (MRV) methodologies of the JCM projects. The 3E nexus network is currently joining by 17 countries: Bangladesh, Cambodia, China, Fiji, India, Indonesia, Japan, Laos PDR, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam. The 3E nexus consortium is shown in Fig. 3 and consisted of three levels of institutions, consisting of the Head Quarters located in IR3S at the University of Tokyo, Japan, and the One Stop Service located in the participated countries. The One Stop Service is to act as the main researcher to connect the academic institutions, governments, stakeholders, and communities within the participated country with the Head Quarters (Figure 3).

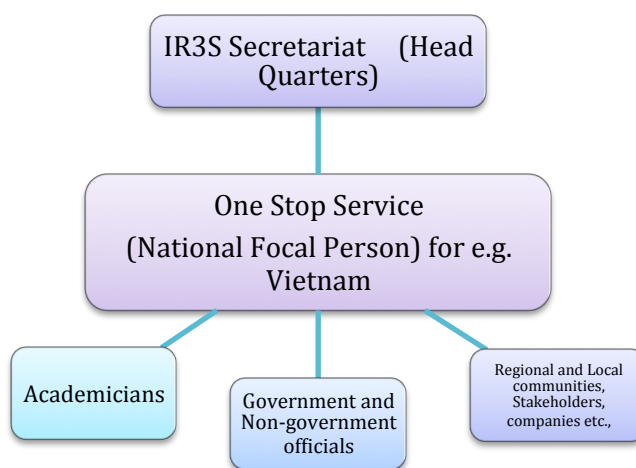


Figure 3. The 3E nexus network consortium

Prof. Matsuda continued to give his talk on the Joint Crediting Mechanism (JCM) projects for sustainable low-carbon development in Asia-Pacific region. He showed that both developed and developing countries should achieve low-carbon growth all around the world by fully mobilizing technology, markets and finance in order to successfully address the issue of climate change. In which, extensive use of advanced low-carbon technologies and products in various fields including renewable energy, highly efficient power generation, home electronics, low-emission vehicles, and energy-savings in factories must be accelerated. Thus, the JCM aims to facilitate diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries (Figure 4).

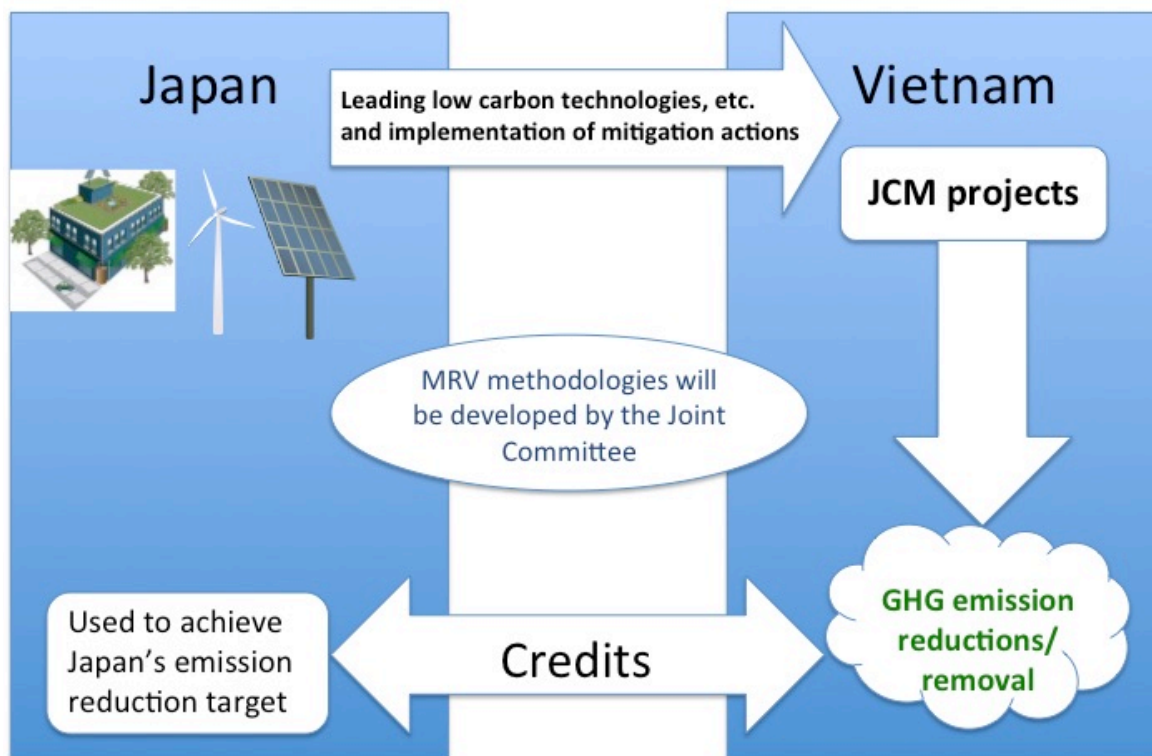


Figure 4. Scheme of the JCM mechanism

The overall goal of the JCM is to create a leapfrog development in developing countries to avoid a high energy lock-in type development (Figure 5). In which, developing countries need to implement low-carbon development for reducing carbon emission per capita. The platform to support leapfrog development in developing countries is established three sub-platforms, consisting of business, local government and research platform. The business platform aims to provide a One-Stop service to support business, to share information, local regulations, and the needs, to match partnership among companies. The local business platform has a function as promotion of city-to-city environment cooperation, and support for Japanese companies to disseminate low carbon technologies. The research platform plays important roles in support for cooperation between researchers and policymaker, support for low carbon plan in countries/cities and promotion of joint research between Japanese institutions and counterpart in host countries.

The JCM should be designed and implemented, taking into account the following:

- Ensuring the robust methodologies, transparency and the environmental integrity;
- Maintaining simplicity and practicality based on the rules and guidelines;
- Promoting concrete actions for global GHG emission reductions or removals;
- Preventing uses of any mitigation projects registered under the JCM for the purpose of any other international climate mitigation mechanisms to avoid double counting on GHG emission reductions or removals.

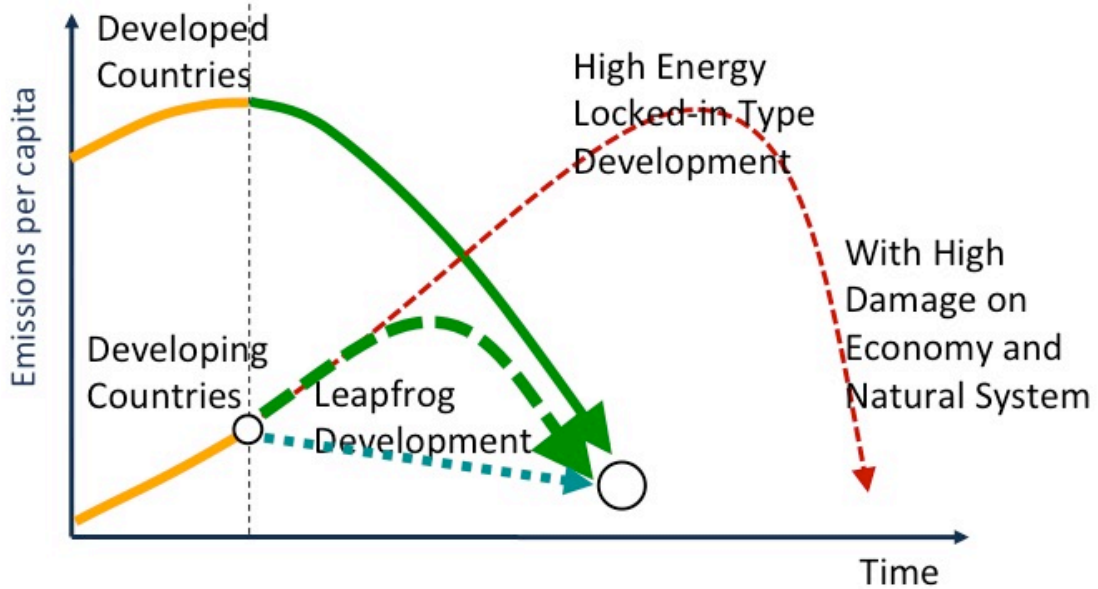


Figure 5. Modeling sustainable clean and low-carbon Asia

The JCM has four major features:

- The JCM starts its operation as the non-tradable credit type mechanism.
- Both Governments continue consultation for the transition to the tradable credit type mechanism and reach a conclusion at the earliest possible timing, taking account of implementation of the JCM.
- The JCM aims for concrete contributions to assisting adaptation efforts of developing countries after the JCM is converted to the tradable credit type mechanism.
- The JCM covers the period until a possible coming into effect of a new international framework under the UNFCCC.

The methodology of JCM project should be established to reduce emission based on the follow criteria:

- To accelerate the deployment of low carbon technologies, products and services, which will contribute to achieving net emission reductions;
- To facilitate the nationally appropriate mitigation actions (NAMAs) in host countries.



**Figure 6. Procedure of Project Cycle of the JCM**

The procedure of JCM projects should be implemented follows in Figure 6. The project participants should submit the proposed methodology to the Joint Committee of Japan and host countries. The Joint Committee will consider the proposed methodology for approving. Based on the decision of Joint Committee, the project participants will develop the Project Design Document (PDD). Then the third party entities will make validation and Joint Committee can register the results. The project participants continue to monitor the project results and one again the third party entities will make verify the carbon emission reduction and issue the carbon credits for the JCM project.

The PDD of JCM project must contained the followed contents:

Project description with host countries

- Title of the JCM project
- General description of project and applied technologies and/or measures
- Location of project, including coordinates
- Name of project participants
- Duration
- Contribution from developed countries

Application of an approved JCM methodology(ies)

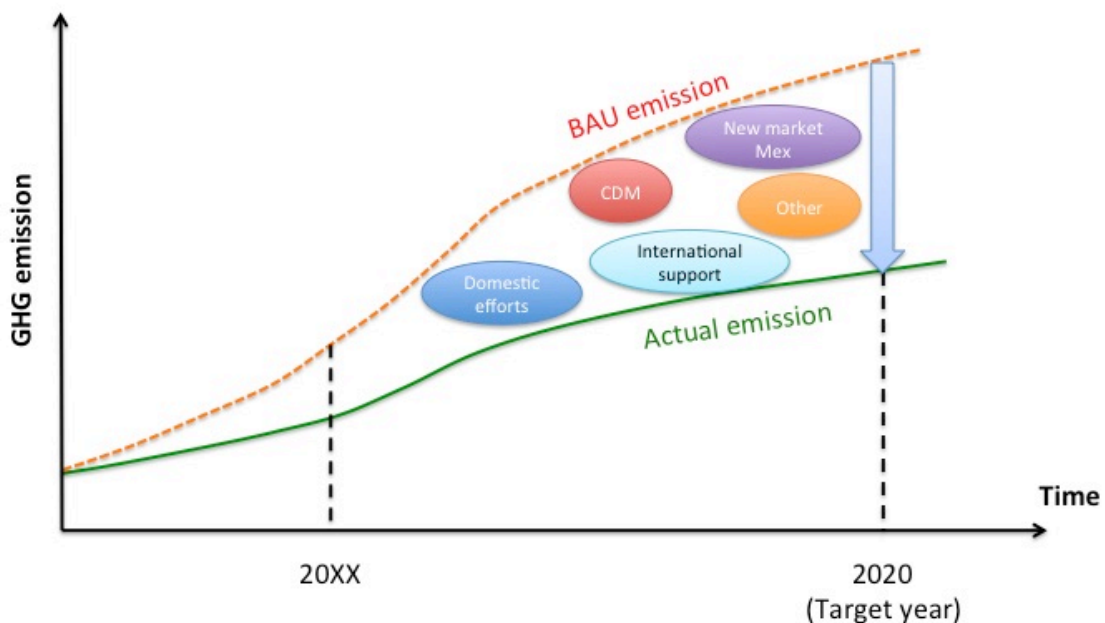
- Selection of JCM methodology(ies)
- Explanation of how the project meets eligibility criteria of the approved methodology

Calculation of emission reductions

- All emission sources and their associated GHG relevant to the JCM project
- Figure of all emission sources and monitoring points relevant to the JCM project
- Estimated emissions reductions in each year

#### Environmental impact assessment

- Local Stakeholder consultation
- Solicitation of comments from local stakeholders
- Summary of comments received and their consideration



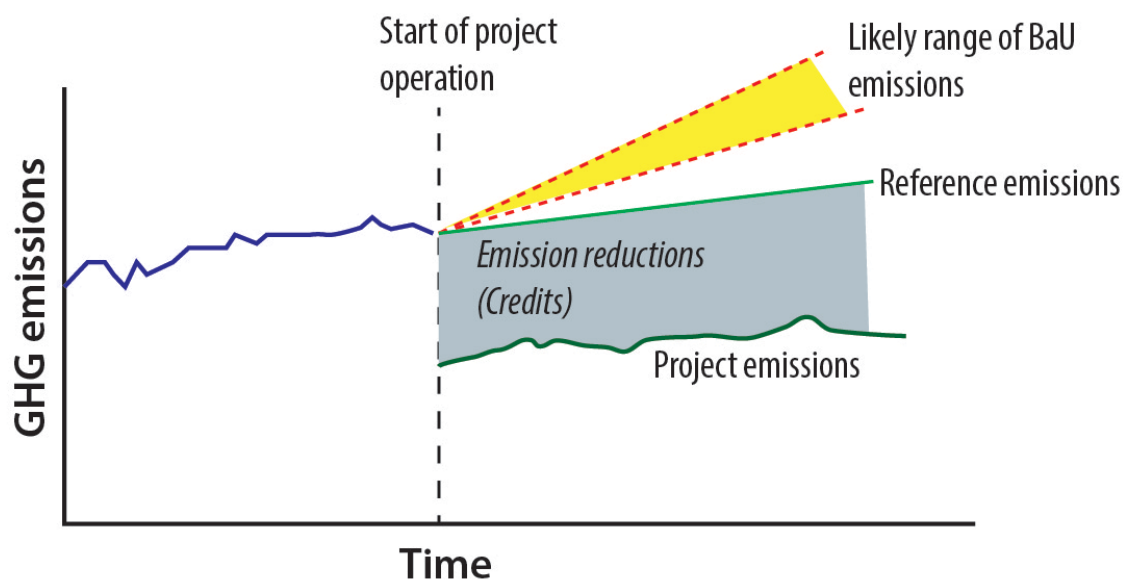
**Figure 7. Background of the mitigation action for GHG emission reduction**

Monitoring (M), Reporting (R) and Verification (V) (MRV) is a concept that integrates three independent processes: Measuring or Monitoring (M), Reporting (R) and Verification (V). The term MRV originally came from the Bali Action Plan, the negotiating text of the UNFCCC (UNFCCC, 2007) in Bali, Indonesia at the end of 2007. The MRV can be defined “the basic understanding of the Bali Action Plan is that climate change mitigation actions – mainly GHG emissions reductions – shall be implemented in a “measurable, reportable and verifiable” manner, and this idea has brought significant implications for international negotiations since then”. In the context of mitigation actions of NAMAs, the MRVs can be described as the amount of emission reduction by domestic and international actions (Figure 7).

In the JCM, emission reductions to be credited are defined as the difference between “reference emissions” and project emissions. The reference emissions are calculated below business-as-usual (BaU) emissions, which represent plausible emissions in providing the

same outputs or service level of the proposed JCM project in the host country (Figure 8). This crediting approach will ensure a net decrease and/or avoidance of GHG emissions.

Reference emissions are calculated by multiplying a “crediting threshold” which is typically expressed as GHG emissions per unit of output with total outputs. A crediting threshold should be established ex ante in the methodology applicable for the same project type in the host country. It should also be established conservatively in order to calculate reference emissions below BaU emissions.



**Figure 8. Basic concept for Crediting under the JCM**

This standardized approach will greatly reduce the burden of analyzing many hypothetical scenarios for demonstrating additionality of the proposed project such as under the CDM, while increasing transparency for calculating GHG emission reductions.

A net decrease and/or avoidance of GHG emissions can be realized in alternative way, instead of calculating the reference emissions below BaU emissions (Figure 9). Using conservative default values in parameters to calculate project emissions instead of measuring actual values will lead calculated project emissions larger than actual project emissions. This approach will also ensure a net decrease and/or avoidance of GHG emissions, as well as reduce burdens of monitoring.



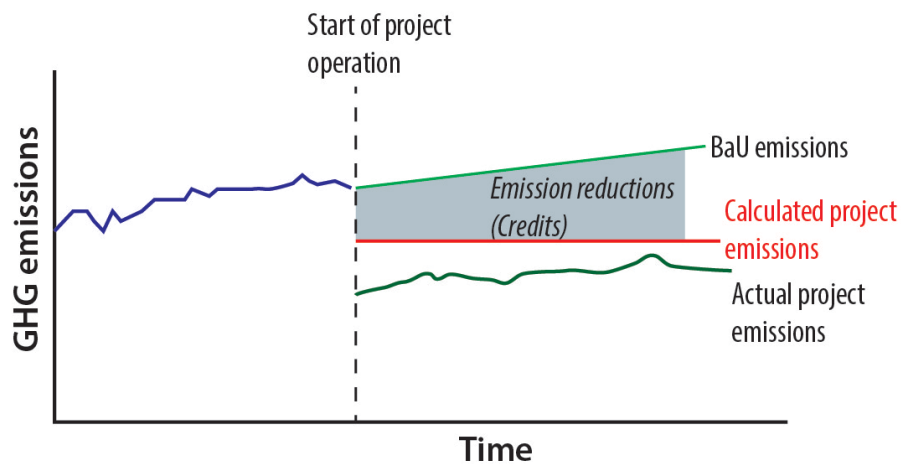


Figure 9. Scheme of the additional ways to realize net reduction

For conclusions of his presentation, Dr. Geetha Mohan has shown several lessons learned and way forward to develop the JCM projects:

- Several MOEJ's JCM Model Projects and Studies have been undertaken, and more JCM projects need to be developed utilizing the Study Programmes (GEC, 2014).
- The MOEJ's Financing programme have worked as a strong initiate for sustainable low carbon development, but the good understanding of co-financiers on JCM is also the key for achievement (GEC, 2014).
- MRV methodologies have been simultaneously developed to reduce the burden for MRV activities. Various data for setting default values and reference scenarios needs to be systematically collected (GEC, 2014).
- Efforts under the co-benefits approach initiative include identification of technologies, development of evaluation tools, and piloting climate mitigation measures with co-benefits (MOEJ, 2012).

#### Prof. Kensuke Fukushi, proposal writing lecture (VIDEO)

The afternoon section of the workshop was continued by an interesting lecture of Prof. Kensuke Fukushi from The Tokyo University, Japan. He introduced the procedure for development of JCM project proposals. The lecture contained several sections, including an introduction to JCM scheme, proposal development preparation. In his lecture, Prof. Fukushi suggested that timing of proposal development annually starts from March to September. The call for proposal can come from various programs and organizations such as MOEJ and MITI. The proposal should be started several months earlier than March. The applicant should select appropriate the Japanese counterparts. Ideally, the applicant should negotiate and have signed MOU with the Japanese counterparts. He emphasized that the JCM proposal should strictly follow the format, and applies proposed methodologies to calculate the CER and other parameters. The appropriate reduction efficiency should be

clearly made and demonstrated the co-benefit between counterparts. Additionally, the JCM project size should not be too small.

### Joint Crediting Mechanism (JCM) in Vietnam

The last presentation was presented by Mr. Le Ngoc Tuan from Department of Hydrology, Meteorology and Climate Change (MONRE), entitled “Joint Crediting Mechanism in Vietnam”. He summarized several aspects, progress development of the JCM in Vietnam. He showed that many economical, industrial, and agricultural sectors could be participated to develop the JCM projects. He emphasized that the JCM can provide many benefits for Vietnamese enterprises such as financial and technological supports from Japan government, promotion of technological renewal toward low-carbon society, contribution to reconstruct sustainability of economy, environmental protection and GHG emission reduction. The opportunities of the JCM in Vietnam are very large with the greater priority support from Vietnam government for developing mechanism of GHG emission reduction while the carbon price declining in the CDM market. For Vietnamese enterprises, they will receive financial and technical support from Japan government for low-carbon development.

According his presentation, the number of JCM projects in Vietnam, consisting of feasibility studies, planning studies, model and demonstration projects markedly increases in the period of 2010 – 2015 (Figure 10). However, only two projects are successfully registered among more than 60 proposed projects. The two successful projects are VN001-“*Eco-Driving by Utilizing Digital Tachograph System*” and VN002-“*Promotion of green hospitals by improving efficiency / environment in national hospitals in Vietnam*”. The limited numbers of successful projects demonstrated the difficulty of the JCM scheme.

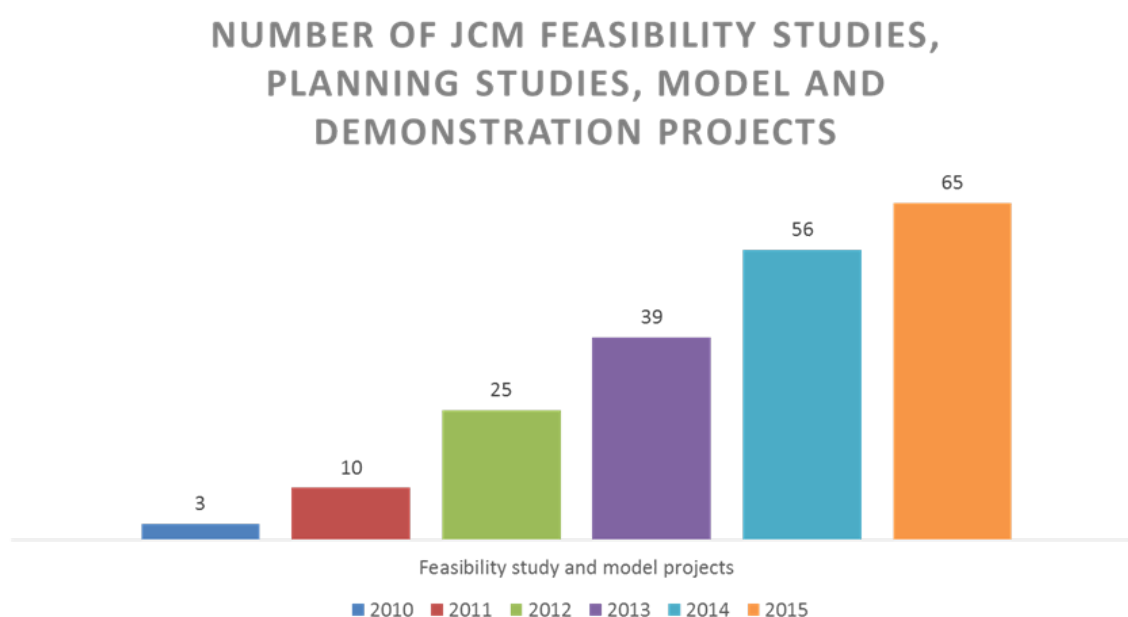


Figure 10. Number of JCM projects in Vietnam from 2010-2015

Continuing his talk, Dr. Tuan also showed many challenges of the JCM in Vietnam such as the JCM is a new mechanism in Vietnam, lack of guideline for developing the JCM projects, and crediting share between Vietnam and Japan is not clear and crediting share transfer to international market is difficult because the JCM has not been accepted by international communities. Additionally, Vietnamese enterprises still lack of information related to MRV and PDD in the JCM. He proposed that both Vietnam and Japan should cooperate to revise and complete the procedures and financial mechanisms for JCM projects. Vietnam needs to establish decision and guideline related to implement JCM project, to establish consultant organization for JCM, to promote JCM through workshop and seminar in the academic, business, industrial and other social sectors. Additionally, JCM secretariat of Vietnam will support the implementation JCM projects at larger scales and aligned with local development needs and business needs to technology and develop a credit distribution mechanism to ensure benefits of project stakeholders.

### **Workshop discussions**

In both morning and afternoon sections of the workshop, participants actively asked and discussed on the JCM and related issues of the mitigation programs. The summary of discussion sections are shown as follows:

#### **In morning section**

In the discussion panel of morning section, many questions are raised by participants for four presenters. Some questions and answers are shown as follows:

- How does 3E Nexus Initiative support JCM?
  - 3E Nexus is a concept on achieving sustainability science, and IR3S is the secretariat for 3E Nexus and JCM. 3E Nexus can consult with researchers on concepts, etc. and disseminate through researchers.
- What kind of co-benefits exists in green communities?
  - For any projects, both counterparts must bring other benefits to communities, and these benefits must be higher than what they lose by implementing projects
- Please give an advice on how to improve JCM implementation in Vietnam?
  - Comments not advice: some obstacles such as policies, many projects have been submitted for consideration at the JCM committee desk, many methodologies have been approved under JCM scheme.
- VNU will be One-Stop Service in the future, and what is the relationship with companies and other stakeholders?
  - The role of One-Stop Service is to look for companies, sectors interested in JCM to

collaborate with inside Vietnam, to conduct capacity building projects to companies, communities – knowledge transfer, and to contact with 3E Nexus in Japan for finding companies in Japan

- One-stop service is very attractive; can Japanese company contact the one-stop service in Vietnam?
  - So far, the One-Stop Service only targets mainly academicians but we hope to also include private companies from now on.
- Getting data for setting default values and reference scenarios: it is difficult to get data in our local companies. Request from practitioner to academia – could you please gather the information to establish data. Especially for energy efficiency improvement, it is usually difficult to quantify even though it is important
  - We would like to gather in future, and we are also targeting capacity building in partner countries.
  - Please input what kind of scheme or initiative is needed in Vietnam from private companies like you. Evaluating GHG emissions is difficult, and how do we share Japanese knowledge to local countries?

#### In afternoon section

- Mechanism of JCM is not clear yet, difficult to perform JCM projects. Does JCM committee of Vietnam have guidelines to develop JCM projects and how can companies follow?
  - The JCM projects would meet requirements of the Development Orient of Vietnam Government for green growth, for cooperation with international communities to offset climate change. The JCM will provide many opportunities to renovate technology and increase the competitive ability for enterprises; to develop science and technology and innovative enterprises; to develop academic institutions; and to promote public-private-partnership cooperation.
  - Vietnam needs to contact with Japan to make the guideline, other countries like Indonesia and Thailand have the same difficulty/questions. Currently, only 1 guideline is developed for the JCM, but this guideline does not clearly indicate how to develop JCM proposal.
  - JCM secretariat should contact with Japanese site about how to make the procedure for registered project easier, i.e. free import tax for new technologies so businesses can import easier.
  - Additionally, JCM in Vietnam will become more competitive with the inclusion of more partner countries in the near future. The JCM is a new mechanism for reducing

GHG emissions in Vietnam. However, the JCM may have lower cost-benefits in comparison to the high carbon technology for many enterprises. There are an inadequate policy mechanism and weak responsibility of enterprises and business in low carbon development. Additionally, the policy system of low carbon development and adaptive with climate change are somewhat complicated for enterprises and businesses. In Vietnam, there is lack of policy and obligation for the enterprises to develop the green technology. Moreover, the advanced technology is strongly dependent on the international providers and markets.

- What are the criteria for selection/evaluation of projects? If it takes time/cost to apply, how can the businesses apply? JCM projects are all given 50% discount or not?
  - Firstly, many financial support for JCM projects from MOEJ and MITI. Some organization such as OECC and GEC can assist in proposal steps/methodology proposals for JCM projects.
  - Secondly, we should know that the registration of JCM projects needs to go step-by-step from proposal methodologies, MRV, etc.
  - Thirdly, criteria for selection: we firstly need to find counterpart from Japan because major objective of JCM is use Japanese technology. Some other ways to find the financial support is from other funding such as ADB. If you use ADB financial support, you do not need to use Japanese technology but similar concept is needed. For example, if some companies want to invest the heat pump technology, but cost-benefit between Japan and China, then they may choose cheaper option.
- How much time needed to submit/approve project?
  - Time for evaluation is usually very quick, example only 1 year for proposal development and PDD. Once methodology and PDD submitted, consortium will send PDD to stakeholders/committee, evaluated within 5-7 weeks. The time for evaluation depends on methodology and PDD.
- Developing JCM project cement waste-heat recovery plant in Vietnam. Considering whether EIA need to be included in feasibility study, or not?
  - Projects should follow the laws on EIA.
- Why are there 70 proposals submitted but only 2 selected?
  - We should understand that 70 projects, including FS, DS and PS and not only proposals. This is fewer than Indonesia which has 220 proposals but very few projects are successful. The JCM scheme needs many steps for evaluating the ideas and financial supports.
- What is the role that academic stakeholders can play in JCM?

- Japan has more active academic institutions, i.e. OECC, academic institutions in Vietnam can help develop methodology and default values for the parameters used in JCM projects.

- Why the 2 successful projects are related to energy saving?

- Because JCM is focused on many sectors, but currently, the energy sectors are more attractive for reducing GHG emissions.

### **Individual discussion session**

In the afternoon section, several Japanese and Vietnamese companies introduced their company information and future plans on JCM scheme. The companies included MUFJ Morgan Stanley Securities, Yuko Keiso Co., Ltd., Hitachi Metals Hanoi and JFE Engineering.

### **Conclusions and wrap-up**

Conclusions of the workshop are made by Prof. Mai Trong Nhuan. He summarized that the JCM is a very good to perform INDC, NAMA, contribute to CDM program. He showed that there are more opportunities to develop JCM projects because the success of Paris Agreement. However, the JCM projects are difficult to conduct a good emission reduction with low cost, thus Japan and Vietnam should focus on making clearly the investment-cost benefits. For saving the time of registration, the JCM scheme should consider to make shorter and better timeline for accepting proposals.

## Appendices

### List of participants of the first workshop on December 14<sup>th</sup> 2015

Participant	Organization	Sector
Bùi Thị Hoa	VNU University of Science	Academia
Chisato Nakade	Mitsubishi UFJ Morgan Stanley	Business
Trần Ngọc Vân	VNU University of Science	Academia
Đặng Ngọc Thăng	VNU SIREC	Academia
Đỗ Minh Đức	VNU University of Science	Academia
Đoàn Hương Mai	VNU University of Science	Academia
Đoàng Thị Phương Thảo	VNU SIREC	Academia
Geetha Mohan	The University of Tokyo	Academia
Hà Văn Cường	Huy Thang Limited Co.	Industry
Hinotaka Matsuda	The University of Tokyo	Academia
Hiroimi Kwoyanashi	Yuko Keiso	Business
Hoàng Thị Minh Thảo	VNU University of Science	Academia
Hoàng Thị Nhung	VNU SIREC	Academia
Hoàng Xuân Cơ	VNU University of Science	Academia
Hồ Anh Tài	Government Office	Policymaker
Lâm Tuấn Mạnh	VNU SIREC	Academia
Lê Hữu Tuyền	VNU University of Science	Academia
Lê Ngọc Tuấn	Department of Meteorology, Hydrology and Climate change	Policymaker
Lê Sỹ Chính	Hong Duc University	Academia
Lê Thị May	Vapero Limited Co, VN	Industry
Lê Thị Nga	VNU SIREC	Academia
Lê Thị Thoa	Hanoi University of Natural Resources and Environment	Academia
Lương Lê Huy	VNU SIREC	Academia
Lương Quang Huy	Department of Meteorology, Hydrology and Climate change	Policymaker
Matsuda Takeo	Yuko Keiso, Vietnam	Business
Ngô Thế Vinh	Institute of Construction Economics	Industry
Ngô Văn Dung	Department of Science and Technology of Phu Tho	Policymaker
Ngô Văn Dũng	VNU HSB	Business
Nguyễn Đình Thái	VNU University of Science	Academia
Nguyễn Đức Hoài	VNU University of Science	Academia
Nguyễn Ngọc Quỳnh	Hoa Binh Xanh Joint Stock Co.	Industry
Nguyễn Quỳnh Trang	Vapero Joint Stock Co.	Industry
Nguyễn Tài Giang	VNU SIREC	Academia
Nguyễn Thành Nam	VNU University of Science	Academia
Nguyễn Thanh Sơn	Hitachi Metals	Industry
Nguyễn Thế Vinh	JFE Engineering company	Industry
Nguyễn Thị Duyên	VNU SIREC	Academia
Nguyễn Thị Hải	VNU SIREC	Academia
Nguyễn Thị Hào	VNU SIREC	Academia
Nguyễn Thị Hoàng Hà	VNU University of Science	Academia
Nguyễn Thị Mai Ngân	VNU SIREC	Academia

<b>Participant</b>	<b>Organization</b>	<b>Sector</b>
Nguyễn Thị Ngọc Lan	LCBB GIF	Business
Nguyễn Thị Thu Hà	VNU University of Science	Academia
Nguyễn Văn Hà	VNU SIREC	Academia
Nguyễn Văn Nguyên	SAMAVINA Limited Co.	Industry
Phạm Thị Dậu	VNU University of Science	Academia
Phạm Tuấn Anh	COMPA Trade & Development Co.	Industry
Nguyễn Ngọc Kinh	Department of Science and Technology of Phu Tho	Industry
Thái Thị Hương Giang	VNU SIREC	Academia
Trần Đăng Quy	VNU University of Science	Academia
Trần Huy Phương	VNU HSB	Business
Trần Minh Tiến	Hanoi Viet 668 Joint Stock Co.	Industry
Trần Quốc Bình	VNU University of Science	Academia
Trần Văn Thụy	VNU University of Science	Academia
Uông Ngọc Thanh	Hitachi Metals	Industry
Vũ Thị Hân	VNU SIREC	Academia
Vũ Tuấn Cường	Department of Science and Technology of Phu Tho	Policymaker
Vũ Văn Tích	VNU University of Science	Academia
Yuki Hashimoto	The University of Tokyo	Business



## Workshop photos



**Photo 1:** Representative participants in the JCM workshop at VNU University of Science



**Photo 2:** Asso. Prof. Dr. Vu Van Tich - Head of Science and Technology Department of Vietnam National University is giving opening and welcome remarks



**Photo 3:** Dr. Nguyen Tai Tue is giving workshop introductory remarks



**Photo 4:** Prof. Dr. Mai Trong Nhuan is presenting the context of Joint Crediting Mechanism JCM & Intended Nationally Determined Contributions (INDC) in Vietnam



**Photo 5:** Dr. Luong Quang Huy is presenting NAMA and GHG emission reduction: Policy Landscape and Gaps in Viet Nam



**Photo 6:** Prof. Dr. Hiroataka Matsuda is giving the presentation, entitled “Introduction to Energy, Environment and Ecosystems (3E) Nexus Initiative and Joint Crediting Mechanism (JCM)”



**Photo 7.** Mr. Le Ngoc Tuan (right side) is answering the questions from participants on the opportunities and challenges for development of JCM projects in Vietnam



**Photo 8.** Individual introduction



**Photo 9.** Participants are attending lecture of Prof. Kensuke Fukushi