

JICA Climate Mitigation  
Cooperation in Vietnam  
-SPI-NAMA Project's  
Achievement and Lessons-

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Project to Support the Planning and  
Implementation of NAMAs in a MRV Manner  
in Vietnam (SPI-NAMA)

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# Project to Support the Planning and Implementation of NAMAs in a MRV Manner in Vietnam (Example of technical cooperation scheme)



## Project Term:

2015 Feb.-2020 Jan  
(5years)

## Project Target Group:

Ministry of Natural Resources  
and Environment (MONRE) and  
ministries/agencies related to  
mitigation  
Ho Chi Minh City

## Overall Goal

The Government of Vietnam is able to plan and implement NAMAs (climate mitigation policies and actions) in a MRV manner.

## Project Purpose:

Capacity of the Government of Vietnam to plan and implement NAMAs (climate mitigation policies and actions) in a MRV manner is enhanced

## Output 1

Capacity of MONRE to facilitate the process of development and implementation of NAMAs is enhanced

## Output 2

Capacity of the line ministries and local governments to plan, implement and MRV NAMAs is enhanced.

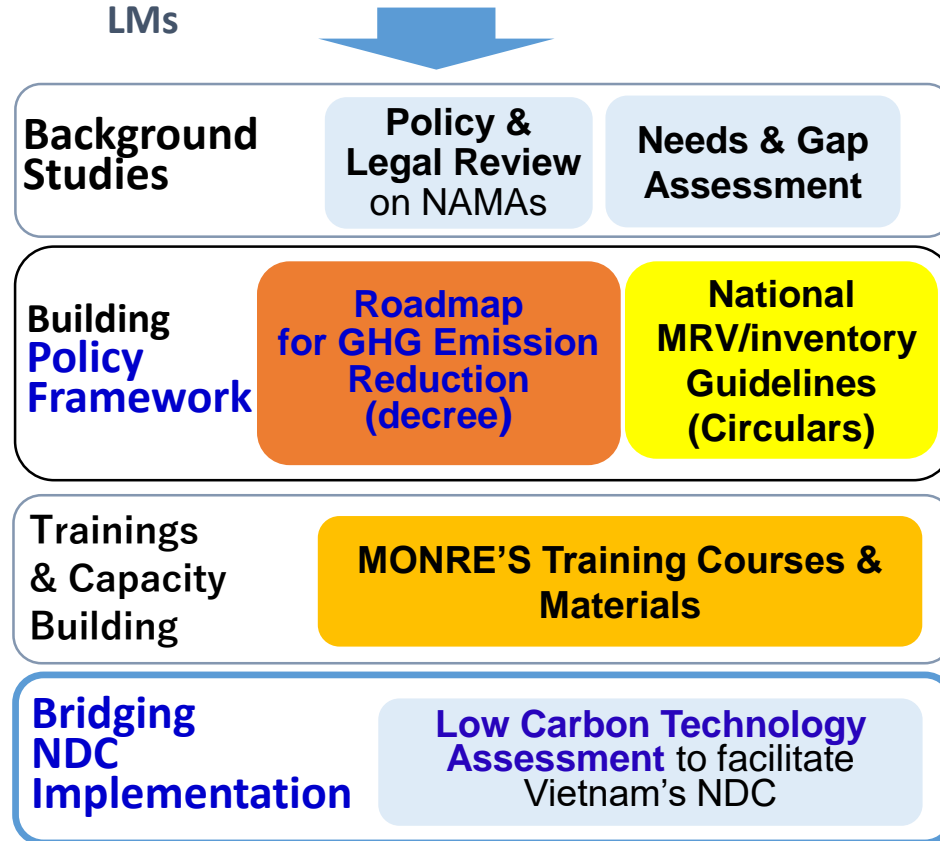
# Project to Support the Planning and Implementation of NAMAs in a MRV Manner

Project Term: 2015 Feb.-2020 Jan, (5years)

## Output 1

Enhancing Capacity to facilitate develop & implement Mitigation Actions

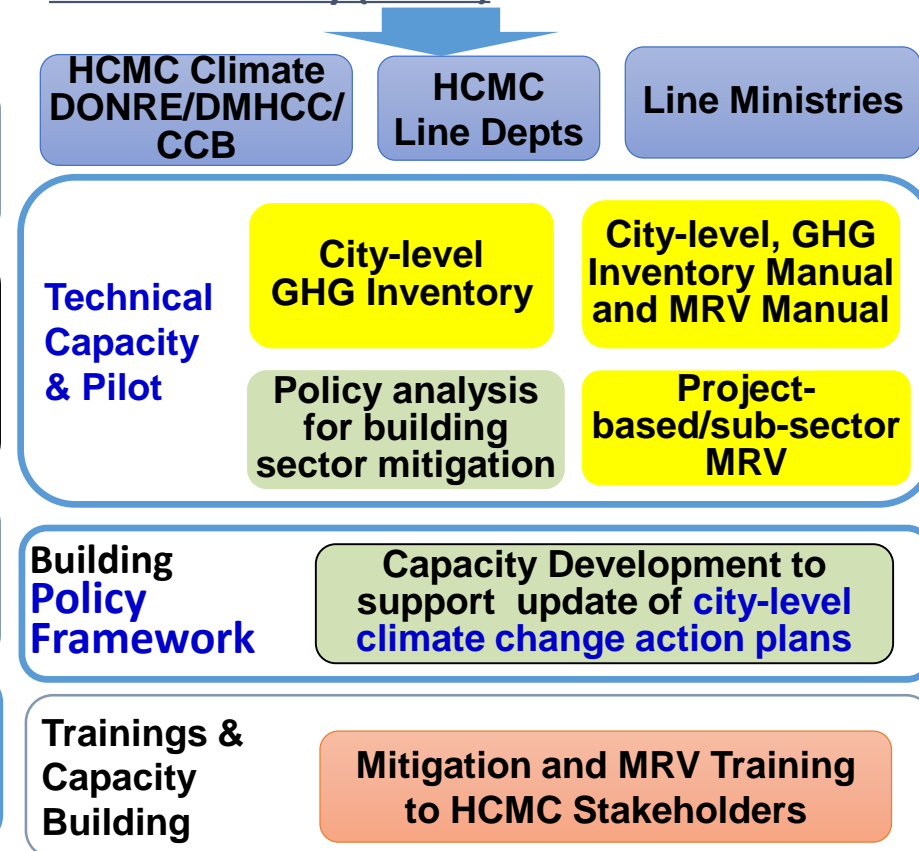
- Upstream Mitigation Policy Development to enable NDC Implementation and transparency requirement with MONRE and LMs



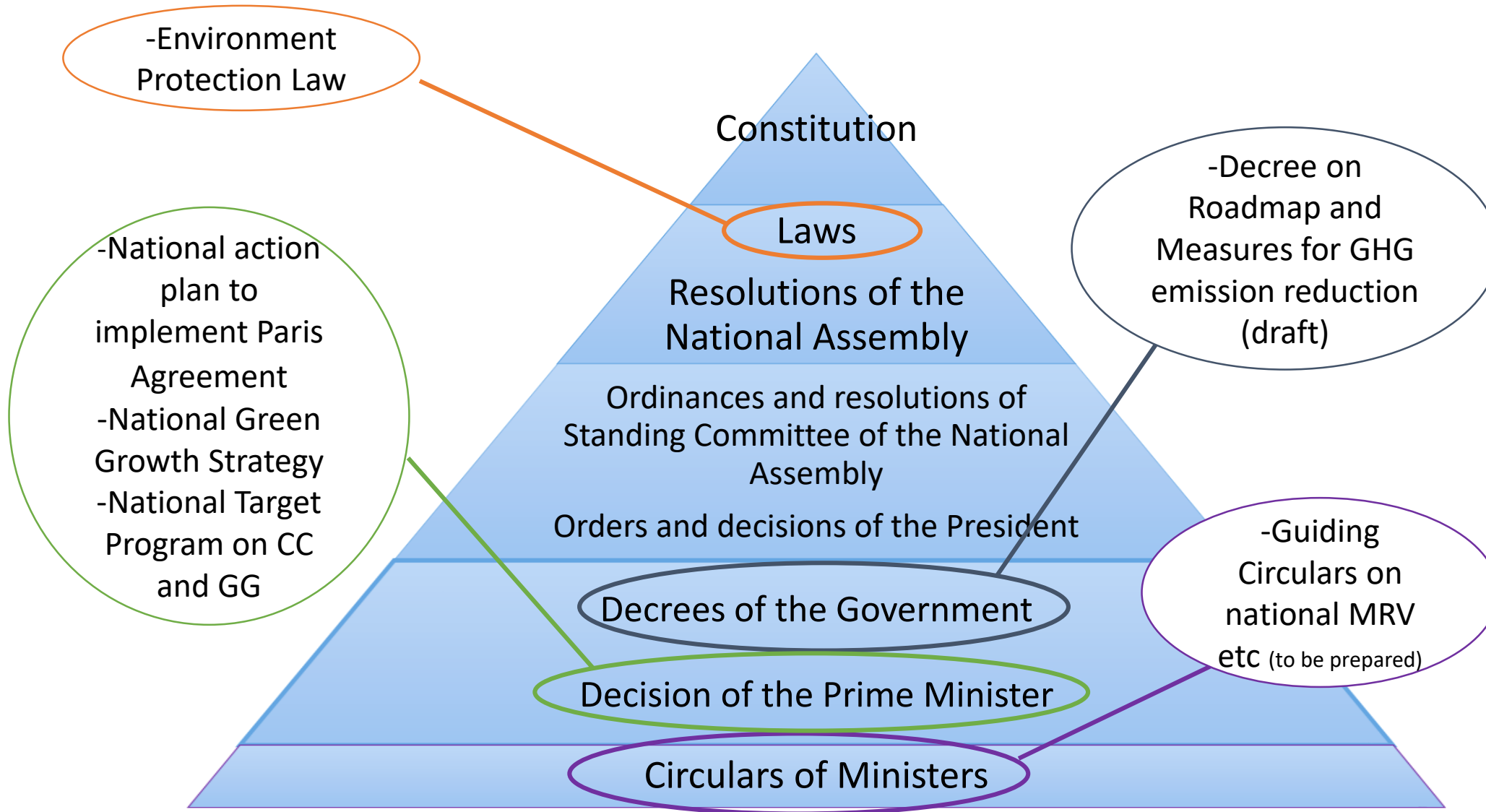
## Output 2

Enhancing Line Miniseries (LMs) & Local Government's capacity to plan, implement & MRV Mitigation Actions

- Strengthening institutional capacity to quantify & manage GHG emission and emission reduction at Ho Chi Minh City (HCMC) and LMs



# Legal System and climate policy examples



# SPI-NAMA's Orientation towards MONRE's Policy Formulation Effort (Output 1)

## Background Technical Analyses and Advisory inputs

Variety of topics/issues studied in collaboration with national experts

## Low Carbon Technology Assessment for NDC

## Domestic Multi-stakeholder Consultations

Assisted informal and formal consultation process

## External Mission to Strengthen the Policy Formulation Process (i.e. Japan / Thailand)

<Upstream Policy for NDC>

Roadmap Decree as Government Decree

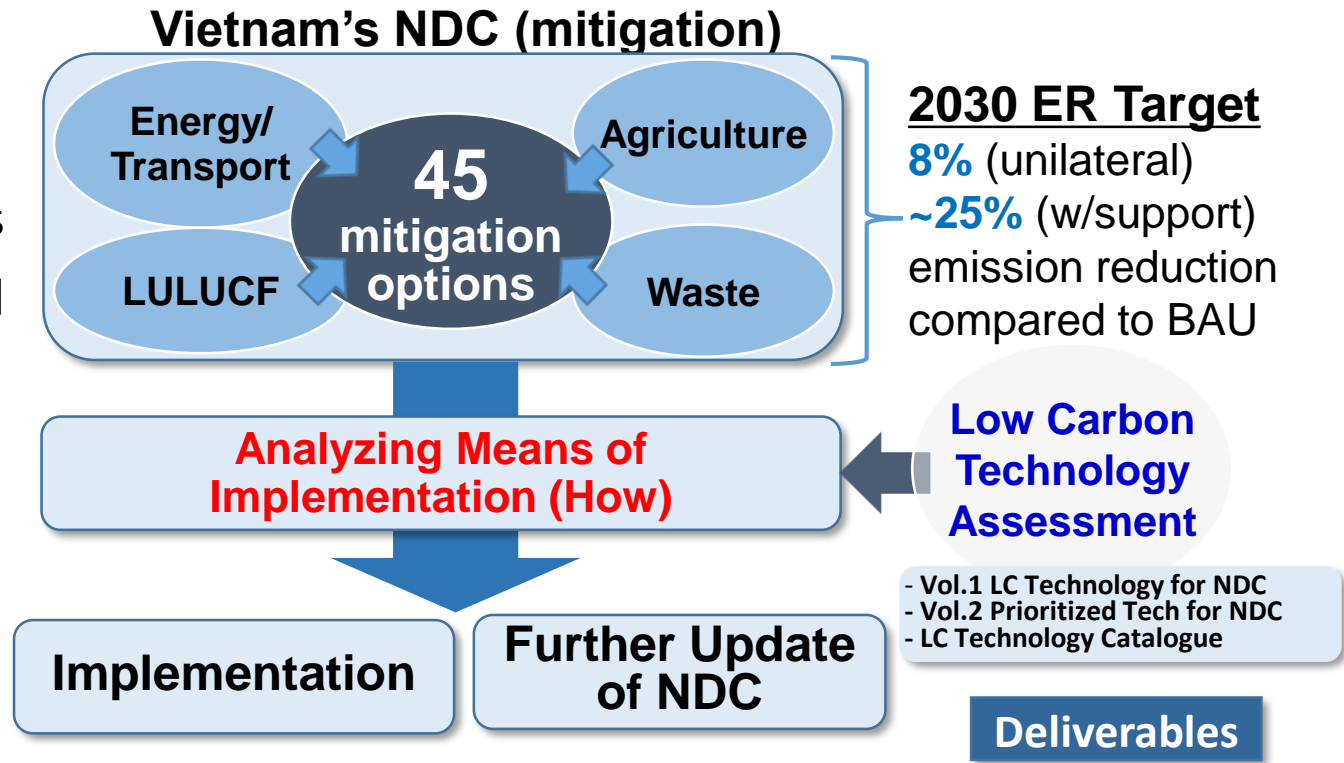
Guidelines (circulars) under the decree



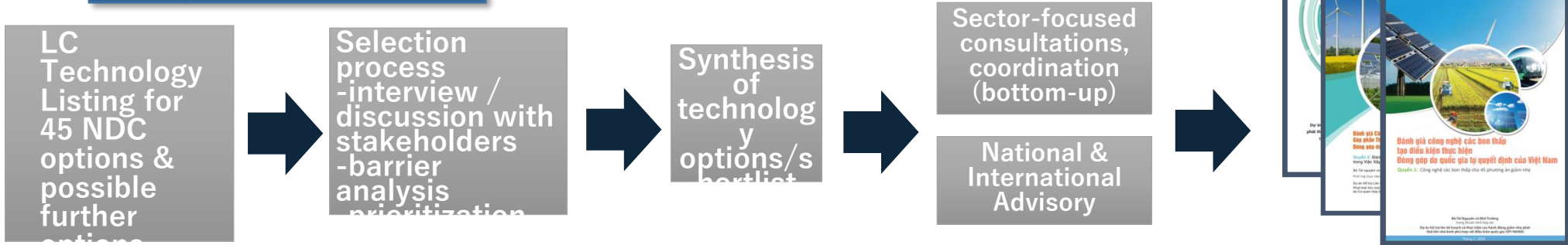
# Low Carbon Technology Assessment for NDC (2016-18)

## Background and objective

- Vietnam's current NDC presents 45 mitigation options across 4 sectors
- **Next Step needed:** need review & further elaboration on suitable low carbon technology for identified mitigation actions in NDC. Means of implementation for NDC is provided.



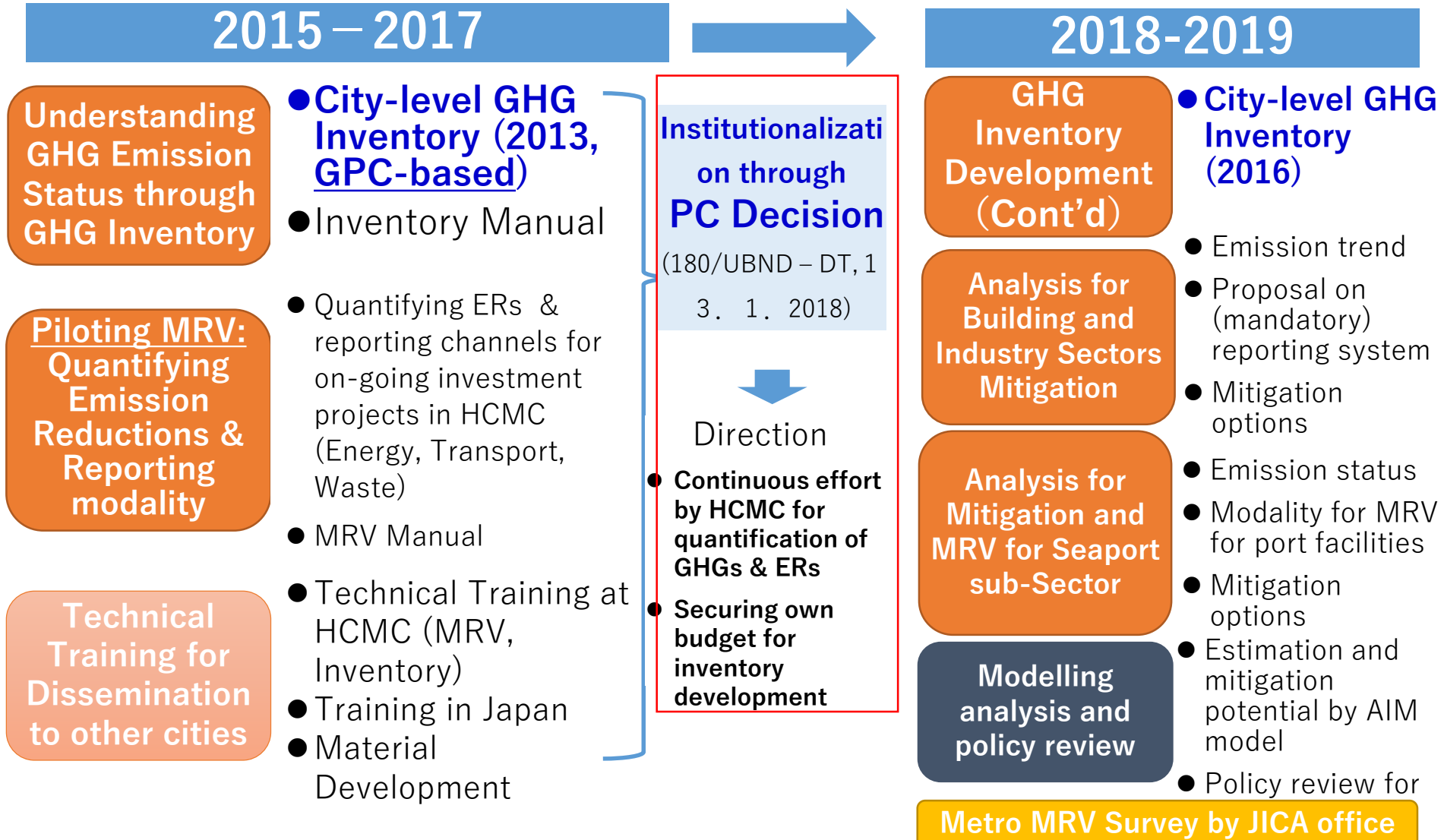
## Steps on assessment



# SPI-NAMA's Piloting activities with Ho Chi Minh City (Output 2)

Strengthening institutional capacity to quantify & manage GHG emission and emission reduction at model city

Response to HCMC's needs for updating the CCAP





# Proposed Reporting and Feedback System for Enhancing Mitigation in HCMC (Output 2)

## Carbon Reporting Template

2018 năm

### Report for Climate Change Mitigation Action

1. Khái quát về văn phòng kinh doanh

Tên của văn phòng kinh doanh: \_\_\_\_\_  
 Địa chỉ văn phòng kinh doanh: \_\_\_\_\_  
 Tổng diện tích sàn xây dựng: \_\_\_\_\_ m<sup>2</sup>  
 Type of ownership:  Self-owned  Owned by others  
 Area of Reporting:  Whole building  Part of Building (Tenant)  Part of Building (Other)  
 Main usage of reporting area:  Office  Commercial Facility (Sales)  Commercial Facility (Restaurant)  Hotel  Education  Hospital  Factory  Mixed Use ( )  Others ( )  
 Responsible Person of content of report: Name: \_\_\_\_\_ Department/Role: \_\_\_\_\_

2. Information on Production (for Factory)

Name of the Product	Unit	Production Volume of Year 2018	Designed Capacity

3. Energy Consumption Status and CO2 Emissions Status

Type of Fuel	Annual Consumption		Net Calorific Value		Heat Energy (TJ)	Emission Factor (kg CO <sub>2</sub> /TJ)	Emission (tCO <sub>2</sub> )
	Volume	Unit	Value	Unit			
<b>Fuel and Heat</b>							
Coke	ton	31.4	TJ/Gg	0.00000	94600	0.000	
Coal							
Type 1.2 anthracite coal	ton	29.3	TJ/Gg	0.00000	98300	0.000	
Type 3.4 anthracite coal	ton	25.1	TJ/Gg	0.00000	98300	0.000	
Type 5.6 anthracite coal	ton	20.9	TJ/Gg	0.00000	98300	0.000	
Fuel Oil							
L	ton	41.5	TJ/Gg	0.00000	77400	0.000	
L	L	0.039358	TJ/L	0.00000	77400	0.000	
42.7	TJ/Gg	0.00000	74100	0.000			
0.036845	TJ/L	0.00000	74100	0.000			
Gasoline	L	44.3	TJ/Gg	0.00000	69300	0.000	
Natural Gas	Nm <sup>3</sup>	37.7	MJ/Nm <sup>3</sup>	0.00000	56100	0.000	
LPG	ton	45.6	TJ/Gg	0.00000	107000	0.000	
Purchased Steam							
Absolute pressure 6bar	ton	0.003674	TJ/Gg	0.00000	60000	0.000	
Absolute pressure 7bar	ton	0.003581	TJ/Gg	0.00000	60000	0.000	
Absolute pressure 8bar	ton	0.003690	TJ/Gg	0.00000	60000	0.000	
Absolute pressure 9bar	ton	0.003696	TJ/Gg	0.00000	60000	0.000	
Other ( )							
Other ( )							
<b>Electricity</b>							
Purchased Electricity	kWh	3.6	MJ/kWh	0.00000	0.795	kgCO <sub>2</sub> /kWh	0.000
Captive Electricity (Fuel Type: )	kWh		MJ/kWh	0.00000			
<b>Total</b>							<b>0.000</b>

Input energy consumption

Automatically convert to CO2

Asking implementation status of basic operation & technical measures

## Checklist for Energy Saving Measures

### Questionnaire about Implementation Status of Important Measures

Please check if your company implement below energy saving measure.

I. Operational Measures

Common for All	Measure	1. All area/facility	2. Most area/facility	3. Half area/facility	4. Partly	5. None
1	Lighting	Turning off light in the rooms which do not require light (vacant room, unused time)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A/C	Setting of room at recommended temperature XX°C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	A/C	Stop A/C of vacant and unused room/area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Office Equipment	Setting energy saving mode (standby mode) of PC, OA equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	A/C	Change setting temperature based on usage status of rooms and common area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Kitchen	Reduce waste of heat by showing heating time, etc	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Water supply	Check leaking water by installation of meter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

II. Measures for equipment maintenance

8	Lighting	Periodical cleaning and replacement of lighting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	A/C and Ventilation	Periodical check and maintenance of cooling equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	A/C and Ventilation	Periodical cleaning and check of A/C filter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Hot water supply	Periodical check of boiler, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

III. Measures for installation of equipment

12	Lighting	Change from incandescent lamp to fluorescent or LED lamp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	A/C	Installation of energy efficient A/C and/or chiller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Office Equipment	Installation of efficient OA equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Menu of Energy Saving Measures

### 1. Setting AC temperature to recommended temperature by the local municipality

A) Points to consider  
 It is said setting 1°C higher will change 10% of AC energy, AC temperature could make large effect on energy efficiency. Avoid over-cooling (heating), whilst balancing with appropriate clothing to adjust comfortable work environment.

B) Steps  
 I. Gain agreement within company to set AC temperature to energy efficient temperature  
 II. Apply energy efficient temperature (For areas such as meeting rooms or where people go in/out frequently, set a 2°C margin)  
 III. Adjust clothing, so there will be no need for over cooling (heating)  
 IV. Measure and monitor energy efficiency results

C) Effect  
 Setting AC temperature 1°C higher for a 10,000m<sup>2</sup> office will save...  
**Annually... 960,000 JPY**  
**19,560 kg-CO2**  
 (Note: Annual electricity consumption from consumption data of a building in To)

Calculation:  
 Electricity saving 40,000 (a) X (b)/(100 X (c)/100) = (g)  
 Utility cost saving 960,000 (g) X (d)  
 Crude oil saving 10,260 (g) X (e)  
 CO2 saving 19,560 (g) X (f)

Condition:  
 Current energy consumption 2,000,000 kWh/year  
 Ratio of AC 40 %  
 Energy saving (assumed annual average) 8 %  
 Electricity unit price 24 yen/kWh  
 Crude oil conversion coefficient 0.25 L/kWh  
 CO2 conversion coefficient 0.459 kg-CO2/kWh

Cost:  
 No additional investment required.

How much energy & cost saving is expected per investment and pay back period.

Position of the facility in the same sector

## Image of Feedback sheet

1. Tình trạng thải CO<sub>2</sub> của văn phòng kinh doanh

Hạng mục	Công mức (tấn CO <sub>2</sub> )	Năm 2014	Năm 2015	Năm 2016	Năm 2017	Năm 2018	Năm 2019	Tổng hợp của năm 2019
Lượng thải tiêu chuẩn (tCO <sub>2</sub> )	8,000	5,000	-	-	-	-	-	5,000
Tỷ lệ giảm mức thải (tCO <sub>2</sub> ) (%)	-	17.00	-	-	-	-	-	17.00
Điểm hạn trên của lượng thải (tCO <sub>2</sub> )	-	4,150	-	-	-	-	-	4,150
Nền tảng thấp (tCO <sub>2</sub> )	-	4,150	-	-	-	-	-	4,150
Lượng thải (tCO <sub>2</sub> )	4,900	4,100	-	-	-	-	-	4,100
Lượng giảm mức (tCO <sub>2</sub> )	50	-	-	-	-	-	-	50
Tỷ lệ giảm (tCO <sub>2</sub> ) (%)	10.0	18.0	-	-	-	-	-	18.0

2. Về lượng thải CO<sub>2</sub> của các cách sử dụng tương tự với văn phòng kinh doanh (kết quả thực tế năm 2015)

Hạng mục	Đơn vị	Năm 2014	Năm 2015	Năm 2016	Năm 2017	Năm 2018	Năm 2019	Bổ sung (tCO <sub>2</sub> ) văn phòng
Cường độ năng lượng tiêu thụ (kg-CO <sub>2</sub> /m <sup>2</sup> )	68.0	60.0	-	-	-	-	-	66.1
Cường độ tiêu thụ năng lượng (kg/m <sup>2</sup> )	1,400	1,300	-	-	-	-	-	1,349
Tổng diện tích sàn văn phòng kinh doanh (m <sup>2</sup> )	75,000	75,000	-	-	-	-	-	-

3. (Tham khảo) Ước tính lượng giảm đi trong trường hợp sử dụng điện có carbon thấp

Trường hợp năm 2015, văn phòng kinh doanh của quý vị đã mua điện có điện từ sự phát triển của điện có carbon thấp và lượng điện có carbon thấp đã được giảm đi so với mức tiêu thụ năng lượng tiêu chuẩn.

Hạng mục	Đơn vị	Tổng hợp của năm 2019
Lượng thải tiêu chuẩn (tCO <sub>2</sub> )	8,000	8,000
Tổng lượng điện mua (Nghìn kWh)	8,271	8,271
Hệ số điện có carbon thấp (tCO <sub>2</sub> /Nghìn kWh)	0.271	0.271
Lượng khí thải CO <sub>2</sub> giảm đi (tCO <sub>2</sub> )	437	437
Tỷ lệ giảm đi so với lượng thải tiêu chuẩn (%)	8.7	8.7

4. Bảng việc sử dụng điện có carbon thấp, văn phòng kinh doanh của quý vị có thể giảm được

**8.7%** so với năm tiêu chuẩn.

5. Phương pháp ước tính

6. Vị trí của văn phòng kinh doanh

7. Về cách sử dụng của văn phòng kinh doanh

8. Về cách sử dụng của văn phòng kinh doanh