Development of Low Carbon Industry for Supporting Greenhouse Gas Mitigation in Eastern Economic Corridor Project

Low carbon industry assessment questionnaire and the use of technology assessment form in factories in EEC area (Please fill out this form as accurately as possible).

1. Factory name

.....

2. Factory address

.....

3. Type of factory

○Chemical ○Base metal ○Wood ○Paper ○Gas
○Electricity ○Water utility ○Metal products, machinery and equipment
○Textiles ○Rock, gravel, soil and sand ○Non-metal
○Food, beverages and tobacco ○Others (Please specify) .....

4. Contact person / responsible person

4.1 Name-Surname.....
Tel.....
E-mail.....

4.2 Name-Surname.....
Tel.....
E-mail.....

4.3 Name-Surname.....
Tel.....
E-mail.....

Assessment criteria for low carbon industry to assess the readiness of the industrial sectorsingreenhouse gasmitigation actions

Category 1: Greenhouse gas management

1.1 The organization has a direct policy / working group / responsible person or workers for greenhouse gas mitigation.

1.1.1 The organization has set policies for greenhouse gas mitigation management.

- ☐ No
- ☐ Yes
  - ☐ Establish policies on greenhouse gas mitigation that is a part of other policies such as environmental or energy policy.
  - ☐ Establish a specific policy on greenhouse gas mitigation.

1.1.2 The organization has appointed a working group to oversee measures / projects related to greenhouse gas mitigation.

- ☐ No
- ☐ Yes

1.1.3 The organization has responsible person or workers to oversee measures / projects related to greenhouse gas mitigation.

- ☐ No
- ☐ Yes

1.2 The organization has supported the measures / projects to reduce greenhouse gas emissions
(You can select more than one answer.)

- ☐ No
- ☐ Yes
  - ☐ Having human resources support
  - ☐ Having budget support
  - ☐ Offering prizes or other incentives

1.3 The organization has set indicators and set targets for greenhouse gas mitigation.

1.3.1 The organization has set indicators for greenhouse gas mitigation.

- ☐ No (Skip to Category 2)
- ☐ Yes (You can select more than one answer.)
  - ☐ Qualitative indicators(Skip to Category 2)
  - ☐ Quantitative indicators

1.3.2 The organization has set a clear quantitative indicator for greenhouse gas mitigation from the specified indicators.

- ☐ No (Skip to Category 2)
- ☐ Yes

1.3.3 Having an ongoing target setting on greenhouse gas mitigation.
(You can select more than one answer.)

- ☐ Short-term target setting (1-3 years)
- ☐ Medium-term target setting (1-5 years)
- ☐ Long-term target setting (More than5 years)

Category 2: Risk and opportunity assessment related to climate change

2.1 The organization carries out risk and business opportunity assessment resulting from climate change effect. (You can select more than one answer.)

- ☐ No (Skip to question 2.3)
- ☐ Yes
  - ☐ Having risk and opportunity assessment
  - ☐ Having organization risk management
  - ☐ Establish business strategy of the organization from opportunity evaluation
  - ☐ Ongoing action

2.2 The organization has established plans / measures / projectsto reduce the impact of business risks caused by climate change(You can select more than one answer.)

- ☐ No
- ☐ Yes
  - ☐ Having plans and measures to reduce the impact of business risks
  - ☐ Measures / projects are implemented to reduce business risks
  - ☐ Development of ongoing work plans

2.3 The organization has followed up and evaluated the implementation of taken measures / projects to reduce the risk impact.(You can select more than one answer.)

- ☐ No
- ☐ Yes
  - ☐ Havingfollow-up and evaluation on specified measures and projects
  - ☐ Having result on some measures / projects that can reduce the business risk
  - ☐ Having result on all measures / projects that can reduce the business risk

2.4 The organization has developed goods or products in response to the impact of climate change.
(Such as the production of environmentally friendly goods or products, impact on climate change consideration or development of goods and products that can help in reducing global warming)

- ☐ No
- ☐ Yes

Category 3: Greenhouse gas report

3.1 The organization has actions on the assessment of the amount of greenhouse gas emissions.

- ☐ No (Skip to Category 4)
- ☐ Yes

3.1.1 What is the level of the amount of greenhouse gas emissions assessment of your organization?(You can select more than one answer.)

- ☐ Goods / product level that has assessment on unit per product, such as CFP and CFR
- ☐ Organization level that has annual assessment, such as CFO and TVETS
- ☐ Activity or project level that has baseline assessment and assessment on the reduction of greenhouse gas emissions, such as CDM and T-VER

3.1.2 Constantly carry out assessment on the amount of greenhouse gas emissions

- ☐ No
- ☐ Yes
  - ☐ Carry out 1-3 times
  - ☐ Carry out 4-5 times
  - ☐ Carry outmore than 5 times

3.2 Having comprehensive consideration of greenhouse gas emission activities resulting from outside organization activities.

- ☐ No consideration
- ☐ Having consideration of the amount of greenhouse gas emissions for business partners in particular.
- ☐ Having consideration of the amount of greenhouse gas emissions throughout the whole supply chain.
- ☐ Having comprehensive consideration of all related activities.

3.3 Already passed verification and certification of the assessment on the amount of greenhouse gas emissions. (You can select more than one answer.)

- ☐ Failed verification
- ☐ Pass verification from internal department in the organization
- ☐ Pass verification from external organization (Third Party)
- ☐ Already verified and certified

Category 4:Operation related to climate change

4.1 The organization uses the greenhouse gas emission data to make plans or develop greenhouse gas mitigation projects.(You can select more than one answer.)

- ☐ No (Skip to Category 5)
- ☐ Arranging certain plans.
- ☐ Development of greenhouse gas mitigation projects.

4.2 Over the past year, organization has carried out projects or activities that reduce the greenhouse gas emissions and are in accordance with the plan.

- ☐ No (Skip to Category 5)
- ☐ Yes
  - ☐ Result ofgreenhouse gas emissions reduction is lower than the indicated target.
  - ☐ Result of greenhouse gas emissions reduction meets the target.
  - ☐ Result of greenhouse gas emissions reduction is higher than the indicated target.

4.3 The amount of greenhouse gas reduction from projects and activities of organization has been verified and certified. (You can select more than one answer.)

- ☐ Failed verification
- ☐ Pass verification from internal department in the organization
- ☐ Pass verification from external organization (Third Party)
- ☐ Already verified and certified

4.4 The organization has guidelines for using carbon market or carbon pricing mechanisms* to run business.

- ☐ No
- ☐ Yes (Please specify mechanism.....)

* Carbon pricing mechanism is in addition an efficient tool to reduce greenhouse gas emissions such as carbon trading credits,greenhouse gas emission trading mechanism and carbon offset activities.

4.5 The organization hasgoods and services procurement, hiring business partners by using goods and services that help in reducing greenhouse gas emissions as part of the consideration.

- ☐ No
- ☐ Yes (Please specify the products /services .....)
  - ☐ Using greenhouse gas emissions as part of goods and services procurement consideration and/or part of business partners hiring **no more than 5 percent**
  - ☐ Using greenhouse gas emissions as part of goods and services procurement consideration and/or part of business partners hiring **higher than 5 percent but no more than 10 percent**
  - ☐ Using greenhouse gas emissions as part of goods and services procurement consideration and/or part of business partners hiring **more than 10 percent**

Category 5: Participation and communication related to climate change

5.1 The organization has communication, public relations and activities to create participation related to climate change within organization.(You can select more than one answer.)

- ☐ No
- ☐ Having communication, public relations and information.
- ☐ Having knowledge development activities or creating participation activities.
- ☐ Having actions on communication and activities covering all staff levels.

5.2 The organization has communication, public relations and activities to create participation related to climate change outside organization.

- ☐ No (Skip to question 5.3)
- ☐ Yes

5.2.1 The organization has different communication channels to spread information on greenhouse gas mitigation such as policy distribution or greenhouse gas emission reduction target to public.

- ☐ No
- ☐ Yes (Please specify communication channel .....)

5.2.2 The organization has support, assistance or activity creation and participation related to the reduction of greenhouse gas emissionsto external stakeholders such as partners, customers and communities.

- ☐ No
- ☐ Yes

5.2.3 The organization has suggestion and complaint channels and response channels for issues related to climate change.

- ☐ No
- ☐ Yes (Please specify channel .....)

5.3 Awards or standard certificates of organization related to climate change both domestically and internationally. (You can select more than one answer.)

- ☐ Green Industry(Please specify the level.....)
- ☐ Eco Factory
- ☐ CSR-DIW
- ☐ Cool Mode
- ☐ Low Emission Support Scheme (LESS)
- ☐ CDP Award
- ☐ DJSI Award
- ☐ ISO 14064
- ☐ ISO 14067
- ☐ ISO 26000
- ☐ Other awards or standards (please specify.....)

Category 6: Promotion of industrial greenhouse gas emission reduction for the purpose of policy recommendations

Instruction: Answering questionnaire in order of importance, whereby No. 1 is the issuethat needs to be promoted the most.

6.1 What issues would you like the government to promote greenhouse gas emission reduction? Please rank each of the following issues in order of importance.

_____Organization management policy

_____Legal

_____Technology

_____Financial

_____Human resource development

6.2 In order to make policy related to greenhouse gas emission reduction in the organization, what reasons would affect the organization management policy? Please rank the following issues in order of importence.

_____Government policies and laws

_____Knowledge and understanding of executive officer

_____Knowledge and understanding of employees in the organization

_____Others (Please specify).....

6.3 How important is the law enforcement for greenhouse gas emission control?

_____Very important

_____Moderately important

_____Less important

6.4 To reduce greenhouse gas emissions in the industrial sector,whattechnologies would you like the government to promote? Please rank the following issues in order of importance.

_____ Energy efficiency

_____Renewable energy

_____Waste management

_____Management in transportation sector

_____Forests and green spaces

_____Agriculture

_____Others (Please specify).....

6.5 What financial supports would you like the government to provide for greenhouse gas emission reduction? Please sort the following issues.

_____Tax incentives

_____Partial investment subsidies

_____Others (Please specify).....

6.6 What human resource development would you like the government to support for greenhouse gas emission reduction? Please sort the following issues.

_____Laws, environmental and energy policies of Thailand

_____Knowledge related to climate change

_____Assessment on greenhouse gas emissions

_____Reduction of greenhouse gas emissions

_____Others (Please specify).....

Category 7: Questionnaire for electrical and heat technologiesused in industrial factories in EEC area

Category 7.1 Thermal technologies in the organization: Boiler

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of fuel	Fuel consumption in average (Unit/year)
				Equipment capacity	Unit				

Ex.	1. Boiler	Germany	Fire tube	2	50	Ton/hr	7	8,000	LPG	633,510
					5		6	8,760		302,987

***Remark:Additional pages are allowable (if needed).**

Category 7.2 Thermal technologies in the organization:Kiln, furnace, oven and others

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of fuel	Fuel consumption in average (Unit/year)
				Equipment capacity	Unit				

Ex. Kiln	Germany		1	60	ton	5	4,992	LPG	73,510

***Remark:Additional pages are allowable (if needed).**

Category 7.3 Thermal technologies in the organization:Others (Please specify) .....

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of fuel	Fuel consumption in average (Unit/year)
				Equipment capacity	Unit				

*Remark:Additional pages are allowable (if needed).

Category 7.4 Electrical technologies in the organization:Cooling system

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of energy	Electric energy consumption in average (kWh/year)
				Equipment capacity	Unit				

Ex. Chiller	Japan	Cold water	2	16	ton	10	7,200	Electricity	80,000

***Remark:Additional pages are allowable (if needed).**

Category 7.5 Electrical technologies in the organization:Air conditioning system

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of energy	Electric energy consumption in average (kWh/year)
				Equipment capacity	Unit				

Ex. Air conditioning	Japan	Split Type	20	48,000	BTU	10	7,200	Electricity	80,000

***Remark:Additional pages are allowable (if needed).**

Category 7.6 Electrical technologies in the organization:Lighting system

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of energy	Electric energy consumption in average (kWh/year)
				Equipment capacity	Unit				

Ex. LED lamp	Thailand	-	620	20	Watt	1	3,744	Electricity	80,000

***Remark:Additional pages are allowable (if needed).**

Category 7.7 Electrical technologies in the organization:Motor

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of energy	Electric energy consumption in average (kWh/year)
				Equipment capacity	Unit				

Ex. Electric motor	U.S.A	-	10	20	kW	2	946	Electricity	95,369

*Remark:Additional pages are allowable (if needed).

Category 7.8 Electrical technologies in the organization:Others (Please specify) .....

Main machinery / equipment	Manufacturing country	Type	Quantity	Capacity		Lifetime (Year)	Average operating time per year (Hour/year)	Type of energy	Electric energy consumption in average (kWh/year)
				Equipment capacity	Unit				

*Remark:Additional pages are allowable (if needed).

Category 8: Problems and obstacles tohave access to modern technologiesin your organization. (Please sort in order 1 - 3)

..... Insufficient budget

..... Staffs do not have sufficient technical knowledge

..... Executive officer gives priority to other issues

..... Organization has limited area

..... Having legally binding restrictions

..... Already used the best technology

..... Others (Please specify) .....