JOINT CREDITING MECHANISM AND SUSTAINABLE DEVELOPMENT GOALS LINKAGE GUIDANCE

Ministry of the Environment

IGES
Institute for Global Environmental Strategies

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1. Introduction

The Sustainable Development Goals (SDGs) depict a universal blueprint for sustainable society and to achieve the goals, all stakeholders, including government, civil society and the private sector, are expected to strengthen and accelerate initiatives. In current era of globalisation, there has been increasing integration of business strategy and the SDGs, and private companies have been strengthening the sustainability of business by contributing to the SDGs.

The Joint Crediting Mechanism (JCM) is attracting attention as a potential tool for the private sector that can support a company's efforts to achieve the SDGs. Participating in the JCM can integrate business development and sustainability actions, as well as provide further alternative options for contributing to the SDGs.

The Ministry of the Environment, Japan (MOEJ) and the Institute for Global Environmental Strategies (IGES) have analysed the interlinkage between the JCM and SDGs, publishing reports and presenting them nationally as well as internationally. The first report, "Joint Crediting Mechanism contributions to Sustainable Development Goals[1]", was published in March 2020 and examined the interlinkage between JCM projects and the 17 SDGs and their 169 targets. The results showed that the JCM is linked not only to environment and energy-related goals but also linked to the social dimensions of the SDGs, namely training for capacity building, improvements in hygiene, and an enhanced work environment.

In this second part of the report, "JCM-SDGs linkage guidance", we have updated existing indicators and developed new qualitative and quantitative indicators for the JCM projects. Based on these indicators we have analysed new types of JCM projects such as waste-to-energy projects and transportation-related projects.

This guidance can be utilized to identify and analyse how the JCM projects contribute to achieving the SDGs. Measuring own JCM projects would support a company's internal communication and decision-making towards integration of the SDGs and business strategy. Furthermore, the JCM can be a strategic tool for building new business strategy centred on the SDGs concept.

[1] Joint Crediting Mechanism contributions to Sustainable Development Goals https://www.iges.or.jp/en/pub/joint-crediting-mechanism-jcm-contributions-sustainable-development-goals-sdgs/en

2. Indicator development and project analysis methodology

The 232 indicators of the SDGs developed by the United Nations (UN) are used to measure progress worldwide, not for business activities. In light of this, except for Goal 5 indicators, we have developed qualitative and quantitative indicators by utilising the "Business Reporting on the SDGs: An Analysis of Goals and Targets[2]" report published by the Global Reporting Initiative (GRI) and United Nations Global Compact (UNGC) as a reference. Quantitative indicators are used to evaluate the JCM project progress towards SDGs achievement in quantitative data. On the other hand, qualitative indicators of the JCM are used to qualitatively analyse the JCM scheme and individual project contributions to the SDGs and their targets. We developed these indicators because some of the SDGs targets and contributions are difficult to quantify. "An Analysis of Goals and Targets" report is for the private sector to evaluate a company's business contribution to the SDGs and their targets by using different types of indicators. JCM projects are mainly developed by the private sector, so it is important to utilise indicators that take the business sector into consideration.

Goal 5 (Gender equality) indicators of the JCM projects were developed for the first time and we used the same report "Business Reporting on the SDGs: An Analysis of Goals and Targets[2]" as well as the "Leveraging co-benefit between gender equality and climate action for sustainable development[3]" report by UN Women. This report aims to help project participants and relevant stakeholders integrate gender equality in climate actions and leverage development of co-benefits between gender equality and climate actions for sustainable development.

For the JCM data, we utilised the IGES JCM database[4], which describes project technologies, product types, and country basis. We also assessed the project design document (PDD) for each JCM project, including methodology, emission reductions, and monitoring reports. The following table shows the JCM project types that have been analysed in this guidance, including an explanation for each one.

Table 1. Types of JCM projects

Types of project	Explanation
RE projects	Renewable energy (RE) projects include solar photovoltaic (PV) power generation in factories and farms, and rooftop solar PV power generation in school buildings, commercial facilities and shopping malls.
EE projects	Energy efficiency (EE) projects aim to introduce advanced low-carbon and zero emission technologies and equipment such as high-efficiency refrigerator systems, gas co-generation, and chillers and compressors in factories. This category also includes energy efficiency technologies in public and energy infrastructure.
Agriculture related projects	These projects are mainly solar PV power generation in the agriculture sector.
EE projects in factories	Energy efficiency (EE) projects include advanced low-carbon technologies and equipment installed in the manufacturing sector. This category also includes energy efficiency technologies in water infrastructure.

[2] Business Reporting on the SDGs: An Analysis of Goals and Targets https://www.unglobalcompact.org/library/5361
[3] Leveraging co-benefit between gender equality and climate action for sustainable development https://unfccc.int/files/gender_and_climate_change/application/pdf/leveraging_cobenefits.pdf
[4] JCM database：https://www.iges.or.jp/p/pub/iges-joint-crediting-mechanism-jcm-database/en

Waste recycling related projects	Waste recycling related projects are energy efficiency technologies introduced in recycling waste treatment factories.
Transportation-related projects	Transportation related projects aim to improve fuel efficiency; and introduce road lights and traffic signal equipment in the transportation sector.
Energy transmission projects	Energy transmission projects cover high efficiency transmission and distribution system introduction in the energy infrastructure sector.
Water utility related projects	Water utility related projects are advanced low-carbon technology and equipment installed in the water infrastructure sector.
Disaster related projects	Disaster related projects are climate-resilient technologies introduced when developing projects.
Waste-to-energy projects	Waste-to-energy projects aim to generate electricity by utilising solid waste.
JCM scheme	JCM scheme includes JCM project development, technical training and seminars, JCM financial support, and issued JCM credits, which are all actions and progress implemented under the JCM.

3. How to use this guidance

This JCM-SDGs linkage guidance deepens the understanding of interlinkages between the JCM and SDGs. It also presents potential JCM project implementation for the business sector whereby companies can contribute towards achieving the SDGs through the JCM scheme. The guidance provides the following information in a tabular format:

- JCM project contributions to SDGs and their targets
- JCM-specific qualitative and quantitative indicators
- Type of projects linked to the indicators and SDG targets
- Examples of JCM projects analysed by these indicators

Usage of the indicators for all SDGs (except for Goal 5)

Each target of the SDGs is linked to the JCM specific indicators that can be used as criteria for whether a JCM project contributes to the SDGs or not. For example, if the JCM project introduces low-carbon or renewable energy technologies in the agriculture sector, it would contribute to Target 2.a which is to build sustainable food production systems while reducing greenhouse gas (GHG) emissions (Table 2). Similarly, if a company develops a JCM project in a water treatment area that can minimise negative impacts on water quality, the project could eventually contribute to Target 6.3, improving water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials. For the quantitative indicators, the units are in the same cell as the indicators. By monitoring renewable energy generated electricity (MWh) JCM project's progress towards achieving Target 7.2 can be measured.

Table 2. JCM and SDGs linkage (for Goal 5, see Table 5) (excerpt)

Goals and Targets		JCM indicators	Types of project	Examples
2.a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	Investing in sustainable agriculture by low carbon and renewable energy technologies	Agriculture related projects	Installation of 12.7 MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Minimizing negative impact on water quality through the project	Water utility related projects	Introduction of High Efficiency Water Pumps in Da Nang City
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Amount of RE generated electricity (Unit: MWh)	RE projects	Solar Power on Rooftop of School Building Project

Usage of the indicators for Goal 5

Goal 5, Gender equality, indicators have the following two main purposes:

- Encouraging JCM participating companies to take action using Goal 5 indicators as a reference
- If JCM participating companies take action based on these indicators, it means that the companies can contribute towards Goal 5, through business actions and implementing projects

The JCM-specific indicators are classified into two types: company-related indicators and project-related indicators. In the company-related indicators, we have utilised the Women's Empowerment Principles[5] (WEPs) established by UN Global Compact and UN Women. This is defined as "a set of Principles offering guidance to business on how to promote gender equality and women's empowerment in the workplace, marketplace and community.[6]" By joining the WEPs community, the CEO signs a commitment to this agenda and works collaboratively in multi-stakeholder networks to foster business practices that empower women. For the project-related indicators, we have developed JCM-specific qualitative and quantitative indicators which show what kind of actions need to be taken in order to contribute towards Goal 5, Gender equality, through the JCM project implementation (Table 3). For instance, the results from the gender analysis for the project area and sector can be integrated into project planning and development which contributes to Target 5.5, ensuring women's effective participation in decision-making and opportunities for leadership at all levels.

Table 3. JCM and Goal 5 linkage (excerpt)

Goals and Targets		JCM indicators	Types of activity
5.1	End all forms of discrimination against all women and girls everywhere	Sign to Women's Empowerment Principles (WEPs)	Company related activities
5.5	Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Planning and developing a project based on gender analysis	Project related activities

[5] Women's Empowerment Principles https://www.weps.org/
[6] UN Women Japan office https://japan.unwomen.org/ja/news-and-events/in-focus/weps

4. Finding relevant projects by SDG Targets

Table 4. JCM and SDGs linkage (for Goal 5, see Table 5)

Goals and Targets		JCM indicators	Types of project	Examples
Goal 2				
2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Taking actions to mitigate climate change impacts and to reduce greenhouse gasses	Agriculture related projects	Installation of 12.7 MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb
		Increasing the proportion of sustainably produced goods and services	Agriculture related projects	Installation of 12.7 MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb
		Raising the awareness of employees on sustainable food consumption	Agriculture related projects	Introduction of Solar PV System at Salt Factory
2.a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	Investing in sustainable agriculture by low carbon and renewable energy technologies	Agriculture related projects	Installation of 12.7 MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb
Goal 3				
3.6	By 2020, halve the number of global deaths and injuries from road traffic accidents	Improving safety of road transportation by introducing energy efficiency technology	Transportation related projects	Eco-Driving by Utilizing Digital Tachograph System
3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	CO_2 emission reduction (Unit: tCO_2 eq)	RE projects and Transportation related projects	10MW Solar Power Project in Darkhan City

		Using environmentally sound technologies (EST)	RE projects, Transportation related projects, and Waste-to-energy projects	10MW Solar Power Project in Darkhan City
Goal 4				
4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	Hours of training that relevant stakeholders have undertaken (Unit: Hours)	JCM scheme	All types of JCM projects
		Offering technical and vocational guidance and training program to employees	RE projects, EE projects , and Waste-to-energy projects	Introduction of Solar PV System at shopping mall in Ho Chi Minh
Goal 6				
6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Increasing water service coverage in the area	Water utility related projects	Introduction of High Efficiency Water Pumps in Da Nang City
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Increasing volume of water that treated by the project	Water utility related projects	Introduction of High Efficiency Water Pumps in Da Nang City
		Minimizing negative impact on water quality through the project	Water utility related projects	Introduction of High Efficiency Water Pumps in Da Nang City
		Engaging in sound management of waste and reducing its hazardous potential	Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste

6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Improving water performance and efficiency	Water utility related projects	Introduction of High Efficiency Water Pumps in Da Nang City
Goal 7				
7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Investing in clean energy technologies	RE projects and Energy transmission projects	Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Amount of RE generated electricity (Unit: MWh)	RE projects	Solar Power on Rooftop of School Building Project
		Investing in and promoting initiatives on renewable energy	RE projects	Solar Power on Rooftop of School Building Project
		Investing in and promoting initiatives on waste to energy	Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste
7.3	By 2030, double the global rate of improvement in energy efficiency	Number of adopted energy efficiency and waste to energy projects (Unit: Numbers)	EE projects and Waste-to-energy projects	Installation of Energy Saving Equipment in Lens Factory
		Reducing energy consumption	EE projects and Waste-to-energy projects	Installation of Energy Saving Equipment in Lens Factory

7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	Participating international cooperation to introduce renewable energy, low-carbon technology and waste management technology	RE projects, EE projects, and Waste-to-energy projects	Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory
7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	Expanding business in energy infrastructure sector in developing countries	RE projects and Energy transmission projects	Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids
Goal 8				
8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Helping to upgrade technology in factories in developing countries	EE projects in factories	Installation of High Efficiency Loom at Weaving Factory
Goal 9				
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Taking precautionary measures to reduce environment impacts when developing and retrofitting infrastructure	RE projects, Energy transmission projects, Water utility related projects, Waste-to-energy projects	Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound	CO_2 emission reduction (Unit: tCO_2 eq)	RE projects, EE projects, and Waste-to-energy projects	Reducing GHG emission at Textile Factory by Upgrading to Air-saving Loom

	technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Issued credits based on tracking and reporting the amount of GHG emission reductions (tonnes)	RE projects, EE projects, and Waste-to-energy projects	Reducing GHG emission at Textile Factory by Upgrading to Air-saving Loom
		Upgrading infrastructure and retrofitting industries through investment in infrastructure development	RE projects, Energy transmission projects, Water utility related projects, and Waste-to-energy projects	Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids
9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	Supporting sustainable infrastructure development in developing countries (with financial and technical support)	RE projects, Energy transmission projects, Water utility related projects, and Waste-to-energy projects	Small scale solar power plants for commercial facilities in island states
Goal 11				
11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Investing sustainable transport systems and road safety equipment	Transportation related projects	Eco-Driving by Utilizing Digital Tachograph System
11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Communicating with communities and different stakeholders when engaging urban development	Transportation related projects	Introduction of High Efficiency LED Lighting Utilizing Wireless Network
		Providing sustainable solutions and service in support of urban development	Transportation related projects	Introduction of High Efficiency LED Lighting Utilizing Wireless Network

11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	CO_2 emission reductions (Unit: tCO_2 eq)	Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste
		Reducing environmental impacts by improving air quality	RE projects	10MW Solar Power Project in Darkhan City
		Reducing environmental impacts by improving waste management	Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste
Goal 12				
12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Using or supplying RE generated electricity	RE projects	Introduction of Solar PV System at Salt Factory
		Using environmentally sound technologies (EST)	RE projects, and EE projects	Introduction of Solar PV System at Salt Factory
		Reducing energy consumption	EE projects and Waste-to-energy projects	Introduction of High Efficiency Electrolyzer in Chlor-Alkali Production Plant
		Recycling materials	Waste recycling related projects and Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through

				combustion of municipal solid waste
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	CO_2 emission reduction (Unit: tCO_2 eq)	RE projects, Transportation related projects, Waste recycling related projects, Water utility related projects, Waste-to-energy projects	Reduction of Energy Consumption by Introducing an Energy-Efficient Waste Paper Processing System into a Packaging Paper Factory
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)	RE projects, Transportation related projects, Waste recycling related projects, Water utility related projects, Waste-to-energy projects	Reduction of Energy Consumption by Introducing an Energy-Efficient Waste Paper Processing System into a Packaging Paper Factory
12.5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Recycling waste	Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste
12.7	Promote public procurement practices that are sustainable, in accordance with national policies and priorities	Working with governments to improve sustainable principles in the public procurement directives	Energy transmission projects (only in Vietnam)	Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids

12.a	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	Supporting developing countries to increase their capacity to transfer into sustainable production and consumption	RE projects, EE projects, and Waste-to-energy projects	Reduction of Energy Consumption by Introducing an Energy-Efficient Waste Paper Processing System into a Packaging Paper Factory
Goal 13				
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	CO_2 emission reduction (Unit: tCO_2 eq)	RE projects	Introduction of Solar PV System at Salt Factory
		Helping developing countries to introduce climate mitigation and adaptation technologies	Agriculture related projects	Installation of 12.7MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb
		Improving resilience by introducing climate change resilient technologies	Disaster related projects	Small scale solar power plants for commercial facilities in island states
13.2	Integrate climate change measures into national policies, strategies and planning	Collaborating with governments on ambitious policy solutions for climate change and scaling up climate actions	JCM scheme	All types of JCM projects
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Number of the JCM partner countries (Unit: Number of countries)	JCM scheme	All types of JCM projects
		Raising the awareness of employees on climate change	RE projects, EE projects, and Waste-to-energy projects	Rooftop Solar Power System to Large Supermarkets
		Collaborating with public and/or private actors to promote knowledge networks in climate change	JCM scheme	All types of JCM projects

13.a	Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	The amount of financial support on environmentally sound technologies (EST) (Unit: JPY)	JCM scheme	All types of JCM projects
Goal 14				
14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Taking responsibility for waste management to contribute to marine pollution reduction	Waste-to-energy projects	Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste
Goal 17				
17.3	[Finance] Mobilize additional financial resources for developing countries from multiple sources	Mobilizing private capital towards supporting sustainable development in developing countries	JCM scheme	All types of JCM projects
17.6	[Technology] Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	Number of financing projects (Unit: Numbers)	RE projects, EE projects, and Waste-to-energy projects	Installation of gas engine cogeneration system to supply electricity and heat to the vehicle manufacturing factory

17.7	[Technology] Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	Number of financing projects (Numbers)	RE projects, EE projects, and Waste-to-energy projects	Solar PV Power Plant Project in Jakabaring Sport City
17.9	[Capacity-building] Enhance international support for implementing effective and targeted capacity- building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation	Strengthening local business in partner countries through direct investment and providing in-house capacity	JCM scheme	All types of JCM projects
		Engaging in the dialogue between governments and other private sector actors to share technology and expertise	JCM scheme	All types of JCM projects
17.14	[Systemic issues] [Policy and institutional coherence] Enhance policy coherence for sustainable development	Supporting sustainable development policies through working together with other stakeholders	JCM scheme	All types of JCM projects
17.15	[Systemic issues] [Policy and institutional coherence] Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	Working together with partner country's government (JCM Secretariat) and following the guideline made by Joint Committee meetings	JCM scheme	All types of JCM projects
17.16	[Systemic issues] [Multi-stakeholder partnerships] Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and	Supporting joint development projects with governments, civil society and international organization	JCM scheme	All types of JCM projects

	financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	Participating in international cooperative mechanisms with different stakeholders to diffuse environmentally sound technologies (EST)	JCM scheme	All types of JCM projects
17.17	[Systemic issues] [Multi-stakeholder partnerships] Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Providing the full depth of resources, expertise and technological innovation to different stakeholders	JCM scheme	All types of JCM projects

Table 5. JCM and Goal 5 linkage

Goals and Targets		**JCM indicators**	**Types of activity**
5.1	End all forms of discrimination against all women and girls everywhere	Average hours of training that the employees have undertaken throughout all project cycle, by Gender (Unit: Hours)	Project related activities
		Sign to Women's Empowerment Principles (WEPs)	Company related activities
		Increasing number of women and men with increased employment income due to the project	Project related activities
		Ensuring women participations in decision making of all project cycle	Project related activities
5.2	Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	Supporting the rights of vulnerable groups, including women and girls through projects	Project related activities
		Sign to Women's Empowerment Principles (WEPs)	Company related activities
		Ensuring that suppliers follow country's and/or community's regulation focusing on the rights of women and girls	Company and Project related activities

5.4	Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	Sign to Women's Empowerment Principles (WEPs)	Company related activities
5.5	Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Representation of women in management positions in the project (Unit: Number or %)	Project related activities
		Sign to Women's Empowerment Principles (WEPs)	Company related activities
		Planning and developing a project based on gender analysis	Project related activities
5.6	Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	Sign to Women's Empowerment Principles (WEPs)	Company related activities
5.b	Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	Providing opportunities for women to learn the use of enabling technology through the project to promote the empowerment of women	Project related activities
		Promoting rural women's empowerment through electrification of RE projects	Project related activities
5.c	Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Adopting the JCM gender guidelines and internal auditing of project operation under the guidelines (in all project cycle).	Project related activities

5. Finding relevant SDG Targets by project types

Here, the goals and targets to which the JCM can contribute are summarised based on the project types. An explanation for each JCM project type is stated in Table 1. Based on introduced technology through the JCM and its relevant sector, the project types can be categorised as in Table 6. The goals and targets that the JCM contributes are different depending on the installed technologies and sectors. Therefore, Table 6 can be utilised to identify the project types; clicking on each section link will show the linkages between the goals and each JCM project type, as seen in Table 7. For instance, if the project is to install energy efficiency (EE) technology in the water utility sector as shown in Table 6, the related project types are "EE projects", "Water utility related projects", and "JCM scheme". The goals and targets associated with these three project types are all linked to the project introducing EE technology in the water utility sector.

Table 6. Installed technologies under the JCM and its sector

		Introduced technology through the JCM		
		Renewable energy (RE)	**Energy efficiency (EE)**	**Waste to energy**
Sector	**Water utility sector**	RE projects Water utility related projects JCM scheme	EE projects Water utility related projects JCM scheme	
	Agriculture sector	RE projects Agriculture related projects JCM scheme	EE projects Agriculture related projects JCM scheme	
	Manufacturing sector	RE projects JCM scheme	EE projects EE projects in factories JCM scheme	
	Waste recycling	RE projects Waste recycling related projects JCM scheme	EE projects Waste recycling related projects JCM scheme	
	Transportation	RE projects Transportation related projects JCM scheme	EE projects Transportation related projects JCM scheme	
	Energy transmission		EE projects Energy transmission projects JCM scheme	
	Disaster	RE projects Disaster related projects JCM scheme	EE projects Disaster related projects JCM scheme	

	Other	RE projects JCM scheme	EE projects JCM scheme	Waste to energy projects JCM scheme

(The projects are in the grey highlighted cells have not been developed as JCM projects, but it can be utilized as a reference for JCM project planning and development)

Table 7. Contributions to the SDGs based on project types

RE projects 10MW Solar Power Project in Darkhan City		
Goals and Targets		**JCM indicators**
3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	CO_2 emission reduction (Unit: tCO_2 eq)
		Using environmentally sound technologies (EST)
4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	Offering technical and vocational guidance and training program to employees
7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Investing in clean energy technologies
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Amount of RE generated electricity (Unit: MWh)
		Investing in and promoting initiatives on renewable energy
7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	Participating international cooperation to introduce renewable energy, low-carbon technology and waste management technology
7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	Expanding business in energy infrastructure sector in developing countries
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Taking precautionary measures to reduce environment impacts when developing and retrofitting infrastructure

9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
		Upgrading infrastructure and retrofitting industries through investment in infrastructure development
9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	Supporting sustainable infrastructure development in developing countries (with financial and technical support)
11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Reducing environmental impacts by improving air quality
12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Using or supplying RE generated electricity
		Using environmentally sound technologies (EST)
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
12.a	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	Supporting developing countries to increase their capacity to transfer into sustainable production and consumption
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	CO_2 emission reduction (Unit: tCO_2 eq)
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Raising the awareness of employees on climate change

17.6	[Technology] Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	Number of financing projects (Unit: Numbers)
17.7	[Technology] Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	Number of financing projects (Unit: Numbers)
EE projects Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory		
4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	Offering technical and vocational guidance and training program to employees
7.3	By 2030, double the global rate of improvement in energy efficiency	Number of adopted energy efficiency and waste to energy projects (Unit: Numbers)
		Reducing energy consumption
7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	Participating international cooperation to introduce renewable energy, low-carbon technology and waste management technology
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Using environmentally sound technologies (EST)

		Reducing energy consumption
12.a	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	Supporting developing countries to increase their capacity to transfer into sustainable production and consumption
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Raising the awareness of employees on climate change
17.6	[Technology] Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	Number of financing projects (Unit: Numbers)
17.7	[Technology] Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	Number of financing projects (Unit: Numbers)
Agriculture related projects Introduction of Solar PV System at Salt Factory Installation of 12.7MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb		
2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Taking actions to mitigate climate change impacts and to reduce greenhouse gasses
		Increasing the proportion of sustainably produced goods and services
		Raising the awareness of employees on sustainable food consumption
2.a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	Investing in sustainable agriculture by low carbon and renewable energy technologies

13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	Helping developing countries to introduce climate mitigation and adaptation technologies
EE projects in factories Installation of High Efficiency Loom at Weaving Factory		
8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Helping to upgrade technology in factories in developing countries
Waste recycling related projects Reduction of Energy Consumption by Introducing an Energy-Efficient Waste Paper Processing System into a Packaging Paper Factory		
8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Helping to upgrade technology in factories in developing countries
12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Recycling materials
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
Transportation related projects Eco-Driving by Utilizing Digital Tachograph System Introduction of High Efficiency LED Lighting Utilizing Wireless Network		
3.6	By 2020, halve the number of global deaths and injuries from road traffic accidents	Improving safety of road transportation by introducing energy efficiency technology
3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	CO_2 emission reduction (Unit: tCO_2 eq)
		Using environmentally sound technologies (EST)
11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Investing sustainable transport systems and road safety equipment

11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Communicating with communities and different stakeholders when engaging urban development
		Providing sustainable solutions and service in support of urban development
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
Energy transmission projects Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids		
7.1	By 2030, ensure universal access to affordable, reliable and modern energy services	Investing in clean energy technologies
7.b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	Expanding business in energy infrastructure sector in developing countries
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Taking precautionary measures to reduce environment impacts when developing and retrofitting infrastructure
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Upgrading infrastructure and retrofitting industries through investment in infrastructure development
9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	Supporting sustainable infrastructure development in developing countries (with financial and technical support)

12.7	Promote public procurement practices that are sustainable, in accordance with national policies and priorities	Working with governments to improve sustainable principles in the public procurement directives
Water utility related projects Introduction of High Efficiency Water Pumps in Da Nang City		
6.1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Increasing water service coverage in the area
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Increasing volume of water that treated by the project
		Minimizing negative impact on water quality through the project
6.4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Improving water performance and efficiency
8.2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	Helping to upgrade technology in factories in developing countries
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Taking precautionary measures to reduce environment impacts when developing and retrofitting infrastructure
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Upgrading infrastructure and retrofitting industries through investment in infrastructure development
9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	Supporting sustainable infrastructure development in developing countries (with financial and technical support)
Disaster related projects Small scale solar power plants for commercial facilities in island states		
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	Improving resilience by introducing climate change resilient technologies

Waste-to-energy projects Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste		
3.9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Using environmentally sound technologies (EST)
4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	Offering technical and vocational guidance and training program to employees
6.3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Engaging in sound management of waste and reducing its hazardous potential
7.2	By 2030, increase substantially the share of renewable energy in the global energy mix	Investing in and promoting initiatives on waste to energy
7.3	By 2030, double the global rate of improvement in energy efficiency	Number of adopted energy efficiency and waste to energy projects (Unit: Numbers)
		Reducing energy consumption
7.a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	Participating international cooperation to introduce renewable energy, low-carbon technology and waste management technology
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Taking precautionary measures to reduce environment impacts when developing and retrofitting infrastructure
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
		Upgrading infrastructure and retrofitting industries through investment in infrastructure development

9.a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	Supporting sustainable infrastructure development in developing countries (with financial and technical support)
11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	CO_2 emission reductions (Unit: tCO_2 eq)
		Reducing environmental impacts by improving waste management
12.2	By 2030, achieve the sustainable management and efficient use of natural resources	Reducing energy consumption
		Recycling materials
12.4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	CO_2 emission reduction (Unit: tCO_2 eq)
		Issued credits based on tracking and reporting the amount of GHG emission reductions (Unit: tonnes)
12.5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Recycling waste
12.a	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	Supporting developing countries to increase their capacity to transfer into sustainable production and consumption
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Raising the awareness of employees on climate change
14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	Taking responsibility for waste management to contribute to marine pollution reduction
17.6	[Technology] Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	Number of financing projects (Unit: Numbers)

17.7	[Technology] Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	Number of financing projects (Unit: Numbers)
JCM scheme		
4.4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	Hours of training that relevant stakeholders have undertaken (Unit: Hours)
13.2	Integrate climate change measures into national policies, strategies and planning	Collaborating with governments on ambitious policy solutions for climate change and scaling up climate actions
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Number of JCM partner countries (Unit: Number of countries)
		Collaborating with public and/or private actors to promote knowledge networks in climate change
13.a	Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	The amount of financial support on environmentally sound technologies (EST) (Unit: JPY)
17.3	[Finance] Mobilize additional financial resources for developing countries from multiple sources	Mobilizing private capital towards supporting sustainable development in developing countries
17.9	[Capacity-building] Enhance international support for implementing effective and targeted capacity- building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation	Strengthening local business in partner countries through direct investment and providing in-house capacity
		Engaging in the dialogue between governments and other private sector actors to share technology and expertise

17.14	[Systemic issues] [Policy and institutional coherence] Enhance policy coherence for sustainable development	Supporting sustainable development policies through working together with other stakeholders
17.15	[Systemic issues] [Policy and institutional coherence] Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	Working together with partner country's government (JCM Secretariat) and following the guideline made by Joint Committee meetings
17.16	[Systemic issues] [Multi-stakeholder partnerships] Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	Supporting joint development projects with governments, civil society and international organization
		Participating in international cooperative mechanisms with different stakeholders to diffuse environmentally sound technologies (EST)
17.17	[Systemic issues] [Multi-stakeholder partnerships] Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	Providing the full depth of resources, expertise and technological innovation to different stakeholders

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