

# Clean Development Mechanism

## Sustainable Development co-Benefits Description Report<sup>1</sup>

CDM project activity or programme of activities (PoA) information	
<b>Title</b>	Clean Energy Program Supported by Republic of Korea
<b>Pre-registration reference no.</b>	
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<b>Type</b>	Programmes of Activities
<b>Sectoral Scope</b>	Energy demand (3)
<b>Host Party</b>	Myanmar

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# Overview of sustainable development co-Benefits

## A. The extent of environmental co-Benefits:

		N/A	No	Slightly	Partly	Highly
Air	Reducing Sox		•			
	Reducing Nox		•			
	Reducing Fly ash		•			
	Reducing suspended particulate matter (SPM)					•
	Reducing Non Methane Volatile Organic Compounds (NMVOCs)		•			
	Reducing Noise Pollution		•			
	Reducing Odors			•		
	Reducing Dust				•	
	Other air quality improvements				•	
Land	Preventing end of life products/equipment (solid waste)		•			
	Producing/using compost		•			
	Producing/using manure, mineral fertilizer or other soil nutrients		•			
	Irrigation		•			
	Preventing soil erosion		•			
	Minimum tillage		•			
	Other means to improve land quality		•			
Water	Improving management/control of wastewater		•			
	Saving/conserving of water		•			
	Improving reliability/accessibility of water supply		•			
	Purification/cleaner water supply		•			
	Improving ecological state of water bodies		•			
	Other means to improve water		•			
Natural Resources	Protecting mineral resources		•			
	Protecting/enhancing plant life			•		
	Protecting/enhancing species diversity			•		
	Protecting/enhancing forests				•	
	Protecting/enhancing other depletable natural resources		•			

## B. The extent of social co-Benefits:

		N/A	No	Slightly	Partly	Highly
Jobs	New long-term jobs		•			
	New short-term jobs		•			
	New sources of income generation		•			
	Other employment opportunities		•			
Health & Safety	Disease prevention		•			
	Reducing accidents		•			
	Reducing crime		•			
	Preserving food		•			



Education	Reducing health damaging indoor air pollution					•
	Enhancing health services		•			
	Improving sanitation and waste management		•			
	Other health and safety improvement		•			
	Job-related training	•				
	Enhanced educational services	•				
	Project-related knowledge dissemination	•				
	Other educational benefits	•				
	Improving working conditions	•				
	Community or rural advancement			•		
	Poverty alleviation (more people above poverty level)				•	
	Improving wealth distribution/ generation of income and assets				•	
	Increased municipal revenues	•				
Welfare	Optimized women's empowerment					•
	Reduced traffic congestion	•				
	Other welfare benefits	•				

### **C. The extent of economic co-Benefits:**

		N/A	No	Slightly	Partly	Highly
Growth	New investments		•			
	New industrial/commercial activities		•			
	New infrastructure		•			
	Enhancement of productivity		•			
	Reduction of production costs (services)		•			
	New business opportunities		•			
	Other economic benefits		•			
Energy	Improvement in supply of energy	•				
	Access to energy	•				
	Affordability and/or reliability of energy	•				
	Other energy improvements	•				
Technology	Introducing/developing/diffusing imported technology	•				
	Introducing/developing/diffusing local technology	•				
	Adaptation of new technologies to local circumstances	•				
	Know-how activities for a technology	•				
	Other technological benefits	•				
Balance of payments	Reduction of foreign dependency	•				
	Other macro-economic benefits	•				



**D. Further information:**

	Information required			
		Yes	No	N/A
		•		



## Detailed description

### A. Environmental co-Benefits

	Indicator	Specification	Extent
Air	The CDM improves air quality by reducing air pollutants as follows:		
	SOx		No
	NOx		No
	Fly ash emissions		No
	SPM	<i>Among air pollution pollutants, black carbon is a component of fine particulate matter (PM <math>\leq 2.5 \mu\text{m}</math> in aerodynamic diameter) which WHO air quality guidelines highlight to reduce its exposure to PM2.5. However, biomass combustion generates thousands of health-damaging substances, increasing health risk particularly in poor low-income households. ECOEYE stoves can reduce indoor air pollution by up to 80%(PM and black carbon, VOCs, CO, NOx, PAHS, etc.), compared with traditional cooking methods. According to laboratory testing results of the indoor emission samples from three ECOEYE stoves of PM2.5 accounted for 27.8mg/min while CO2 average level valued 0.22g/min. The result reveals that the use of ECOEYE stoves significantly reduces PM 2.5.</i>	Highly
	NMVOCs		No
	Noise		No
	Odors	<i>ECOEYE stoves users commonly express full satisfaction in the reduction of the smoke.</i>	Slightly
	Dust	<i>Indoor air pollution is usually caused by dust when biomass combusts. ECOEYE stoves reduce indoor emission by 80%, in other words, the stove users can stay safe in their kitchen.</i>	Partly
	Other air quality improvements	<i>ECOEYE stoves improve air quality by reducing HAP(Household Air Pollution) which contains CO, Black carbon, VOCs, CO, NOx, PAHS, etc.</i>	Partly
Natural Resources	The CDM protects or enhance depletable natural resources as follows:		
	Mineral resources		No
	Plant life	<i>ECOEYE stoves can save non-renewable biomass up to 2 tonnes per year. They enable the use of small abandoned wood fuel with no need to destruct plantation.</i>	Slightly
	Species diversity	<i>Deforestation and Degradation of forestry issues always go along with the loss of species as their habitat disappears. ECOEYE stoves reduce the use of fuelwood which contributes to afforestation and biodiversity.</i>	Slightly
	Forests	<i>Collection of fuelwood is a major driving force on high deforestation and degradation of soil. For example, the delta of Ayeyarwaddy division used to be the fortress of Mangroves is now devastated. In Myanmar, traditional cooking fuel strongly links with deforestation issue, as 84% of the total population use solid biomass, and 88% is non-renewable according to the calculation. The poor</i>	Partly



		<i>thermal efficiency of traditional cooking methods leads to high consumption of fuelwood. ECOEYE stoves increase thermal efficiency by 300% and reduce the annual consumption of fuelwood per household by up to 72%.</i>	
	Other depletable natural resources		No

## **B. Social co-Benefits**

	Indicator	Specification	Extent
Health & safety	The CDM results in health and safety improvements as follows:		
	Reduction of diseases, disease prevention		No
	Reduction of accidents		No
	Reduction of crime		No
	Preservation of food		No
	Reducing health damaging indoor air pollution	<i>In Myanmar, every year 48,000 people die from respiratory diseases, while 3,500 of them are children. ECOEYE stoves prevent the smoke and protect vulnerable groups in society, including “women, children and the elderly”. ECOEYE stove has a high combustion efficiency enough to combust most of the flue gas and generate no smoke. Thus, the use of ECOEYE stoves will reduce the number of deaths and make a safe environment for the locals.</i>	Highly
	Enhancement of health services		No
	Improved sanitation and waste management		No
	Other health and safety improvements		No
Welfare	The CDM improves local living and working conditions as follows:		
	Improvement of working conditions		N/A
	Community or rural upliftment	<i>ECOEYE stoves promote women's rights in the community. Enlargement of women's role will relieve income inequality, gender equality and provide women a chance for education and participate in economic activities.</i>	Slightly
	Poverty alleviation	<i>Purchase of fuelwood takes a large part of household income. In addition, FAO research of wood-energy supply in the context of poverty mapping shows the 2/3 of the rural population lives in wood fuel deficit conditions. ECOEYE stoves can cut-down amount of wood needed, thus reduce the budget spend on wood fuel, alleviating poverty.</i>	Partly
	Changes in distribution and/or generation of income and assets	<i>ECOEYE stoves users can save their spending on procuring fuelwood. The fuel cost savings can improve the economic status of ECOEYE stove users.</i>	Partly
	Increased municipal revenues		N/A
	Empowerment of women	<i>ECOEYE stoves primarily benefit women because most of ECOEYE stove users are women who spend a lot of time on collecting wood. By using efficient cookstoves, time spent on collecting wood decreases thanks to the reduced use of fuel and the women can use their time</i>	Highly



		<i>for education or other economic activities to empower themselves.</i>	
	Reduced traffic congestion		N/A
	Other welfare benefits		N/A

#### **D. Further information**

	<b>Specification</b>	<b>Extent</b>
	<i>Distribution of ECOEYE stoves improves the quality of life in rural communities of Myanmar in terms of sustainable development. High combustion efficiency of ECOEYE stoves produces less smoke which can prevent health diseases, and high thermal efficiency of ECOEYE stoves reduce the use of non-renewable fuelwood, cutting back their spending on fuel. This CDM PoA aims to distribute over 1 million ECOEYE stoves to each household in Myanmar, which will definitely contribute to sustainable development as well as the reduction of greenhouse gas thanks to the reduction of non-renewable biomass.</i>	