

# Clean Development Mechanism

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

CDM project activity or programme of activities (PoA) information	
<b>Title</b>	Catalytic N2O destruction project in the tail gas of the Nitric Acid Plant of Abu Qir Fertilizer Co.
<b>Pre-registration reference no.</b>	
<b>Reference no.</b>	490
<b>Type</b>	Project Activity
<b>Sectoral Scope</b>	Chemical industry (5)
<b>Host Party</b>	Egypt

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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			•		
Energy	Other economic benefits		•			
	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	Besides the destruction of N2O from the nitric acid plant's tail gas stream the CDM project reduces NOx emissions by more than 90%.	Highly
	Fly ash emissions		No
	SPM		No
	NMVOCs		No
	Noise		No
	Odors		No
	Dust		No
	Other air quality improvements	The project participants agreed on spending a share of the total income from selling of the CERs for a Social Fund for area surrounding the project. This fund contributes to the social benefit of the people living in the area of the CDM project activity by financing sustainable projects. Acc. to the social fund activities following projects were implemented with regard to air quality: • 4 surveillance stations were installed in order to monitor the emissions continuously; • Monitoring devices were installed at the stack of the plant in order to monitor dust and smoke; • A link between the surveillance stations and the national network for industrial emissions surveillance; • Planting trees in the surrounding area.	Slightly
Water	The CDM improves the quality of water and access to water as follows:		
	Waste water	No water pollution is expected, as the EnviNOx®-System doesn't consume water during operation. Moreover, the project participants agreed on spending a share of the total income from selling of the CERs for a Social Fund for area surrounding the project. This fund contributes to the social benefit of the people living in the area of the CDM project activity by financing sustainable projects. Acc. to the social fund activities water treatment of a drain in the surrounding district was implemented.	Partly
	Conservation of water		No
	Distribution		No
	Purification or a cleaner supply		No
	Water bodies		No
	Other means		No

### B. Social co-Benefits

Indicator	Specification	Extent
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Jobs	The CDM creates new job opportunities including income generation as follows:		
	New long term jobs	<i>The CDM project requires a lot of basic monitoring as well as maintenance and repairing activities etc., which requires labour force.</i>	Highly
		New long-term jobs > 1 year - 3	
	New short term jobs		No
		New short-term jobs < 1 year -	
Health & safety	Income generation		No
	Other employment opportunities	<i>Some indirect job opportunities arise from the CDM project due to catalyst transportation, instrument installation or calibration, maintenance works, insurances, etc.</i>	Slightly
	The CDM results in health and safety improvements as follows:		
	Reduction of diseases, disease prevention	<i>The project participants agreed on spending a share of the total income from selling of the CERs for a Social Fund for area surrounding the project. This fund contributes to the social benefit of the people living in the area of the CDM project activity by financing sustainable projects. Acc. to the social fund activities following projects were implemented with regard to health &amp; safety: • Medical convoys; • Equipping an ambulance with the needed medical devices; • Establishing a medical clinic.</i>	Highly
	Reduction of accidents	<i>Acc. to the social fund activities following projects were implemented with regard to health &amp; safety: • A fire truck project in order to reduce the causalities in the surrounding districts; • Also equipping an ambulance with the needed medical devices and tools; • Establishing a medical clinic; • Fortifying and maintaining roads in the surrounding area of the project.</i>	Partly
	Reduction of crime		No
	Preservation of food	<i>NOx as a GHG is partly responsible for global warming and droughts. In that way, reducing any NOx emission will help on preserving cultivated lands and therefore preservation food.</i>	Slightly
	Reducing health damaging indoor air pollution	<i>By reducing NOx emissions air pollutions is reduced and prevents any derived health diseases. Acc. to the social fund activities following projects were implemented with regard to health &amp; safety: • 4 surveillance stations were installed in order to monitor the emissions continuously; • Monitoring devices were installed at the stack of the plant in order to monitor dust and smoke; • A link between the surveillance stations and the national network for industrial emissions surveillance; • Planting trees in the surrounding area.</i>	Slightly
	Enhancement of health services	<i>Acc. to the social fund activities following projects were implemented with regard to health &amp; safety: • Executing medical convoys; • Equipping an ambulance with the needed medical devices and tools; • Establishing a medical clinic.</i>	Highly
	Improved sanitation and waste management	<i>Acc. to the social fund activities following projects were implemented with regard to health &amp; safety: • 2 projects related to removing waste from the surrounding area were developed; • Water treatment of a drain in the surrounding district.</i>	Highly
	Other health and safety improvements		No

Education	The CDM facilitates education, dissemination of information, research or increases awareness as follows:		
	Job related training	<i>The personnel dedicated to the CDM project are encouraged on learning more about sustainability and emission reduction process looking for new opportunities of sustainable development.</i>	Highly
	Enhanced educational services	<i>The project participants agreed on spending a share of the total income from selling of the CERs for a Social Fund for area surrounding the project. This fund contributes to the social benefit of the people living in the area of the CDM project activity by financing sustainable projects. Acc. to the social fund activities following projects were implemented with regard to education: • renovation of schools in the surrounding area; • developing schools and equipping them with new educational tools.</i>	Slightly
	Project related knowledge dissemination	<i>The CDM project uses a new technology, which was the first of its kind in the region when it was implemented. Accordingly, employees needed to be educated and trained or awareness in environmental protection needed to be built among the neighbours by establishing conferences and visits.</i>	Slightly
	Other educational benefits	<i>Under the social fund activities tools and applications were financed under the cooperation protocol between AFC and Faculty of Science for treatment of drainage canal in the surrounding district.</i>	Partly
Welfare	The CDM improves local living and working conditions as follows:		
	Improvement of working conditions		No
	Community or rural upliftment		No
	Poverty alleviation		No
	Changes in distribution and/or generation of income and assets		No
	Increased municipal revenues		No
	Empowerment of women		No
	Reduced traffic congestion	<i>The project participants agreed on spending a share of the total income from selling of the CERs for a Social Fund for area surrounding the project. This fund contributes to the social benefit of the people living in the area of the CDM project activity by financing sustainable projects. Acc. to the social fund activities a project of fortifying and maintaining roads in the surrounding area was implemented.</i>	Partly
	Other welfare benefits	<i>Acc. to the social fund activities following projects were implemented with regard to welfare: • Planting trees on the roads in the surrounding environment; • Establishment of bridges on canal for serving residents around; • Construction of a reading and celebration hall; • Water treatment of a drain in the surrounding district.</i>	Slightly

### **C. Economic co-Benefits**

Indicator	Specification	Extent
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Growth	The CDM supports economic development and/or stability as follows:		
	New investments	<i>The CDM project was the first of its kind in the region in terms of technology and investment. Taking into consideration the success of the GHG destruction achieved, the project could be the first of many investments for similar project activities. Additionally, jobs were created, new technology / instruments were imported, in the local infrastructure was invested, etc.</i>	Highly
	New industrial/comercial activities		No
	New infrastructure		No
	Enhancement of productivity		No
	Reduction of production costs (services)		No
	New business opportunities	<i>external maintenance, transportation or security services etc.</i>	Slightly
Technology transfer	Other economic benefits		No
	The CDM results in a change in technology as follows:		
	New imported technology	<i>The installed technology (EnviNOx) was the first of its kind in Egypt and the middle east area, which aims to destruct both N2O and NOx.</i>	Highly
	New local technology		No
	Adaptation of new viable technologies		No
	Know-how activities for a technology	<i>The CDM project contributes significantly to the transfer of advanced technologies and to stimulate the development of local capacity for operation and maintenance services. Also, national engineers are trained by technology providers to maintain and manage these technologies.</i>	Highly
	Other technological benefits		No

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

	Specification	Extent
	<i>The nitric acid plant operator developed a project called ZERO liquid discharge project, which was also approved by the environmental authority. Among others this project involves process water recirculation inside the process without being discharged.</i>	