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Item 4 (c) of the provisional agenda

National communications from Parties not included in Annex I to the Convention

Provision of financial and technical support

List of projects submitted by Parties not included in Annex I to the Convention

Note by the secretariat

Summary

This document lists projects proposed by Parties not included in Annex I to the Convention for financing in accordance with Article 12, paragraph 4, of the Convention. The list is based on initial national communications submitted to the secretariat as at 1 September 2005.

The Subsidiary Body for Implementation (SBI), at its twenty-third session, may wish to provide further guidance to Parties on how they may further develop their project proposals for funding and implementation. The SBI may also wish to provide guidance to the secretariat on possible follow-up actions relating to the presentation of information on these projects.

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LIST OF PROJECTS SUBMITTED TO THE SECRETARIAT BY PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION IN ACCORDANCE WITH ARTICLE 12, PARAGRAPH 4	5
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I. Introduction

A. Mandate

1. Article 12, paragraph 4, of the Convention, states that developing country Parties may propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, together with, if possible, estimates of removals of greenhouse gases (GHGs) and an estimate of the consequent benefits. In accordance with this Article, the Conference of the Parties (COP), by its decision 12/CP.4, requested the secretariat to compile and make available to Parties a list of projects submitted by Parties not included in Annex I to the Convention (non-Annex I Parties).

B. Approach and scope of the note

2. The secretariat has reviewed the relevant sections of all 125 initial national communications submitted by non-Annex I Parties as at 1 September 2005 with a view to compiling the list of project proposals. These projects are grouped in accordance with the Intergovernmental Panel on Climate Change¹ mitigation sectors: agriculture; energy supply; forest; industrial; residential, commercial and institutional buildings; solid waste and waste-water disposal; and transport.

3. The Subsidiary Body for Implementation (SBI), at its twenty-second session, recommended that the COP, at its eleventh session, in the context of additional guidance to an operating entity of the financial mechanism, request the Global Environment Facility to assist non-Annex I Parties in formulating and developing project proposals identified in their national communications, when formulating national programmes to address climate change issues.

4. This note contains a list of 469 project proposals identified as project concepts and profiles (see annex).

C. Possible action by the Subsidiary Body for Implementation

5. The SBI may wish to provide further guidance to Parties on how they may further develop their project proposals for funding and implementation. The SBI may also wish to provide guidance to the secretariat on possible follow-up actions relating to the presentation of information on these projects.

II. Compilation of project proposals by sector

A. Agriculture sector

6. Fourteen proposals involve improved management of ruminant livestock (for example, by improving the diet of cattle by means of grazing, managing manure and promoting mixed farming); 6 involve improved rice production practices (including irrigation management of wetland rice fields to reduce methane emission); 3 aim to increase the efficiency of nitrogen fertilizer use; 7 aim to increase carbon sinks in agricultural soils (for example, by reducing tilling); and 3 aim for improved energy efficiency through reduction in fossil fuel usage.

B. Energy supply sector

7. Twenty-five proposals deal with the efficient conversion of fossil fuels including introduction of clean coal and cogeneration; 11 involve a switch to lower-carbon fossil fuels (for example, the

¹ Watson, R., M. Zinyowera and R. Moss. (1996). *IPCC Technical Paper I: Technologies, Policies and Measures for Mitigating Climate Change*.

introduction of natural gas to replace coal, diesel and oil in thermal plants); 103 involve switching to renewable sources of energy (e.g. biogas to replace wood fuel in rural areas; geothermal and ocean sources (for electricity generation); hydropower (e.g. construction of small hydropower plants); solar energy (such as use of photovoltaics and solar home systems); and wind (to power generators)); and 1 involves decarbonization of flue gases and fuels, and CO₂ storage and sequestering.

C. Forest sector

8. Forty-two proposals target forest practices/goals such as afforestation using exotic species and changing cultivars; 21 target conservation of forests (e.g. introduction of new afforestation and reforestation programmes and rehabilitation of degraded forests); 12 focus on production forestry or agroforestry, such as management of natural forests by communities and private individuals; and 5 cover fuelwood conservation and use of recycled wood products.

D. Industrial sector

9. Nine proposals involve industrial energy efficiency gains (e.g. by enforcing energy savings and by renewing industrial equipment); 4 involve fuel switching (to natural gas and renewable energy sources); 29 involve the introduction of new technologies and processes (for example, technological upgrading in cement industry); 5 involve cogeneration and other thermal efficiency (for example, gasification of sugar cane bagasse for energy generation); and 18 target non-energy-related process improvements to reduce GHG emissions from industrial processes (energy demand side management programmes).

E. Residential, commercial and institutional buildings sector

10. Fourteen proposals target energy-efficient lighting, such as the substitution of incandescent lamps with efficient lamps; 23 focus on cooking (for example, using improved cooking stoves to reduce fuelwood consumption, promoting the use of kerosene as a cooking fuel); 3 are on heating technology (for example, introducing solar energy for heating water and removing barriers to energy efficiency in municipal heat supply); 1 focuses on improved boilers in business establishments; 24 involve various measures to improve energy management (e.g. national energy conservation programmes in the sector, including establishment of a sustainable energy centres, rational use of energy in government buildings); and 4 are on design and construction of energy-efficient buildings such as the introduction of new building techniques to improve natural ventilation and air-conditioning in household and commercial buildings.

F. Solid waste and waste-water disposal sector

11. Fourteen proposals target methane recovery from solid-waste disposal and reduction from waste water; 2 focus on reducing GHG emissions through source reduction activities; 6 focus on composting initiatives (especially for the production of biogas); and 10 focus on various associated waste aspects such as recycling, reuse and smart selection of materials for use.

G. Transport sector

12. Nine proposals involve alternative energy sources such as the use of gasohol (a mixture of ethanol with gasoline) and compressed natural gas for cars; 7 involve transport infrastructure and system changes (redesigning the construction of roads and rehabilitation of existing roads); and 34 aim to reduce transport and vehicle energy intensity (including changing driving behaviour and modal shifts, e.g. public transport and bicycles).

Annex

List of projects submitted to the secretariat by Parties not included in Annex I to the Convention in accordance with Article 12, paragraph 4

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO ₂)	Country
Sector: Agriculture		
Subsector: Adopt manure management practices for CH₄ collection		
1 Manure management using biodigesters		Ecuador
2 Research into low-methane-emitting agriculture systems		Chad
Subsector: Expand biofuel production as carbon offset		
1 Biogas programme in the agriculture and livestock sectors (USD 60,000)	2.68	Ecuador
Subsector: Improve efficiency of use of nitrogen fertilizer		
1 Adopting appropriate fertilizer application		Ethiopia
2 Appropriate and efficient use of fertilizers		El Salvador
3 Improve efficiency of use of nitrogen fertilizer		Mauritania
Subsector: Improve management of ruminant animals		
1 Animal breeding and use of biodigesters for the production of energy		Mali
2 Better management and improvement of pastures (USD 65,400,000)		Madagascar
3 Diet enhancement of livestock using management programmes		Ecuador
4 Improve livestock management (lower enteric fermentation and manure management) (USD 80,000,000)		Mauritania
5 Improvement of livestock diet		Chad
6 Improvement of the diet of cattle by means of grazing land management		Ecuador
7 Increasing livestock productivity through improved nutrition, strategic supplementation, and treatment of forages to improve digestability and through improved genetic characteristics		Ethiopia
8 Information, education and communication of greenhouse gas emission reduction in agriculture and cattle breeding		Burundi
9 Manure management through biodigesters		Ecuador
10 Programme on livestock and carbon uptake		Nicaragua
11 Promoting mixed crop livestock farming where appropriate		Ethiopia
12 Promoting use of manure management systems		Ethiopia
13 Reduction of methane emissions in livestock by introducing diet changes		Costa Rica
14 Research and development on technologies aiming to reduce greenhouse gas emissions in agriculture and cattle breeding		Burundi
Subsector: Improve rice production practices		
1 Improve cultural practices and introduce new technologies (USD 880,000,000)		Madagascar
2 Improve water and fertilizer management (USD 70,000,000)		Mauritania
3 Improve water management in irrigated rice cultivation		Mali
4 Improved rice production practices		Guyana
5 Irrigation management of wetland rice fields to reduce methane emission (USD 5,025,000)		Viet Nam
6 Use and management of rice crop wastes		Ecuador
Subsector: Increase carbon storage in agricultural soils		
1 Climate change mitigation through development of carbon sinks (USD 600,000)		Kenya
2 Post-harvest management to avoid the burning of wastes and the preservation of farming soils		El Salvador
3 Programme on carbon uptake		Nicaragua
4 Promoting sustainable agriculture		Ethiopia
5 Reduction in savannah burning		Chad
6 Rehabilitation of overgrazed watering points and long-term settlement areas and redistribution of manure that is accumulated near these settlements		Ethiopia
7 The use of conservation tillage techniques to sequester carbon in agricultural soils		Ethiopia

Project title (and cost when applicable)	Estimated emission reduction/sequestration (kt CO ₂)	Country
Sector: Energy supply		
Subsector: Decarbonization of flue gases and fuels, and CO₂ storage and sequestering		
1 Assessment of CH ₄ emissions from leaking facilities in the upstream oil and gas sector and options for reduction		Nigeria
2 Recovery of liquefied petroleum gas (LPG) from associated natural gas		Ecuador
Subsector: Efficient conversion of fossil fuels		
1 Action programme for the promotion of energy efficiency using energy audits, training programmes, public awareness and promoting solar energy		Niger
2 Alkylation unit (USD 30,000,000)		Jordan
3 Brazilian wood BIG-GT demonstration project/Integrated wood gasification and electricity generation system (WBP/SIGAME)		Brazil
4 Coal gasification		Botswana
5 Co-boiler for the fluid catalytic cracking unit (USD 2,740,000)		Jordan
6 Construction of 13 cogeneration plants, with a total installed capacity of around 110MW		Brazil
7 Construction of a 60 MW cogeneration plant		Barbados
8 Continuous catalytic informer (USD 85,000,000)		Jordan
9 Crude oil distillation unit (USD 2,500,000)		Jordan
10 Expansion of distillation capacity (USD 80,000,000)		Jordan
11 Gasification (USD 225,000,000)		Jordan
12 Heat recovery from sulphuric acid plant/Jordan Phosphate Mining Company (USD 26,000,000)		Jordan
13 Hydrocracking (USD 100,000,000)		Jordan
14 Hydro-desulphurization for diesel (USD 60,000)		Jordan
15 Improve transmission and distribution system to bring down the current energy losses		Sri Lanka
16 Improvement of baseline scenarios for the development and selection of appropriate policies and measures to mitigate climate change		Chad
17 Increase efficiency of thermal plants through technological innovation		El Salvador
18 Introduction of clean coal technology		Democratic People's Republic of Korea
19 Introduction of combined cycle in steam thermal plants		El Salvador
20 Isomerization unit (USD 30,000,000)		Jordan
21 Merox upgrade (USD 1,000,000)		Jordan
22 Modern fluid catalytic cracker (USD 200,000,000)		Jordan
23 Paper sludge and solid waste (AUD 9,000,000)		Indonesia
24 Retrofitting existing power plants		Guyana
25 Sulphur recovery plant (USD 5,000,000–10,000,000)		Jordan
Subsector: Switching to low-carbon fossil fuels		
1 Assessment of greenhouse gas mitigation options in the energy sector		Dominican Republic
2 Electric power generation using residual natural gas		Ecuador
3 Electricity generation using residual natural gas (USD 35, 000)	53/year	Ecuador
4 Introduction of natural gas in diesel and fuel oil thermal plants		El Salvador
5 Natural gas substitution of coal	7 800	Peru
6 Natural gas substitution of diesel	6 000	Peru
7 Piping of natural gas from the proposed West Africa Gas Pipeline to and within some urban areas of Ghana (USD 480,000,000)		Ghana
8 Reducing CO ₂ emissions from fuelwood consumption through large-scale introduction of liquefied petroleum gas	782	Gambia
9 Support construction of a gas pipeline from Mexico in order to promote the use of natural gas in Honduras		Honduras
10 Technical upgrading and change of fuel in two thermal plants		El Salvador
11 Two additional gas pipelines will substitute coal, residual oil and diesel	2 400	Peru
Subsector: Switching to renewable sources of energy		
1 16 MW wind turbine farms at good wind sites in northern Barbados		Barbados
2 Biogas programme for the country's agricultural and livestock sectors		Ecuador
3 Construct wind power stations for Coto Island in Quang Ninh province (USD 200,000)		Viet Nam
4 Construction of wind farms		Barbados
5 Demonstration project for grid-connected renewable energy technologies and their commercial and economic potential		Antigua and Barbuda

Project title (and cost when applicable)	Estimated emission reduction/sequestration (kt CO₂)	Country
6 Development and implementation of long-term renewable energy policy programmes, including the development and application of carefully selected technological and institutional "leapfrogging" strategies		Antigua and Barbuda
7 Development of renewable energy (USD 50,000,000)		Viet Nam
8 Development of renewable energy	11 091 equivalent (2001–2020)	Morocco
9 Dissemination of solar, wind and biogas energy technology		Ethiopia
10 Electric generation using renewable energy sources: solar, small hydro, biomass, wind		El Salvador
11 Encouraging utilization of renewable energy in rural areas (USD 460,000)		Viet Nam
12 Establishment of a renewable energy centre		Barbados
13 Evaluation of renewable energy sources for inland locations		Guyana
14 Generation of energy from Botswana Meat Commission abattoir waste		Botswana
15 Geothermal hot water supply: Hippodrome district geothermal hot water supply project (USD 860,000)		Georgia
16 Hydroelectricity substitutes diesel	8 500	Peru
17 Hydroelectricity substitutes natural gas	2 300	Peru
18 Power generation options for Botswana from mixing and hybrids of renewable energy resources (solar, wind and waste)		Botswana
19 Promoting the use of renewable energy		Ethiopia
20 Promotion of renewable energies: solar, wind and micro-hydro		Chad
21 Solar collectors	1 000	Peru
22 Use renewable sources of energy to satisfy energy demand by 2010	61.49/year	Costa Rica
23 Wind turbines	900	Peru
End use/description: Biomass/biogas		
1 10 MW waste combustion plant		Barbados
2 Biogen Project, use of wood waste and waste of African palm to produce electricity		Honduras
3 Electricity generation using wood waste in Ocotol area		Nicaragua
4 Phytothermal energy production (USD 880,000)		Ghana
5 Production of electricity using bamboo		Honduras
6 Promoting sustainable biomass energy use in rural areas to reduce CO ₂ emissions		Morocco
7 Promotion of application of biogas technology (USD 750,000)		Kenya
8 Replacement of wood-fuel boilers for tea drying (USD 2,000,000)		Kenya
9 Using biogas as fuel to mitigate greenhouse gas emissions in rural areas (USD 1,500,000)		Viet Nam
10 Using biomass as a substitute for fossil fuels through the production of woody biomass		Ethiopia
11 Utilization of organic residues from food processing plants for energy generation		Botswana
End use/description: Geothermal and ocean energy		
1 2 MW of solar photovoltaic system distributed around the island		Barbados
2 2 MW wave power plant		Barbados
3 3 MW ocean thermal energy conversion plant		Barbados
4 Expand the use of geothermal energy in electricity generation		El Salvador
5 Exploitation of geothermal energy in Viet Nam (USD 400,000)		Viet Nam
6 Exploration regarding geothermal energy in Jordan (USD 1,400,000)		Jordan
7 Geothermal hot water supply: Tbilisi geothermal hot water supply project (USD 30,800,000)		Georgia
8 Geothermal hot water supply: Zugdidi geothermal heat supply project (USD 15,000,000)		Georgia
9 Identification of renewable energy sources (geothermal-feasibility study) (USD 400,000)		Comoros
10 Production of electric energy using geothermal resources (USD 88,000,000)	4 496	Djibouti
End use/description: Hydropower		
1 Action programme for energy supply using hydro dams		Niger
2 Alternative/renewable energy sources for the outer islands of the Maldives		Maldives
3 Assessing small-scale hydropower potential and demonstration project in combination with dissemination of electric cooking stoves		Lao People's Democratic Republic
4 Construction of mini-hydel turbine and generator factory (USD 4,000,000)		Democratic People's Republic of Korea
5 Construction of Mpanda hydropower unit		Burundi

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO₂)	Country
6 Construction of Nachtigal and Memve-Ele hydro stations (XAF 186 billion)	890 yearly	Cameroon
7 Construction of small hydroelectric plants		El Salvador
8 Energy generation using small hydroelectric systems (USD 3,200,000)	8.8/year	Ecuador
9 Energy generation using small hydropower plants		Ecuador
10 Harness the total maximum identified potential of hydropower, based on a study of the economic and environmental impacts of identified potential hydropower		Sri Lanka
11 Increase hydroelectric and geothermal resources		El Salvador
12 Increasing the number of hydropower units	4 902 equivalent (2001–2020)	Morocco
13 Install mini- and micro-hydropower generation for electricity in high-potential areas of Sudan		Sudan
14 Komarindi/Lungga hydropower project: Renewable energy technologies for the capital city of Solomon Islands, peri-urban areas and industries		Solomon Islands
15 Micro-hydro: renewable energy technologies for rural communities		Solomon Islands
16 Mini-hydro: renewable energy technologies for nine provincial centers		Solomon Islands
17 Pilot programme for rural electrification using small hydropower plants		Nicaragua
18 Removal of barriers to the development of hydroenergy		Haiti
19 Renovation and extension of Matandani mini-hydropower station in Mwanza (USD 600,000)		Malawi
20 Replacement of diesel generators by hydropower, mainly in urban centres		Ethiopia
21 Siltation reduction along Shire River for hydropower enhancement and greenhouse gas emission reduction (USD 1,000,000)		Malawi
22 Small hydro-energetics: Abasha hydropower plant rehabilitation project (USD 1,000,000)		Georgia
23 Small hydro-energetics: Intsoba hydropower plant rehabilitation project (USD 850,000)		Georgia
24 Small hydro-energetics: Martkopi hydropower plant rehabilitation project (USD 750,000)		Georgia
25 Small hydro-energetics: Misaktsieli hydropower plant rehabilitation project (USD 2,300,000)		Georgia
26 Small hydro-energetics: Stori hydropower plant project (USD 8,400,000)		Georgia
End use/description: Solar energy		
1 Action programme for energy supply using solar energy		Niger
2 Building houses with efficient lighting and solar energy		El Salvador
3 Decentralized energy supply through solar home systems in rural households		Lao People's Democratic Republic
4 Decentralizing electrification by photovoltaic systems		Burundi
5 Displacement of diesel generators by solar home systems (USD 2,450,000)	130	Gambia
6 Electricity supply sector: removing barriers for implementing renewable energy (solar and wind)		Lebanon
7 Encouraging the use of solar water heaters	728 equivalent (2001–2020)	Morocco
8 Gerahelio, a project to identify the most appropriate solar technology and the size of a pre-commercial plant based on solar concentrators (30 MW)		Brazil
9 Irrigation using photovoltaic systems		Mauritania
10 Large-scale power generation from solar energy		Botswana
11 Photovoltaic electrification in rural areas		Côte d'Ivoire
12 Power supply by photovoltaic systems to remote villages (USD 3,500,000)		Jordan
13 Promoting the use of photovoltaic equipment (USD 943,000)	161	Mauritania
14 Promotion of solar-based rural electrification (USD 1,200,000)		Kenya
15 Reducing wood consumption by promoting energy-saving technologies such as solar lighting equipment		Mali
16 Rehabilitation of the Regional Centre for Solar Energy (CRES)		Mali
17 Reverse osmosis water desalination (ROWD) with renewable energy hybrid system in remote areas (USD 2,400,000)		Jordan
18 Rural electrification with photovoltaic solar systems		Ecuador
19 SALT-gradient solar pond pilot plant (USD 633,000)		Jordan
20 Solar and wind energy resources assessment and mapping (USD 600,000)		Mongolia
21 Solar energy project for communities (USD 115,000)		Ghana
22 Solar photovoltaic: renewable energy technologies for rural communities		Solomon Islands
23 Tapping solar energy for water heating in the residential sector		Ecuador
24 Use of solar energy for water heating in the residential setor (USD 3,900,000)	73	Ecuador

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO ₂)	Country
End use/description: Wind		
1 Action programme for energy supply using wind energy		Niger
2 Electricity generation using wind energy	12 655 equivalent (2001–2020)	Morocco
3 Electricity supply sector: removing barriers to implementing renewable energy (solar and wind)		Lebanon
4 Honduras ZOND project. A 60 MW wind power station to be installed in the area of Tegucigalpa		Honduras
5 Installation of wind generators in Nouadhibou (USD 4,150,000)		Mauritania
6 Substitution of thermic plants by a 25 MW wind energy unit	56 per year	Colombia
7 Technologies required for implementation of mitigation policy: electric and mechanical equipment for wind power plants (USD 11,000,000)		Georgia
8 Use of aeolian energy		Mexico
9 Wind power: Karenergo wind power plant project (USD 5,000,000)		Georgia
Sector: Forest		
Subsector: Conservation forests		
1 Application of proper resources management (existing forest reserves and rangeland sites)		Sudan
2 Conservation and management of ecosystems in the Uraba zone	21 920 in 30 years	Colombia
3 Conservation of natural forests in the Tinigua and Macarena zones	15 289 in 30 years	Colombia
4 Conversion of livestock farms to agroforestry systems in the Puerto Carreño zone	5 034 in 25 years	Colombia
5 Developing and restoring gallery forests along river banks		Ethiopia
6 Forest conservation and protection (USD 3,870,000)		Madagascar
7 Forest conservation and reforestation in the Medio Atrato zone	1 193	Colombia
8 Forest conservation and reforestation in the Purace zone	24 531 in 30 years	Colombia
9 Forest conservation and reforestation in the Quindio zone	9 146 in 30 years	Colombia
10 Forest conservation in the Bucaramanga Corporation's zone	7 408 in 25 years	Colombia
11 Forest conservation in the Guerrero zone	359	Colombia
12 Forestry: Tbilisi Dendrological Park restoration project (USD 230,000)		Georgia
13 Improve the conservation and management of forest resources (USD 500,000)		Comoros
14 Initiate new afforestation and reforestation programmes		Ethiopia
15 Management of protective forests of the watersheds of the canton of Puyango		Ecuador
16 Reforestation of degraded lands		Namibia
17 Reforestation of some of the main watersheds in the country		El Salvador
18 Rehabilitation and reforestation of the Artibonito River basin and other areas of the Border Region		Dominican Republic
19 Rehabilitation of degraded forests		Ethiopia
20 Restoration and protection of the tropical humid forest in the area of Esperanza Verde, Rio San Juan		Nicaragua
21 Restoration of forests (USD 2,500,000)		Madagascar
Subsector: Forest practices/goals		
1 Afforestation and reforestation programmes for waste degraded rangelands		Sudan
2 Afforestation with exotic species	9 900	Peru
3 Afforestation with indigenous species	4 300	Peru
4 Capacity-building of seed production for sustainable forest development (USD 3,500,000)		Democratic People's Republic of Korea
5 Changing cultivars (pijuayo for palmito)		Peru
6 Coffee cultivation		Peru
7 Conservation and sustainable management of natural areas		El Salvador
8 Enhancement of Ecuador's national system of protected areas	25 609	Ecuador
9 Establishment of silvopastoral systems in the Gaumote area	477	Ecuador
10 Forest management	2 400	Peru
11 Forest management in the Calamar zone	35 012 in 25 years	Colombia
12 Forestry: afforestation project of Red Bridge environs (USD 250,000)		Georgia
13 Forestry: Nabadkhevi forest rehabilitation project (USD 270,000)		Georgia
14 Forestry: reforestation project of Kaspi District (USD 350,000)		Georgia
15 Hydrologic rehabilitation and carbon uptake project for the sustainability of coffee production in the Matagalpa area		Nicaragua
16 Improvement of timber harvesting techniques		Sudan
17 Improving forest management practices		Ethiopia
18 Joint forestry project to offset greenhouse gas emissions (USD 5,000,000)		Ghana

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO₂)	Country
19 Management of 330,000 ha of forests (USD 14,220,000)		Mauritania
20 Management of forests in order to slow down rates of deforestation		Chad
21 Management of forests in the Puyango area	29	Ecuador
22 Management of natural resources in wet zones (USD 25,900,000)		Mauritania
23 Planting protective forest in the watershed of Ngan Sau, Ngan Pho Rivers (USD 7,010,000)		Viet Nam
24 Prepare a database to (a) quantify the role of forests and forest soils as reservoirs, sinks and sources of carbon and (b) define ways to alter forest management systems to optimize adaptation to climate change, sequestration and storage of carbon		Sri Lanka
25 Productive forest plantations in the canton of Bolivar		Ecuador
26 Protected areas project		Costa Rica
27 Protection of forests to avoid deforestation		El Salvador
28 Protection/preservation of existing forests from losses caused by deforestation and other practices		Ethiopia
29 Reforestation and afforestation (USD 5,350,000)		Democratic People's Republic of Korea
30 Reforestation and management of plains and small catchment areas (USD 2,205,000)		Djibouti
31 Reforestation of 30,000 ha per year		Burundi
32 Reforestation of 600 ha (between 2003 and 2006)		Central African Republic
33 Reforestation of mountain regions (USD 1,095,000)		Djibouti
34 Reforestation of several areas using trees able to adapt to difficult ecological conditions		Chad
35 Reforestation programmes in Assaba, Gorgol, Brakna, Trarza, Guidimakha, Hodh el Gharbi, Hodh Chargui and Tagant (USD 688,000)		Mauritania
36 Rehabilitation and sustainable management practices for degraded rangelands		Sudan
37 Rehabilitation of degraded forest areas (USD 1,500,000)		Ghana
38 Replication of a reforestation project in other regions of the country		Mali
39 Socio-economic development of rural communities in the Caribbean zone	3 818 in 25 years	Colombia
40 Supporting the reforestation master plan	7 147 equivalent (2001–2020)	Morocco
41 Sustainable management of the Chachi native forest in the Cayapas river	8	Ecuador
42 The use of remote sensing for monitoring forest cover changes and for establishing base-line data		Ghana
Subsector: Fuelwood conservation and substitution		
1 Creation of demonstrations for establishment and management of firewood forest (USD 1,250,000)		Democratic People's Republic of Korea
2 Replacing firewood and kerosene with liquefied petroleum gas and solar energy in the residential sector		El Salvador
3 Sensitize charcoal makers about new techniques and promote more efficient charcoal kilns in order to minimize pressure on forest (USD 200,000)		Central African Republic
4 Substitution of firewood by other energy resources		Chad
Subsector: Production forestry/agroforestry		
1 Agroforestry		Namibia
2 Agroforestry projects in 12 areas that have degraded soils		Honduras
3 Establishment of agroforestry systems in the Carmen area	1 750	Ecuador
4 Forest plantation on sandy soil at the coast of southern central Viet Nam (USD 11,500,000)		Viet Nam
5 Forestry plantations in the Balzar area	477	Ecuador
6 Forestry plantations in the Bolivar area	143	Ecuador
7 Green belt of Guayaquil city	11	Ecuador
8 Management of natural forests by communities (USD 4,829,000)		Gambia
9 Private forestry project		Costa Rica
10 Promoting agroforestry		Ethiopia
11 Promotion of agroforestry and the prevention of forest fires		El Salvador
12 The development of agroforestry	4 613 equivalent (2001–2020)	Morocco
Subsector: Use of recycled and more efficient wood products		
1 Enhancement of the use of treatments for the better preservation of wood products		Burundi

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO₂)	Country
Sector: Industrial		
Subsector: Cogeneration and thermal cascading		
1 Cogeneration in sugar cane production		Colombia
2 Cogeneration in the textile industry	9 equivalent per year	Colombia
3 Development of cogeneration	4 002 equivalent in the period 2001–2020	Morocco
4 Gasification of sugar cane bagasse for energy generation		Colombia
5 Research on cogeneration technology from biomass fuel (USD 1,350,000)		Viet Nam
Subsector: Energy efficiency gains		
1 Energy auditing in the industrial sector		Sudan
2 Energy conservation and saving in small and medium-sized enterprises (USD 1,500,000)		Viet Nam
3 Energy efficiency and the reduction of greenhouse gases in the industrial sector		Algeria
4 Energy saving in industry (USD 3,300,000)		Viet Nam
5 Industrial boiler efficiency improvement (USD 12,340,000)		Democratic People's Republic of Korea
6 Optimization of combustion in boilers for steam generation in the industrial sector		Ecuador
7 Regulation of industrial performance (XAF 250 billion)	60 yearly	Cameroon
8 Technical enhancements by renewing industrial equipment		El Salvador
9 The development of demand-side management programmes in the industrial sector		El Salvador
Subsector: Fuel switching		
1 Replacing biomass fuel with higher-energy-density fuels in sectors of household, bakeries and brick-making industry		Sudan
2 Substitution of firewood in the production of bricks, roof tiles, salt and lime with cleaner and renewable energy sources such as liquefied petroleum gas		El Salvador
3 The introduction of natural gas		El Salvador
4 The introduction of technological innovations using renewable and cleaner energy sources		El Salvador
Subsector: Introducing new technologies and processes		
1 Coal bed methane investigations		Botswana
2 Demonstration and introduction of smokeless and high-efficiency coal bracketing technology (USD 15,000,000)		Mongolia
3 Desalination of water using wind energy in Tan-Tan	292 equivalent (2001–2020)	Morocco
4 Desalination water plant for San Andres	5 equivalent per year	Colombia
5 Develop an inventory on emissions from different industries		Sri Lanka
6 Develop mechanisms to reduce greenhouse gas emissions from different industries		Sri Lanka
7 Developing appropriate agricultural technologies to mitigate climate change (USD 1,020,000)		Malawi
8 Drying sugar beet by using superheated steam in the Doukkala sugar refineries	350 equivalent (2001–2020)	Morocco
9 Efficiency improvement and conversion of industrial boilers	2 100	Peru
10 Electricity generation from biogas in Bogota	12 218 equivalent in 20 years	Colombia
11 Electricity generation from biogas in Tumaco	5 equivalent per year	Colombia
12 Electricity generation from biogas in Tunja	11 equivalent per year	Colombia
13 Energy auditing in industries		Burundi
14 Exploring potential markets for natural gas		Barbados
15 Improved energy efficiency in brick manufacture	54 339 equivalent per year	Colombia
16 Improved energy efficiency in coke production	65 equivalent per year	Colombia

Project title (and cost when applicable)	Estimated emission reduction/sequestration (kt CO₂)	Country
17 Improved energy efficiency in juggery production	277 equivalent per year	Colombia
18 Industrial sector: efficiency improvements to boilers and furnaces via replacement and fuel switching options		Lebanon
19 Industrial sector: motor-driven system improvement and replacement		Lebanon
20 Modification of wet-type cement mills to dry-type mills in the Mongolian cement industry (USD 20,000,000)		Mongolia
21 Partial substitution of clinker by fly ash from thermal plants	6 000 equivalent (2001–2020)	Morocco
22 Project to increase energy efficiency in Kaspi cement plant (USD 1,000,000)		Georgia
23 Research on agricultural by-products, vegetable oils and alcohol as alternative sources of energy		Mali
24 Setting up of manufacturing facilities to produce high-purity silicon for the computer chip and solar photovoltaic industries		Barbados
25 Technological innovations in the production of cement, lime, etc.		El Salvador
26 Technological upgrading in cement industry		El Salvador
27 Technology characterization inventory to support technology baselines and options for greenhouse gas emission reduction		Nigeria
28 Use of humid phosphate instead of dry phosphate in the Jorf Lasfer plant	894 equivalent (2001–2020)	Morocco
29 Use of solar distillation as a source of fresh water for the outer islands and Male		Maldives
Subsector: Material substitution		
1 Partial substitution of black phosphate by white phosphate in Youssoufia	1 981 equivalent (2001–2020)	Morocco
2 Promotion of the substitution of wood with non-metallic mineral material for construction usage (USD 860,000)		Comoros
3 Use of alternative materials for clinker in cement production		Costa Rica
4 Valorization of waste as energy source (USD 12,360,000)	1.02/year	Djibouti
Subsector: Process improvements		
1 Cement industry: conservation and preheating in pyroprocessing and improvements in the grinding process		Lebanon
2 Combustion optimization in boilers in the industrial sector (USD 1,500,000)	21	Ecuador
3 Commission a study on energy recovery from waste		Sri Lanka
4 Economic and environmental benefits of energy efficiency and conservation at the Barnangwato Concession Limited copper/nickel mine		Botswana
5 Energy demand side management programme for Mongolian industry (USD 500,000)		Mongolia
6 Heat recovery in the Safi and Jorf Lasfer chemical plants	4 690 equivalent (2001–2020)	Morocco
7 Improvements to the La Sierra thermic power plant		Colombia
8 Increased use of natural gas in the industrial sector	15 354 equivalent (2001–2020)	Morocco
9 Rational use of energy in the industrial sector	10 920 equivalent (2001–2020)	Morocco
10 Recover liquefied petroleum gas from natural gas (USD 67,000,000)	686/year	Ecuador
11 Reduction of losses in the energy sector (USD 128,000,000)	0.385/year	Ecuador
12 Rehabilitation of mining sites in Khouribga	264 equivalent (2001–2020)	Morocco
13 Replacement of boilers in the industrial and tertiary sectors	450 equivalent (2001–2020)	Morocco
14 Use of wastes as energy source for clinker in cement production		Costa Rica
Sector: Residential, commercial and institutional buildings		
Subsector: Building equipment		
1 Energy saving in the tertiary and residential sectors (XOF 800 million)		Burkina Faso
End use/description: Cooking		
1 Developing project proposal for improved cooking stoves demonstration project		Lao People's Democratic Republic
2 Dissemination of ecological stoves in the Pacific region of Nicaragua		Nicaragua
3 Greenhouse gas abatement using improved cooking stoves to reduce fuelwood consumption (USD 2,952,000)	988	Gambia
4 Improve biomass cooking stoves		Bangladesh

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO₂)	Country
5 Improvement of carbonization techniques		Burundi
6 Improving carbonization efficiency (USD 350,000)		Mauritania
7 Improving cooking stoves of the rural mountain communities (USD 350,000)		Viet Nam
8 Improving/promoting energy efficiency and conservation, e.g., wide distribution of improved biomass and charcoal stoves		Ethiopia
9 Introduction of improved stoves		Ethiopia
10 Introduction of solar cookers in household and service sectors		Sudan
11 Promoting biogas use for greenhouse gas emission reduction		Lao People's Democratic Republic
12 Promoting the use of butane (USD 5,250,000)		Mauritania
13 Promoting the use of improved stoves (USD 400,000)		Mauritania
14 Promoting the use of improved stoves in rural and urban areas		Burundi
15 Promoting the use of kerosene as cooking fuel (USD 70,000)		Mauritania
16 Promotion and diffusion of improved ovens and practices to reduce the use of fuelwood (USD 400,000)	70	Ecuador
17 Promotion and dissemination of improved stoves and firewood-saving practices		Ecuador
18 Promotion of improved stoves and charcoal kilns		Namibia
19 Recovery and use of sawing waste for briquette production		Burundi
20 Reduce greenhouse gas emissions by the promotion of improved biomass cook stoves, and kerosene- and gas-powered cook stoves		Benin
21 Semi-industrial production of improved cook stoves in aluminium		Côte d'Ivoire
22 Substitution of fuelwood in rural areas through promotion and use of residues		Botswana
23 Use of peat as cooking fuel (USD 1,770,000)		Mauritania
End use/description: Energy management		
1 Adopt energy-efficient building codes and standardization and labelling of energy-consuming end-use equipment		Sri Lanka
2 Connection of Nouakchott to the OMVS (Organisation pour mise en valeur du fleuve Sénégal) grid (USD 10,000)		Mauritania
3 Construction of high efficiency thin fluorescent lamp factory (USD 2,500,000)		Democratic People's Republic of Korea
4 Demonstration project to create a demand-side management programme unit		Antigua and Barbuda
5 Development of a plan to decentralize electrification		Burundi
6 Development of a system for assessing potential mitigation options		Cuba
7 Electric power saving in the residential sector by substituting luminaries		Ecuador
8 Electrification of the Vallée village (USD 276,000)		Mauritania
9 Energy conservation programme		Barbados
10 Energy saving in government buildings (USD 20,000)		Mauritania
11 Establishment of a sustainable energy centre (USD 2,000,000)		Mongolia
12 Establishment of an education campaign to promote the rational use of energy		Honduras
13 Expand and strengthen the capacity of the Energy Conservation Fund to improve its capability to assist different stakeholders in the energy sector in the areas of energy conservation and management		Sri Lanka
14 Financing the decentralization of rural electrification	604 equivalent (2001–2020)	Morocco
15 Improvements in building insulation (USD 500,000)		Mongolia
16 Introduce demand-side measures such as peak lopping through appropriate pricing, and popularization of more efficient end-use devices such as luminaries, refrigerators, and air conditioners and motors		Sri Lanka
17 Programme to conserve and efficiently use energy through seed fund		El Salvador
18 Promotion of the adoption of energy efficient appliances (XAF 300 billion)	430 (2030–2040)	Cameroon
19 Rational use of energy in government buildings	350 equivalent (2001–2020)	Morocco
20 Reconstruction and improvement of small-size boiler houses (USD 5,000,000)		Mongolia
21 Reduction of power losses in the electricity sector		Ecuador
22 Reorganization of the information system in the energy sector (USD 170,000)		Djibouti
23 Residential and commercial energy efficiency building codes		Botswana
24 Sustainable management of the domestic energy sector (USD 20,000,000)		Haiti
End use/description: Heating		
1 Removing barriers to energy efficiency in municipal heat supply (USD 211,000)		Georgia

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO₂)	Country
2 The promotion of energy efficiency in the residential sector by introducing solar energy for heating water, efficient bulbs and new construction technologies		El Salvador
3 Use of solar energy for water heating in the residential sector (USD 3,900,000)	73	Ecuador
End use/description: Lighting		
1 Building houses with efficient illumination and solar energy		El Salvador
2 Carbon emission reduction through replacement of incandescent bulbs with compact fluorescent lamps (USD 12,000,000)		Mongolia
3 Demonstration project to promote compact fluorescent lamps for residential use		Antigua and Barbuda
4 Efficient lighting and alternative energy sources		Namibia
5 Efficient lighting programme		Botswana
6 Energy saving in the residential sector by lamps substitution (USD 27,200,000)	680	Ecuador
7 Enhance energy saving in the residential sector by using compact fluorescent lamps		Costa Rica
8 Incandescent lamps substitution by efficient lamps, oriented to the residential sector		Honduras
9 Introduce compact fluorescent bulbs (150,000 annually) (XAF 4.5 billion)		Cameroon
10 Reducing CO ₂ emissions through use of compact fluorescent lamps in the government and commercial sectors		Lao People's Democratic Republic
11 Rural electrification with solar photovoltaic systems (USD 5,100,000)	8.4	Ecuador
12 Substitution of conventional lamps in Villavicencio	1 equivalent per year	Colombia
13 Substitution of luminaries for other more efficient street lighting systems		Ecuador
14 Substitution of photovoltaic lanterns for kerosene lighting		Ethiopia
End use/description: Other appliances		
1 Promote the use of improved boilers in business establishments (hammams, ovens)	3 426 equivalent (2001–2020)	Morocco
Subsector: Building thermal integrity		
1 Enhancing thermal performance of building envelopes: capacity-building project		Lebanon
2 Enhancing thermal performance of building envelopes: market-based programme		Lebanon
3 Introduction of new building techniques to improve natural ventilation and air-conditioning in household and commercial buildings		Sudan
Sector: Solid waste and waste-water disposal		
Subsector: Material recycling		
End use/description: Waste-water treatment		
1 Pilot project for the treatment of municipal waste water and its recycling (USD 2,500,000)		Democratic People's Republic of Korea
2 Sequestration of methane from the treatment of waste water		El Salvador
Subsector: Methane recovery		
End use/description: Solid waste disposal		
1 Climate change early action technology measures: methane recovery from landfill		Egypt
2 Composting (USD 1,250,000)		Madagascar
3 Composting and landfilling with gas recovery and flaring		Lebanon
4 Composting and landfilling with gas recovery and utilization		Lebanon
5 Development of sewage treatment facilities		Maldives
6 Integrated household waste management and process (USD 4,500,000)		Kenya
7 Landfill gas recovery from solid waste site of Addis Ababa city		Ethiopia
8 Landfilling with gas recovery and flaring		Lebanon
9 Landfilling with gas utilization		Lebanon
10 Promote proper solid waste management with methane recovery		Sri Lanka
11 Recovery of biogas from solid waste disposal sites in Mediouna and Marrakesh	6 121 equivalent (2001–2020)	Morocco
12 Reduction of methane emissions to the atmosphere through commercial utilization of landfill methane		Egypt
13 The treatment of municipal solid waste and its recycling (USD 2,000,000)		Democratic People's Republic of Korea
14 Waste management in Nouakchott village (USD 12,593,000)	59.97 (2003–2010)	Mauritania

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO ₂)	Country
End use/description: Waste-water treatment		
1 Generation of electricity using natural gas from the Rio Azul landfill	76.44 equivalent per year	Costa Rica
2 Implementation of an integrated waste management system		Maldives
3 Recovery of biogas from waste-water treatment plants in Benslimane and Grand Agadir	834 equivalent (2001–2020)	Morocco
4 Waste-water treatment in coffee production		Costa Rica
Subsector: Source reduction		
1 Collection and transport of solid waste in major cities (USD 9,000,000)		Mongolia
2 Integrated waste management		Ethiopia
End use/description: Composting		
1 Composting (USD 2,800,000)		Djibouti
2 Composting and smart selection of materials for use		Grenada
3 Composting of solid waste		Seychelles
4 Composting solid waste of Addis Ababa city		Ethiopia
5 Promotion of composting for biogas production		Chad
6 Reducing greenhouse gas emissions from burning of waste through composting (USD 1,780,000)	553	Gambia
End use/description: Recycling		
1 Promotion of waste reuse and recycling (USD 1,500,000)		Kenya
2 Recycling of solid waste		Seychelles
3 Recycling, reuse and smart selection of materials for use		Grenada
4 Recycling/sustainable management of waste in order to mitigate CH ₄ emissions by setting up a 100 t/day capacity plant		Central African Republic
Sector: Transport		
Subsector: Alternative energy sources		
1 Electrification and/or use of liquefied petroleum gas to power railway		Algeria
2 Energy substitution in the transport sector		Algeria
3 Environmental strategy for energy: hydrogen fuel cells buses for Brazil – ESE/HB		Brazil
4 Introduction of electric vehicles, trolleys and trains		El Salvador
5 Producing hydrogen from renewable energy to power fuel cell vehicles, e.g., cars and buses		Barbados
6 Promote the use of gasohol (blending of ethanol with gasoline) for cars		Ethiopia
7 Promoting the use of fuels with low carbon content (fuel switching)		Ethiopia
8 Substitution of conventional fuels with natural gas and liquefied petroleum gas		El Salvador
9 Using compressed natural gas in motor vehicles		Ecuador
Subsector: Energy efficiency improvements		
End use/description: Improve fleet management		
1 Adopt an appropriate road pricing system		Sri Lanka
2 Development of a sustainable inter-island sea-based mass transport system		Maldives
3 Diagnostic centres for vehicle engines	4 187 equivalent (2001–2020)	Morocco
4 Implementing measures to reduce the atmospheric pollution caused by the transport sector		Mali
5 Improve efficiency of the transport system in Nigeria		Nigeria
6 Improve traffic management systems through the use of information technology		Sri Lanka
7 Improving the efficiency of the transport system in Ghana		Ghana
8 Improving vehicle efficiency by carrying out maintenance, inspections and training		Ethiopia
9 Integrate bus–rail operation through proper network planning		Sri Lanka
10 Introduce a suitable vehicle inspection and monitoring programme		Sri Lanka
11 Limit import of used vehicles, reinforce technical inspections, encourage use of public transport (USD 54,000,000)	10 932	Mauritania
12 Nairobi city traffic flow improvement project (USD 210,000)		Kenya
13 Promoting environmentally friendly transport modes such as bicycles		Ethiopia
14 Promotion of the use of smaller cars through tax differentiation based on engine size		Ethiopia
15 Removing barriers to energy use efficiency in the urban transport system (USD 1,200,000)		Kenya

Project title (and cost when applicable)	Estimated emission reduction/ sequestration (kt CO₂)	Country
16 Technical inspections in the transport sector	23 800	Peru
End use/description: Improve speed management		
1 Improving urban traffic		Ethiopia
End use/description: Vehicle energy intensity reduction		
1 Climate change early action technology measures: retrofitting two-stroke engines		Egypt
2 Conversion of taxis to liquefied petroleum gas	500	Peru
3 Conversion of vehicles from normal fuel to liquefied petroleum gas		Colombia
4 Energy efficiency in the transport sector		Côte d'Ivoire
5 Establish level of vehicular emissions for purposes of adequate planning (USD 48,000)		Ghana
6 Fuel efficiency in transport		Botswana
7 Introduction of technical enhancements in vehicles		El Salvador
8 Modernization and technical upgrading of the vehicle fleet		El Salvador
9 Modernization and technical upgrading of vehicle park		El Salvador
10 Phase out old vehicles	3 700	Peru
11 Planning and implementing a programme for technical testing of vehicles to reduce fuel consumption		Niger
12 Removing barriers to adoption of four-stroke engine for two-wheelers		Lao People's Democratic Republic
13 Vehicle fuel efficiency improvement (USD 900,000)		Mongolia
Subsector: Infrastructure changes, modal shift and fleet management		
1 Energy conservation in the transport sector (redesign the construction of roads and rehabilitation of existing roads)		Sudan
End use/description: Traffic reduction		
1 Implementation of an integrated transport system in the large metropolitan areas of Costa Rica		Costa Rica
2 Improvement of urban and inter-urban road networks		El Salvador
3 Increase use of mass public transport		El Salvador
4 Mitigation of greenhouse gases through the promotion of public transport		Benin
5 Promotion of use of bicycles		El Salvador
6 Rail infrastructure improvement		Namibia
End use/description: Transport energy intensity reduction (fleet management)		
1 Bicycle paths	23 900	Peru
2 Expansion of public transport infrastructure		Ethiopia
3 Railway network enhancement (between USD 52,836 million and USD 111,888 million)		Ghana
4 Reopening of the railway services to reduce the use of fuels on the roads		Costa Rica

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