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

Compilation and synthesis of initial national communications

**List of projects submitted by Parties not included in Annex I to
the Convention in accordance with Article 12, paragraph 4,
of 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 15 March 2005.

I. 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 and an estimate of the consequent benefits. In accordance with this Article, the Conference of the Parties, 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).

II. Approach and scope of the note

2. The secretariat has reviewed the relevant sections of all 122 initial national communications submitted by non-Annex I Parties as at 15 March 2005 with a view to compiling the list of project proposals. The 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. This note contains an updated list of 469 project proposals identified as project concepts and profiles

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

III. 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	Estimated emission/ reduction sequestration (kt CO ₂)	Cost (thousands of USD)	Country	Year of submission
Sector: Agriculture				
Subsector: Adopt manure management practices for CH₄ collection				
1 Manure management using biodigesters			Ecuador	2000
2 Research into low-methane-emitting agriculture systems			Chad	2001
Subsector: Expand biofuel production as carbon offset				
1 Biogas programme in the agriculture and livestock sectors	2.68	60	Ecuador	2000
Subsector: Improve efficiency of use of nitrogen fertilizer				
1 Adopting appropriate fertilizer application			Ethiopia	2001
2 Appropriate and efficient use of fertilizers			El Salvador	2000
3 Improve efficiency of use of nitrogen fertilizer			Mauritania	2002
Subsector: Improve management of ruminant animals				
1 Animal breeding and use of biodigesters for the production of energy			Mali	2000
2 Better management and improvement of pastures		65 400	Madagascar	2004
3 Diet enhancement of livestock using management programmes			Ecuador	2000
4 Improve livestock management (lower enteric fermentation and manure management)		80 000	Mauritania	2002
5 Improvement of livestock diet			Chad	2001
6 Improvement of the diet of cattle by means of grazing land management			Ecuador	2000
7 Increasing livestock productivity through improved nutrition, strategic supplementation, and treatment of forages to improve digestability and through improved genetic characteristics			Ethiopia	2001
8 Information, education and communication of greenhouse gas emission reduction in agriculture and cattle breeding			Burundi	2001
9 Manure management through biodigesters			Ecuador	2000
10 Programme on livestock and carbon uptake			Nicaragua	2001
11 Promoting mixed crop livestock farming where appropriate			Ethiopia	2001
12 Promoting use of manure management systems			Ethiopia	2001

Project title	Estimated emission/ reduction sequestration (kt CO ₂)	Cost (thousands of USD)	Country	Year of submission
13 Reduction of methane emissions in livestock by introducing diet changes			Costa Rica	2000
14 Research and development on technologies aiming to reduce greenhouse gas emissions in agriculture and cattle breeding			Burundi	2001
Subsector: Improve rice production practices				
1 Improve cultural practices and introduce new technologies		880 000	Madagascar	2004
2 Improve water and fertilizer management		70 000	Mauritania	2002
3 Improve water management in irrigated rice cultivation			Mali	2000
4 Improved rice production practices			Guyana	2002
5 Irrigation management of wetland rice fields to reduce methane emission		5 025	Viet Nam	2003
6 Use and management of rice crop wastes			Ecuador	2000
Subsector: Increase carbon storage in agricultural soils				
1 Climate change mitigation through development of carbon sinks		600	Kenya	2002
2 Post-harvest management to avoid the burning of wastes and the preservation of farming soils			El Salvador	2000
3 Programme on carbon uptake			Nicaragua	2001
4 Promoting sustainable agriculture			Ethiopia	2001
5 Reduction in savannah burning			Chad	2001
6 Rehabilitation of overgrazed watering points and long-term settlement areas and redistribution of manure that is accumulated near these settlements			Ethiopia	2001
7 The use of conservation tillage techniques to sequester carbon in agricultural soils			Ethiopia	2001
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	2003
2 Recovery of liquefied petroleum gas (LPG) from associated natural gas			Ecuador	2000
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	2000
2 Alkylation unit		30 000	Jordan	1997

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
3 Brazilian wood BIG-GT demonstration project/Integrated wood gasification and electricity generation system (WBP/SIGAME)			Brazil	2004
4 Coal gasification			Botswana	2001
5 Co-boiler for the fluid catalytic cracking unit		2 740	Jordan	1997
6 Construction of 13 cogeneration plants, with a total installed capacity of around 110MW			Brazil	2004
7 Construction of a 60 MW cogeneration plant			Barbados	2001
8 Continuous catalytic informer		85 000	Jordan	1997
9 Crude oil distillation unit		2 500	Jordan	1997
10 Expansion of distillation capacity		80 000	Jordan	1997
11 Gasification		225 000	Jordan	1997
12 Heat recovery from sulphuric acid plant/Jordan Phosphate Mining Company		26 000	Jordan	1997
13 Hydrocracking		100 000	Jordan	1997
14 Hydro-desulphurization for diesel		60	Jordan	1997
15 Improve transmission and distribution system to bring down the current energy losses			Sri Lanka	2000
16 Improvement of baseline scenarios for the development and selection of appropriate policies and measures to mitigate climate change			Chad	2001
17 Increase efficiency of thermal plants through technological innovation			El Salvador	2000
18 Introduction of clean coal technology			Democratic People's Republic of Korea	2004
19 Introduction of combined cycle in steam thermal plants			El Salvador	2000
20 Isomerization unit		30 000	Jordan	1997
21 Merox upgrade		1 000	Jordan	1997
22 Modern fluid catalytic cracker		200 000	Jordan	1997
23 Paper sludge and solid waste		AUD 9 000 000	Indonesia	1999
24 Retrofitting existing power plants			Guyana	2002
25 Sulphur recovery plant		5 000 to 10 000	Jordan	1997
Subsector: Switching to low-carbon fossil fuels				
1 Assessment of greenhouse gas mitigation options in the energy sector			Dominican Republic	2003

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
2 Electric power generation using residual natural gas			Ecuador	2000
3 Electricity generation using residual natural gas	53/year	35 000	Ecuador	2000
4 Introduction of natural gas in diesel and fuel oil thermal plants			El Salvador	2000
5 Natural gas substitution of coal	7 800		Peru	2000
6 Natural gas substitution of diesel	6 000		Peru	2001
7 Piping of natural gas from the proposed West Africa Gas Pipeline to and within some urban areas of Ghana		480 000	Ghana	2001
8 Reducing CO ₂ emissions from fuelwood consumption through large-scale introduction of liquefied petroleum gas	782		Gambia	2003
9 Support construction of a gas pipeline from Mexico in order to promote the use of natural gas in Honduras			Honduras	2000
10 Technical upgrading and change of fuel in two thermal plants			El Salvador	2000
11 Two additional gas pipelines will substitute coal, residual oil and diesel	2 400		Peru	2001
Subsector: Switching to renewable sources of energy				
1 16 MW wind turbine farms at good wind sites in northern Barbados			Barbados	2001
2 Biogas programme for the country's agricultural and livestock sectors			Ecuador	2000
3 Construct wind power stations for Coto Island in Quang Ninh province		200	Viet Nam	2003
4 Construction of wind farms			Barbados	2001
5 Demonstration project for grid-connected renewable energy technologies and their commercial and economic potential			Antigua and Barbuda	2001
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	2001
7 Development of renewable energy		50 000	Viet Nam	2003
8 Development of renewable energy	11 091 equivalent (2001–2020)		Morocco	2001
9 Dissemination of solar, wind and biogas energy technology			Ethiopia	2001
10 Electric generation using renewable energy sources: solar, small hydro, biomass, wind			El Salvador	2000
11 Encouraging utilization of renewable energy in rural areas		460	Viet Nam	2003
12 Establishment of a renewable energy centre			Barbados	2001

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
13 Evaluation of renewable energy sources for inland locations			Guyana	2002
14 Generation of energy from Botswana Meat Commission abattoir waste			Botswana	2001
15 Geothermal hot water supply: Hippodrome district geothermal hot water supply project		860	Georgia	1999
16 Hydroelectricity substitutes diesel	8 500		Peru	2001
17 Hydroelectricity substitutes natural gas	2 300		Peru	2001
18 Power generation options for Botswana from mixing and hybrids of renewable energy resources (solar, wind and waste)			Botswana	2001
19 Promoting the use of renewable energy			Ethiopia	2001
20 Promotion of renewable energies: solar, wind and micro-hydro			Chad	2001
21 Solar collectors	1 000		Peru	2001
22 Use renewable sources of energy to satisfy energy demand by 2010	61.49/year		Costa Rica	2000
23 Wind turbines	900		Peru	2000
End use/description: Biomass/biogas				
1 10 MW waste combustion plant			Barbados	2001
2 Biogen Project, use of wood waste and waste of African palm to produce electricity			Honduras	2000
3 Electricity generation using wood waste in Ocotal area			Nicaragua	2001
4 Phytothermal energy production		880	Ghana	2001
5 Production of electricity using bamboo			Honduras	2000
6 Promoting sustainable biomass energy use in rural areas to reduce CO ₂ emissions			Morocco	2001
7 Promotion of application of biogas technology		750	Kenya	2002
8 Replacement of wood-fuel boilers for tea drying		2 000	Kenya	2002
9 Using biogas as fuel to mitigate greenhouse gas emissions in rural areas		1 500	Viet Nam	2003
10 Using biomass as a substitute for fossil fuels through the production of woody biomass			Ethiopia	2001
11 Utilization of organic residues from food processing plants for energy generation			Botswana	2001
End use/description: Geothermal and ocean energy				
1 2 MW of solar photovoltaic system distributed around the island			Barbados	2001
2 2 MW wave power plant			Barbados	2001
3 3 MW ocean thermal energy conversion plant			Barbados	2001
4 Expand the use of geothermal energy in electricity generation			El Salvador	2000

Project title	Estimated emission/reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
5 Exploitation of geothermal energy in Viet Nam		400	Viet Nam	2003
6 Exploration regarding geothermal energy in Jordan		1 400	Jordan	1997
7 Geothermal hot water supply: Tbilisi geothermal hot water supply project		30 800	Georgia	1999
8 Geothermal hot water supply: Zugdidi geothermal heat supply project		15 000	Georgia	1999
9 Identification of renewable energy sources (geothermal-feasibility study)		400	Comoros	2003
10 Production of electric energy using geothermal resources	4 496	88 000	Djibouti	2002
End use/description: Hydropower				
1 Action programme for energy supply using hydro dams			Niger	2000
2 Alternative/renewable energy sources for the outer islands of the Maldives			Maldives	2001
3 Assessing small-scale hydropower potential and demonstration project in combination with dissemination of electric cooking stoves			Lao People's Democratic Republic	2000
4 Construction of mini-hydel turbine and generator factory		4 000	Democratic People's Republic of Korea	2004
5 Construction of Mpanda hydropower unit			Burundi	2001
6 Construction of Nachtigal and Memve-Ele hydro stations	890 yearly	XAF 186 billion	Cameroon	2005
7 Construction of small hydroelectric plants			El Salvador	2000
8 Energy generation using small hydroelectric systems	8.8/year	3 200	Ecuador	2000
9 Energy generation using small hydropower plants			Ecuador	2000
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	2000
11 Increase hydroelectric and geothermal resources			El Salvador	2000
12 Increasing the number of hydropower units	4 902 equivalent (2001–2020)		Morocco	2001
13 Install mini- and micro-hydropower generation for electricity in high-potential areas of Sudan			Sudan	2003
14 Komarindi/Lungga hydropower project: Renewable energy technologies for the capital city of Solomon Islands, peri-urban areas and industries			Solomon Islands	2004
15 Micro-hydro: renewable energy technologies for rural communities			Solomon Islands	2004

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
16 Mini-hydro: renewable energy technologies for nine provincial centers			Solomon Islands	2004
17 Pilot programme for rural electrification using small hydropower plants			Nicaragua	2001
18 Removal of barriers to the development of hydroenergy			Haiti	2002
19 Renovation and extension of Matandani mini-hydropower station in Mwanza		600	Malawi	2003
20 Replacement of diesel generators by hydropower, mainly in urban centres			Ethiopia	2001
21 Siltation reduction along Shire River for hydropower enhancement and greenhouse gas emission reduction		1 000	Malawi	2003
22 Small hydro-energetics: Abasha hydropower plant rehabilitation project		1 000	Georgia	1999
23 Small hydro-energetics: Intsoba hydropower plant rehabilitation project		850	Georgia	1999
24 Small hydro-energetics: Martkopi hydropower plant rehabilitation project		750	Georgia	1999
25 Small hydro-energetics: Misaktsieli hydropower plant rehabilitation project		2 300	Georgia	1999
26 Small hydro-energetics: Stori hydropower plant project		8 400	Georgia	1999
End use/description: Solar energy				
1 Action programme for energy supply using solar energy			Niger	2000
2 Building houses with efficient lighting and solar energy			El Salvador	2000
3 Decentralized energy supply through solar home systems in rural households			Lao People's Democratic Republic	2000
4 Decentralizing electrification by photovoltaic systems			Burundi	2001
5 Displacement of diesel generators by solar home systems	130	2 450	Gambia	2003
6 Electricity supply sector: removing barriers for implementing renewable energy (solar and wind)			Lebanon	1999
7 Encouraging the use of solar water heaters	728 equivalent (2001–2020)		Morocco	2001
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	2004
9 Irrigation using photovoltaic systems			Mauritania	2002
10 Large-scale power generation from solar energy			Botswana	2001
11 Photovoltaic electrification in rural areas			Côte d'Ivoire	2000
12 Power supply by photovoltaic systems to remote villages		3 500	Jordan	1997
13 Promoting the use of photovoltaic equipment	161	943	Mauritania	2002
14 Promotion of solar-based rural electrification		1 200	Kenya	2002

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
15 Reducing wood consumption by promoting energy-saving technologies such as solar lighting equipment			Mali	2000
16 Rehabilitation of the Regional Centre for Solar Energy (CRES)			Mali	2000
17 Reverse osmosis water desalination (ROWD) with renewable energy hybrid system in remote areas		2 400	Jordan	1997
18 Rural electrification with photovoltaic solar systems			Ecuador	2000
19 SALT-gradient solar pond pilot plant		633	Jordan	1997
20 Solar and wind energy resources assessment and mapping		600	Mongolia	2001
21 Solar energy project for communities		115	Ghana	2001
22 Solar photovoltaic: renewable energy technologies for rural communities			Solomon Islands	2004
23 Tapping solar energy for water heating in the residential sector			Ecuador	2000
24 Use of solar energy for water heating in the residential setor	73	3 900	Ecuador	2000
End use/description: Wind				
1 Action programme for energy supply using wind energy			Niger	2000
2 Electricity generation using wind energy		12 655 equivalent (2001–2020)	Morocco	2001
3 Electricity supply sector: removing barriers to implementing renewable energy (solar and wind)			Lebanon	1999
4 Honduras ZOND project. A 60 MW wind power station to be installed in the area of Tegucigalpa			Honduras	2000
5 Installation of wind generators in Nouadhibou		4 150	Mauritania	2002
6 Substitution of thermic plants by a 25 MW wind energy unit	56 per year		Colombia	2001
7 Technologies required for implementation of mitigation policy: electric and mechanical equipment for wind power plants		11 000	Georgia	1999
8 Use of aeolian energy			Mexico	1997
9 Wind power: Karenergo wind power plant project		5 000	Georgia	1999
Sector: Forest				
Subsector: Conservation forests				
1 Application of proper resources management (existing forest reserves and rangeland sites)			Sudan	2003

Project title	Estimated emission/ reduction/ sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
2 Conservation and management of ecosystems in the Uraba zone	21 920 in 30 years		Colombia	2001
3 Conservation of natural forests in the Tinigua and Macarena zones	15 289 in 30 years		Colombia	2001
4 Conversion of livestock farms to agroforestry systems in the Puerto Carreño zone	5 034 in 25 years		Colombia	2001
5 Developing and restoring gallery forests along river banks			Ethiopia	2001
6 Forest conservation and protection		3 870	Madagascar	2004
7 Forest conservation and reforestation in the Medio Atrato zone	1 193		Colombia	2001
8 Forest conservation and reforestation in the Purace zone	24 531 in 30 years		Colombia	2001
9 Forest conservation and reforestation in the Quindio zone	9 146 in 30 years		Colombia	2001
10 Forest conservation in the Bucaramanga Corporation's zone	7 408 in 25 years		Colombia	2001
11 Forest conservation in the Guerrero zone	359		Colombia	2001
12 Forestry: Tbilisi Dendrological Park restoration project		230	Georgia	1999
13 Improve the conservation and management of forest resources		500	Comoros	2003
14 Initiate new afforestation and reforestation programmes			Ethiopia	2001
15 Management of protective forests of the watersheds of the canton of Puyango			Ecuador	2000
16 Reforestation of degraded lands			Namibia	2002
17 Reforestation of some of the main watersheds in the country			El Salvador	2000
18 Rehabilitation and reforestation of the Artibonito River basin and other areas of the Border Region			Dominican Republic	2003
19 Rehabilitation of degraded forests			Ethiopia	2001
20 Restoration and protection of the tropical humid forest in the area of Esperanza Verde, Rio San Juan			Nicaragua	2001
21 Restoration of forests		2 500	Madagascar	2004
Subsector: Forest practices/goals				
1 Afforestation and reforestation programmes for waste degraded rangelands			Sudan	2003
2 Afforestation with exotic species	9 900		Peru	2001
3 Afforestation with indigenous species	4 300		Peru	2001

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
4 Capacity-building of seed production for sustainable forest development		3 500	Democratic People's Republic of Korea	2004
5 Changing cultivars (pijuayo for palmito)			Peru	2001
6 Coffee cultivation			Peru	2001
7 Conservation and sustainable management of natural areas			El Salvador	2000
8 Enhancement of Ecuador's national system of protected areas	25 609		Ecuador	2000
9 Establishment of silvopastoral systems in the Gaumote area	477		Ecuador	2000
10 Forest management	2 400		Peru	2001
11 Forest management in the Calamar zone	35 012 in 25 years		Colombia	2001
12 Forestry: afforestation project of Red Bridge environs		250	Georgia	1999
13 Forestry: Nabadkhevi forest rehabilitation project		270	Georgia	1999
14 Forestry: reforestation project of Kaspi District		350	Georgia	1999
15 Hydrologic rehabilitation and carbon uptake project for the sustainability of coffee production in the Matagalpa area			Nicaragua	2001
16 Improvement of timber harvesting techniques			Sudan	2003
17 Improving forest management practices			Ethiopia	2001
18 Joint forestry project to offset greenhouse gas emissions		5 000	Ghana	2001
19 Management of 330,000 ha of forests		14 220	Mauritania	2002
20 Management of forests in order to slow down rates of deforestation			Chad	2001
21 Management of forests in the Puyango area	29		Ecuador	2000
22 Management of natural resources in wet zones		25 900	Mauritania	2002
23 Planting protective forest in the watershed of Ngan Sau, Ngan Pho Rivers		7 010	Viet Nam	2003
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	2000
25 Productive forest plantations in the canton of Bolivar			Ecuador	2000
26 Protected areas project			Costa Rica	2000
27 Protection of forests to avoid deforestation			El Salvador	2000

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
28 Protection/preservation of existing forests from losses caused by deforestation and other practices			Ethiopia	2001
29 Reforestation and afforestation		5 350	Democratic People's Republic of Korea	2004
30 Reforestation and management of plains and small catchment areas		2 205	Djibouti	2002
31 Reforestation of 30,000 ha per year			Burundi	2001
32 Reforestation of 600 ha (between 2003 and 2006)			Central African Republic	2003
33 Reforestation of mountain regions		1 095	Djibouti	2002
34 Reforestation of several areas using trees able to adapt to difficult ecological conditions			Chad	2001
35 Reforestation programmes in Assaba, Gorgol, Brakna, Trarza, Guidimakha, Hodh el Gharbi, Hodh Chargui and Tagant		688	Mauritania	2002
36 Rehabilitation and sustainable management practices for degraded rangelands			Sudan	2003
37 Rehabilitation of degraded forest areas		1 500	Ghana	2001
38 Replication of a reforestation project in other regions of the country			Mali	2000
39 Socio-economic development of rural communities in the Caribbean zone	3 818 in 25 years		Colombia	2001
40 Supporting the reforestation master plan	7 147 equivalent (2001–2020)		Morocco	2001
41 Sustainable management of the Chachi native forest in the Cayapas river	8		Ecuador	2000
42 The use of remote sensing for monitoring forest cover changes and for establishing base-line data			Ghana	2001
Subsector: Fuelwood conservation and substitution				
1 Creation of demonstrations for establishment and management of firewood forest		1 250	Democratic People's Republic of Korea	2004
2 Replacing firewood and kerosene with liquefied petroleum gas and solar energy in the residential sector			El Salvador	2000

Project title	Estimated emission/ reduction sequestration (kt CO ₂)	Cost (thousands of USD)	Country	Year of submission
3 Sensitize charcoal makers about new techniques and promote more efficient charcoal kilns in order to minimize pressure on forest		200	Central African Republic	2003
4 Substitution of firewood by other energy resources			Chad	2001
Subsector: Production forestry/agroforestry				
1 Agroforestry			Namibia	2002
2 Agroforestry projects in 12 areas that have degraded soils			Honduras	2000
3 Establishment of agroforestry systems in the Carmen area	1 750		Ecuador	2000
4 Forest plantation on sandy soil at the coast of southern central Viet Nam		11 500	Viet Nam	2003
5 Forestry plantations in the Balzar area	477		Ecuador	2000
6 Forestry plantations in the Bolivar area	143		Ecuador	2000
7 Green belt of Guayaquil city	11		Ecuador	2000
8 Management of natural forests by communities		4 829	Gambia	2003
9 Private forestry project			Costa Rica	2000
10 Promoting agroforestry			Ethiopia	2001
11 Promotion of agroforestry and the prevention of forest fires			El Salvador	2000
12 The development of agroforestry	4 613 equivalent (2001–2020)		Morocco	2001
Subsector: Use of recycled and more efficient wood products				
1 Enhancement of the use of treatments for the better preservation of wood products			Burundi	2001
Sector: Industrial				
Subsector: Cogeneration and thermal cascading				
1 Cogeneration in sugar cane production			Colombia	2001
2 Cogeneration in the textile industry		9 equivalent per year	Colombia	2001
3 Development of cogeneration		4 002 equivalent in the period 2001–2020	Morocco	2001
4 Gasification of sugar cane bagasse for energy generation			Colombia	2001

Project title	Estimated emission/ reduction/ sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
5 Research on cogeneration technology from biomass fuel		1 350	Viet Nam	2003
Subsector: Energy efficiency gains				
1 Energy auditing in the industrial sector			Sudan	2003
2 Energy conservation and saving in small and medium-sized enterprises		1 500	Viet Nam	2003
3 Energy efficiency and the reduction of greenhouse gases in the industrial sector			Algeria	2001
4 Energy saving in industry		3 300	Viet Nam	2003
5 Industrial boiler efficiency improvement		12 340	Democratic People's Republic of Korea	2004
6 Optimization of combustion in boilers for steam generation in the industrial sector			Ecuador	2000
7 Regulation of industrial performance	60 yearly	XAF 250 billion	Cameroon	2005
8 Technical enhancements by renewing industrial equipment			El Salvador	2000
9 The development of demand-side management programmes in the industrial sector			El Salvador	2000
Subsector: Fuel switching				
1 Replacing biomass fuel with higher-energy-density fuels in sectors of household, bakeries and brick-making industry			Sudan	2003
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	2000
3 The introduction of natural gas			El Salvador	2000
4 The introduction of technological innovations using renewable and cleaner energy sources			El Salvador	2000
Subsector: Introducing new technologies and processes				
1 Coal bed methane investigations			Botswana	2001
2 Demonstration and introduction of smokeless and high-efficiency coal bracketing technology		15 000	Mongolia	2001
3 Desalination of water using wind energy in Tan-Tan	292 equivalent (2001–2020)		Morocco	2001
4 Desalination water plant for San Andres	5 equivalent per year		Colombia	2001
5 Develop an inventory on emissions from different industries			Sri Lanka	2000

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
6 Develop mechanisms to reduce greenhouse gas emissions from different industries			Sri Lanka	2000
7 Developing appropriate agricultural technologies to mitigate climate change		1 020	Malawi	2003
8 Drying sugar beet by using superheated steam in the Doukkala sugar refineries	350 equivalent (2001–2020)		Morocco	2001
9 Efficiency improvement and conversion of industrial boilers	2 100		Peru	2001
10 Electricity generation from biogas in Bogota	12 218 equivalent in 20 years		Colombia	2001
11 Electricity generation from biogas in Tumaco	5 equivalent per year		Colombia	2001
12 Electricity generation from biogas in Tunja	11 equivalent per year		Colombia	2001
13 Energy auditing in industries			Burundi	2001
14 Exploring potential markets for natural gas			Barbados	2001
15 Improved energy efficiency in brick manufacture	54 339 equivalent per year		Colombia	2001
16 Improved energy efficiency in coke production	65 equivalent per year		Colombia	2001
17 Improved energy efficiency in juggery production	277 equivalent per year		Colombia	2001
18 Industrial sector: efficiency improvements to boilers and furnaces via replacement and fuel switching options			Lebanon	1999
19 Industrial sector: motor-driven system improvement and replacement			Lebanon	1999
20 Modification of wet-type cement mills to dry-type mills in the Mongolian cement industry		20 000	Mongolia	2001
21 Partial substitution of clinker by fly ash from thermal plants	6 000 equivalent (2001–2020)		Morocco	2001
22 Project to increase energy efficiency in Kaspi cement plant		1 000	Georgia	1999
23 Research on agricultural by-products, vegetable oils and alcohol as alternative sources of energy			Mali	2000

Project title	Estimated emission/ reduction/ sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
24 Setting up of manufacturing facilities to produce high-purity silicon for the computer chip and solar photovoltaic industries			Barbados	2001
25 Technological innovations in the production of cement, lime, etc.			El Salvador	2000
26 Technological upgrading in cement industry			El Salvador	2000
27 Technology characterization inventory to support technology baselines and options for greenhouse gas emission reduction			Nigeria	2003
28 Use of humid phosphate instead of dry phosphate in the Jorf Lasfer plant	894 equivalent (2001–2020)		Morocco	2001
29 Use of solar distillation as a source of fresh water for the outer islands and Male			Maldives	2001
Subsector: Material substitution				
1 Partial substitution of black phosphate by white phosphate in Youssoufia	1 981 equivalent (2001–2020)		Morocco	2001
2 Promotion of the substitution of wood with non-metallic mineral material for construction usage		860	Comoros	2003
3 Use of alternative materials for clinker in cement production			Costa Rica	2000
4 Valorization of waste as energy source	1.02/year	12 360	Djibouti	2002
Subsector: Process improvements				
1 Cement industry: conservation and preheating in pyroprocessing and improvements in the grinding process			Lebanon	1999
2 Combustion optimization in boilers in the industrial sector	21	1 500	Ecuador	2000
3 Commission a study on energy recovery from waste			Sri Lanka	2000
4 Economic and environmental benefits of energy efficiency and conservation at the Barnangwato Concession Limited copper/nickel mine			Botswana	2001
5 Energy demand side management programme for Mongolian industry		500	Mongolia	2001
6 Heat recovery in the Safi and Jorf Lasfer chemical plants	4 690 equivalent (2001–2020)		Morocco	2001
7 Improvements to the La Sierra thermic power plant			Colombia	2001
8 Increased use of natural gas in the industrial sector	15 354 equivalent (2001–2020)		Morocco	2001

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
9 Rational use of energy in the industrial sector	10 920 equivalent (2001–2020)		Morocco	2001
10 Recover liquefied petroleum gas from natural gas	686/year	67 000	Ecuador	2000
11 Reduction of losses in the energy sector	0.385/year	128 000	Ecuador	2000
12 Rehabilitation of mining sites in Khouribga	264 equivalent (2001–2020)		Morocco	2001
13 Replacement of boilers in the industrial and tertiary sectors	450 equivalent (2001–2020)		Morocco	2001
14 Use of wastes as energy source for clinker in cement production			Costa Rica	2000
Sector: Residential, commercial and institutional buildings				
Subsector: Building equipment				
1 Energy saving in the tertiary and residential sectors		XOF 800 million	Burkina Faso	2002
End use/description: Cooking				
1 Developing project proposal for improved cooking stoves demonstration project			Lao People's Democratic Republic	2000
2 Dissemination of ecological stoves in the Pacific region of Nicaragua			Nicaragua	2001
3 Greenhouse gas abatement using improved cooking stoves to reduce fuelwood consumption	988	2 952	Gambia	2003
4 Improve biomass cooking stoves			Bangladesh	2002
5 Improvement of carbonization techniques			Burundi	2001
6 Improving carbonization efficiency		350	Mauritania	2002
7 Improving cooking stoves of the rural mountain communities		350	Viet Nam	2003
8 Improving/promoting energy efficiency and conservation, e.g., wide distribution of improved biomass and charcoal stoves			Ethiopia	2001
9 Introduction of improved stoves			Ethiopia	2001
10 Introduction of solar cookers in household and service sectors			Sudan	2003

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
11 Promoting biogas use for greenhouse gas emission reduction			Lao People's Democratic Republic	2000
12 Promoting the use of butane		5 250	Mauritania	2002
13 Promoting the use of improved stoves		400	Mauritania	2002
14 Promoting the use of improved stoves in rural and urban areas			Burundi	2001
15 Promoting the use of kerosene as cooking fuel		70	Mauritania	2002
16 Promotion and diffusion of improved ovens and practices to reduce the use of fuelwood	70	400	Ecuador	2000
17 Promotion and dissemination of improved stoves and firewood-saving practices			Ecuador	2000
18 Promotion of improved stoves and charcoal kilns			Namibia	2002
19 Recovery and use of sawing waste for briquette production			Burundi	2001
20 Reduce greenhouse gas emissions by the promotion of improved biomass cook stoves, and kerosene- and gas-powered cook stoves			Benin	2002
21 Semi-industrial production of improved cook stoves in aluminium			Côte d'Ivoire	2000
22 Substitution of fuelwood in rural areas through promotion and use of residues			Botswana	2001
23 Use of peat as cooking fuel		1 770	Mauritania	2002
End use/description: Energy management				
1 Adopt energy-efficient building codes and standardization and labelling of energy-consuming end-use equipment			Sri Lanka	2000
2 Connection of Nouakchott to the OMVS (Organisation pour mise en valeur du fleuve Sénégal) grid		10	Mauritania	2002
3 Construction of high efficiency thin fluorescent lamp factory		2 500	Democratic People's Republic of Korea	2004
4 Demonstration project to create a demand-side management programme unit			Antigua and Barbuda	2001
5 Development of a plan to decentralize electrification			Burundi	2001
6 Development of a system for assessing potential mitigation options			Cuba	2001
7 Electric power saving in the residential sector by substituting luminaries			Ecuador	2000
8 Electrification of the Vallée village		276	Mauritania	2002
9 Energy conservation programme			Barbados	2001

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
10 Energy saving in government buildings		20	Mauritania	2002
11 Establishment of a sustainable energy centre		2 000	Mongolia	2001
12 Establishment of an education campaign to promote the rational use of energy			Honduras	2000
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	2000
14 Financing the decentralization of rural electrification	604 equivalent (2001–2020)		Morocco	2001
15 Improvements in building insulation		500	Mongolia	2001
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	2000
17 Programme to conserve and efficiently use energy through seed fund			El Salvador	2000
18 Promotion of the adoption of energy efficient appliances	430 (2030–2040)	XAF 300 billion	Cameroon	2005
19 Rational use of energy in government buildings	350 equivalent (2001–2020)		Morocco	2001
20 Reconstruction and improvement of small-size boiler houses		5 000	Mongolia	2001
21 Reduction of power losses in the electricity sector			Ecuador	2000
22 Reorganization of the information system in the energy sector		170	Djibouti	2002
23 Residential and commercial energy efficiency building codes			Botswana	2001
24 Sustainable management of the domestic energy sector		20 000	Haiti	2002
End use/description: Heating				
1 Removing barriers to energy efficiency in municipal heat supply		211	Georgia	1999
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	2000
3 Use of solar energy for water heating in the residential sector	73	3 900	Ecuador	2000
End use/description: Lighting				
1 Building houses with efficient illumination and solar energy			El Salvador	2000
2 Carbon emission reduction through replacement of incandescent bulbs with compact fluorescent lamps		12 000	Mongolia	2001

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
3 Demonstration project to promote compact fluorescent lamps for residential use			Antigua and Barbuda	2001
4 Efficient lighting and alternative energy sources			Namibia	2002
5 Efficient lighting programme			Botswana	2001
6 Energy saving in the residential sector by lamps substitution	680	27 200	Ecuador	2000
7 Enhance energy saving in the residential sector by using compact fluorescent lamps			Costa Rica	2000
8 Incandescent lamps substitution by efficient lamps, oriented to the residential sector			Honduras	2000
9 Introduce compact fluorescent bulbs (150,000 annually)		XAF 4.5 billion	Cameroon	2005
10 Reducing CO ₂ emissions through use of compact fluorescent lamps in the government and commercial sectors			Lao People's Democratic Republic	2000
11 Rural electrification with solar photovoltaic systems	8.4	5 100	Ecuador	2000
12 Substitution of conventional lamps in Villavicencio	1 equivalent per year		Colombia	2001
13 Substitution of luminaries for other more efficient street lighting systems			Ecuador	2000
14 Substitution of photovoltaic lanterns for kerosene lighting			Ethiopia	2001
End use/description: Other appliances				
1 Promote the use of improved boilers in business establishments (hammams, ovens)	3 426 equivalent (2001–2020)		Morocco	2001
Subsector: Building thermal integrity				
1 Enhancing thermal performance of building envelopes: capacity-building project			Lebanon	1999
2 Enhancing thermal performance of building envelopes: market-based programme			Lebanon	1999
3 Introduction of new building techniques to improve natural ventilation and air-conditioning in household and commercial buildings			Sudan	2003

Project title	Estimated emission/ reduction sequestration (kt CO ₂)	Cost (thousands of USD)	Country	Year of submission
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		2 500	Democratic People's Republic of Korea	2004
2 Sequestration of methane from the treatment of waste water			El Salvador	2000
Subsector: Methane recovery				
End use/description: Solid waste disposal				
1 Climate change early action technology measures: methane recovery from landfill			Egypt	1999
2 Composting		1 250	Madagascar	2004
3 Composting and landfilling with gas recovery and flaring			Lebanon	1999
4 Composting and landfilling with gas recovery and utilization			Lebanon	1999
5 Development of sewage treatment facilities			Maldives	2001
6 Integrated household waste management and process		4 500	Kenya	2002
7 Landfill gas recovery from solid waste site of Addis Ababa city			Ethiopia	2001
8 Landfilling with gas recovery and flaring			Lebanon	1999
9 Landfilling with gas utilization			Lebanon	1999
10 Promote proper solid waste management with methane recovery			Sri Lanka	2000
11 Recovery of biogas from solid waste disposal sites in Mediouna and Marrakesh	6 121 equivalent (2001–2020)		Morocco	2001
12 Reduction of methane emissions to the atmosphere through commercial utilization of landfill methane			Egypt	1999
13 The treatment of municipal solid waste and its recycling		2 000	Democratic People's Republic of Korea	2004
14 Waste management in Nouakchott village	59.97 (2003– 2010)	12 593	Mauritania	2002

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
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	2000
2 Implementation of an integrated waste management system			Maldives	2001
3 Recovery of biogas from waste-water treatment plants in Benslimane and Grand Agadir	834 equivalent (2001–2020)		Morocco	2001
4 Waste-water treatment in coffee production			Costa Rica	2000
Subsector: Source reduction				
1 Collection and transport of solid waste in major cities		9 000	Mongolia	2001
2 Integrated waste management			Ethiopia	2001
End use/description: Composting				
1 Composting		2 800	Djibouti	2002
2 Composting and smart selection of materials for use			Grenada	2000
3 Composting of solid waste			Seychelles	2000
4 Composting solid waste of Addis Ababa city			Ethiopia	2001
5 Promotion of composting for biogas production			Chad	2001
6 Reducing greenhouse gas emissions from burning of waste through composting	553	1 780	Gambia	2003
End use/description: Recycling				
1 Promotion of waste reuse and recycling		1 500	Kenya	2002
2 Recycling of solid waste			Seychelles	2000
3 Recycling, reuse and smart selection of materials for use			Grenada	2000
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	2003
Sector: Transport				
Subsector: Alternative energy sources				
1 Electrification and/or use of liquefied petroleum gas to power railway			Algeria	2001
2 Energy substitution in the transport sector			Algeria	2001
3 Environmental strategy for energy: hydrogen fuel cells buses for Brazil – ESE/HB			Brazil	2004
4 Introduction of electric vehicles, trolleys and trains			El Salvador	2000

Project title	Estimated emission/ reduction sequestration (kt CO ₂)	Cost (thousands of USD)	Country	Year of submission
5 Producing hydrogen from renewable energy to power fuel cell vehicles, e.g., cars and buses			Barbados	2001
6 Promote the use of gasohol (blending of ethanol with gasoline) for cars			Ethiopia	2001
7 Promoting the use of fuels with low carbon content (fuel switching)			Ethiopia	2001
8 Substitution of conventional fuels with natural gas and liquefied petroleum gas			El Salvador	2000
9 Using compressed natural gas in motor vehicles			Ecuador	2000
Subsector: Energy efficiency improvements				
End use/description: Improve fleet management				
1 Adopt an appropriate road pricing system			Sri Lanka	2000
2 Development of a sustainable inter-island sea-based mass transport system			Maldives	2001
3 Diagnostic centres for vehicle engines			Morocco	2001
	4 187 equivalent (2001–2020)			
4 Implementing measures to reduce the atmospheric pollution caused by the transport sector			Mali	2000
5 Improve efficiency of the transport system in Nigeria			Nigeria	2003
6 Improve traffic management systems through the use of information technology			Sri Lanka	2000
7 Improving the efficiency of the transport system in Ghana			Ghana	2001
8 Improving vehicle efficiency by carrying out maintenance, inspections and training			Ethiopia	2001
9 Integrate bus–rail operation through proper network planning			Sri Lanka	2000
10 Introduce a suitable vehicle inspection and monitoring programme			Sri Lanka	2000
11 Limit import of used vehicles, reinforce technical inspections, encourage use of public transport	10 932	54 000	Mauritania	2002
12 Nairobi city traffic flow improvement project		210	Kenya	2002
13 Promoting environmentally friendly transport modes such as bicycles			Ethiopia	2001
14 Promotion of the use of smaller cars through tax differentiation based on engine size			Ethiopia	2001
15 Removing barriers to energy use efficiency in the urban transport system		1 200	Kenya	2002
16 Technical inspections in the transport sector	23 800		Peru	2001
End use/description: Improve speed management				
1 Improving urban traffic			Ethiopia	2001

Project title	Estimated emission/reduction/sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
End use/description: Vehicle energy intensity reduction				
1 Climate change early action technology measures: retrofitting two-stroke engines			Egypt	1999
2 Conversion of taxis to liquefied petroleum gas	500		Peru	2001
3 Conversion of vehicles from normal fuel to liquefied petroleum gas			Colombia	2001
4 Energy efficiency in the transport sector			Côte d'Ivoire	2000
5 Establish level of vehicular emissions for purposes of adequate planning		48	Ghana	2001
6 Fuel efficiency in transport			Botswana	2001
7 Introduction of technical enhancements in vehicles			El Salvador	2000
8 Modernization and technical upgrading of the vehicle fleet			El Salvador	2000
9 Modernization and technical upgrading of vehicle park			El Salvador	2000
10 Phase out old vehicles	3 700		Peru	2001
11 Planning and implementing a programme for technical testing of vehicles to reduce fuel consumption			Niger	2000
12 Removing barriers to adoption of four-stroke engine for two-wheelers			Lao People's Democratic Republic	2000
13 Vehicle fuel efficiency improvement		900	Mongolia	2001
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	2003
End use/description: Traffic reduction				
1 Implementation of an integrated transport system in the large metropolitan areas of Costa Rica			Costa Rica	2000
2 Improvement of urban and inter-urban road networks			El Salvador	2000
3 Increase use of mass public transport			El Salvador	2000
4 Mitigation of greenhouse gases through the promotion of public transport			Benin	2002
5 Promotion of use of bicycles			El Salvador	2000
6 Rail infrastructure improvement			Namibia	2002
End use/description: Transport energy intensity reduction (fleet management)				
1 Bicycle paths	23 900		Peru	2001

Project title	Estimated emission/ reduction sequestration (kt CO₂)	Cost (thousands of USD)	Country	Year of submission
2 Expansion of public transport infrastructure			Ethiopia	2001
3 Railway network enhancement		Between 52.836 million and 111.888 million	Ghana	2001
4 Reopening of the railway services to reduce the use of fuels on the roads			Costa Rica	2000
