

UNFCCC

FRAMEWORK CONVENTION ON CLIMATE CHANGE - Secretariat CONVENTION - CADRE SUR LES CHANGEMENTS CLIMATIQUES - Secrétariat

FCCC/WEB/2001/1

25 October 2001

## NATIONAL COMMUNICATIONS FROM PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION

# PROVISION OF FINANCIAL AND TECHNICAL SUPPORT

# <u>List of projects submitted by Parties not included in Annex I to the Convention</u> <u>in accordance with Article 12, paragraph 4, of the Convention</u>

## Note by the secretariat

# I. MANDATE

1. By its decision 12/CP.4, the Conference of the Parties 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) in accordance with Article 12.4 of the Convention (FCCC/CP/1998/16/Add.1).

## II. APPROACH

2. In response to the above mandate, the secretariat reviewed the relevant sections of all 55 initial national communications submitted by non-Annex I Parties as of 1 September 2001 with a view to compiling the list of projects.

3. Pursuant to decision 10/CP.2 (FCCC/CP/1996/15/Add.1) and Article 12.4 of the Convention, developing country Parties may, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs of the reduction of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.

4. In order to provide Parties with more frequent updates of the list of projects submitted in accordance with Article 12.4 of the Convention, the secretariat has compiled the information on these projects in a database. This information is posted on the secretariat's web site (www.unfccc.int/program/nai/ncweb0101.pdf) and hard copies are available on request.

I	No. Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
.1 S	Sector: Energy Demand Subsector: Residential, Commercial and Institutional Buildings End use/Description: Building thermal integrity				
1	Enhancing thermal performance of building envelopes: market-based programme			Lebanon	1999
2	2 Enhancing thermal performance of building envelopes: capacity-building project			Lebanon	1999
3	B Energy efficiency: building sector			Lebanon	1999
.1.2 E	End use/Description: Cooking				
1	Promotion and diffusion of improved ovens and practices to reduce the use of fuelwood	70	400	Ecuador	2000
2				Kiribati	1999
3				Lao PDR	2000
4				Lao PDR	2000
5				Nicaragua	2001
6	5 Use of liquefied petroleum gas (LPG) for domestic cooking			Seychelles	2000
.1.3 E	End use/Description: Energy Management				
1	Education and training solar school laboratories		85	Armenia	1998
2	2 Rural electrification with solar photovoltaic systems	8.4	5,100	Ecuador	2000
3				El Salvador	2000
4	Providing the public with a menu of architectural designs for residential buildings that take advantage of natural lighting and cooling			Grenada	2000
5				Grenada	2000
6	Adoption of standards for the certification of electronic and electrical equipment			Grenada	2000
7	7 Introduction of more efficient energy equipment in the residential sector			Grenada	2000
8	Programme of training and technical assistance for efficient use of energy			Grenada	2000

\* This information is compiled from all national communications submitted to the UNFCCC secretariat by 1 September 2001.

services sector     Grenada       10     Energy conservation programme in the public sector     Grenada       11     Establishment of an educational campaign of rational use of energy     Honduras       12     Electricity devices' labelling in order to inform consumers about the electricity     Honduras       13     Evaluation of the electricity generation system     Kiribati       14     Lower energy consumption through demand-side energy efficiency and conservation programmes and incentives     Senegal       16     Improvement of energy efficiency of buildings in Western Africa (Senegal and Côte     3,500       17     Incorporation of energy efficiency use and conservation extension service within the Energy Affairs Bureau     Seychelles       19     Energy Affairs Bureau     Seychelles       20     Energy Affairs Bureau     Seychelles       21     Adopt energy-efficient takeholders in the energy sector in the areas of energy efficiency and astandardization and labelling of energy     Sri Lanka       21     Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment     Zimbabwee       22     Investing in demand-side management in the electricity sector     Zimbabwee       32     Investing in demand-side management in the electricity sector     Zimbabwee	No	. Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
services sector       Grenada         10       Energy conservation programme in the public sector       Grenada         11       Establishment of an educational campaign of rational use of energy       Honduras         12       Electricity devices' labelling in order to inform consumers about the electricity consumption of different devices       Kribati         13       Evaluation of the electricity generation system       Kribati         14       Lower energy consumption through demand-side energy efficiency and conservation programmes and incentives       Senegal         16       Improvement of energy efficiency of substitute energy sources       Senegal         16       Improvement of energy efficiency measures and standards in building design       Seychelles         17       Incorporation of energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy audits for commercial and institutional buildings       Seychelles         20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Zimbabwe         22       Investing in demand-side management in the electricity sector       Zimbabwe	9	Information programme on efficient use of energy and energy diversification in the			Grenada	2000
11       Establishment of an educational campaign of rational use of energy       Honduras         12       Electricity devices' labelling in order to inform consumers about the electricity consumption of different devices       Honduras         13       Evaluation of the electricity generation system       Kribati         14       Lower energy consumption through demand-side energy efficiency and conservation programmes and incentives       Seregal         15       Demand management and promotion of substitute energy sources       Seregal         16       Improvement of energy efficiency of buildings in Western Africa (Senegal and Côte       3,500       Senegal         17       Incorporation of energy efficiency use and standards in building design       Seychelles       Seychelles         18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy audits for commercial and institutional buildings       Seychelles         20       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 its capability to assist different stakeholders in the electricity sector         21       Adopt energy-efficient building codes standardization and labelling of energy conservation and management in the electricity sector       Zimbabwe         21	-					
12       Electricity devices' labelling in order to inform consumers about the electricity consumption of different devices       Honduras         13       Evaluation of the electricity generation system       Kiribati         14       Lower energy consumption through demand-side energy efficiency and conservation programmes and incentives       Senegal         15       Demand management and promotion of substitute energy sources       Senegal         16       Improvement of energy efficiency measures and standards in building design       Seychelles         17       Incorporation of energy efficiency measures and standards in building design       Seychelles         18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy adifierent stakeholders in the energy sector in the areas of energy conservation and management       Sei Lanka is capability to assist different stakeholders in the energy sector in the areas of energy conservation and management       Zimbabwe         21       Adopt energy-efficient building codes standardization and labelling of energy conservation and management in the electricity sector       Zimbabwe         x.1.4       End use/Description: Heating       1       Rehabilitation of heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       20       Armenia         2       Demonstration heating and cooling systen implementation on the basi	10	Energy conservation programme in the public sector			Grenada	2000
consumption of different devicesKiribati13Evaluation of the electricity generation systemKiribati14Lower energy consumption through demand-side energy efficiency and conservation programmes and incentivesMauritius15Demand management and promotion of substitute energy sourcesSenegal16Improvement of energy efficiency of buildings in Western Africa (Senegal and Côte d'Ivoire)3,500Senegal17Incorporation of energy efficiency measures and standards in building designSeychelles18Setting up of an energy efficiency use and conservation extension service within the Energy Affairs BureauSeychelles19Energy audits for commercial and institutional buildingsSeychelles20Expand and strengthen the capacity of the Energy Conservation Fund to improve energy conservation and managementSri Lanka consuming end-use equipment21Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipmentZimbabwe22Investing in demand-side management in the electricity sectorZimbabwe14End use/Description: Heating2,0001Rehabilitation of heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia2,0002Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment20	11	Establishment of an educational campaign of rational use of energy			Honduras	2000
14       Lower energy consumption through demand-side energy efficiency and conservation programmes and incentives       Mauritius conservation programmes and incentives         15       Demand management and promotion of substitute energy sources       Senegal of low incentives         16       Improvement of energy efficiency of buildings in Western Africa (Senegal and Côte d'Ivoire)       3,500       Senegal d'Ivoire)         17       Incorporation of energy efficiency measures and standards in building design       Seychelles         18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy audits for commercial and institutional buildings       Seychelles         20       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 consuming end-use equipment         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Zimbabwe         22       Investing in demand-side management in the electricity sector       Zimbabwe         x.1.4       End use/Description: Heating       2,000       Armenia for the earthquake zone of Armenia         2       Demonstration heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       20       Armenia environm	12				Honduras	2000
conservation programmes and incentives       Senegal         15       Demand management and promotion of substitute energy sources       Senegal         16       Improvement of energy efficiency of buildings in Western Africa (Senegal and Côte       3,500       Senegal         17       Incorporation of energy efficiency measures and standards in building design       Seychelles         18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy audits for commercial and institutional buildings       Seychelles         20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Zimbabwe         22       Investing in demand-side management in the electricity sector       Zimbabwe         .1.4       End use/Description: Heating       2,000       Armenia         2       Demonstration heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       20       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia <td>13</td> <td>Evaluation of the electricity generation system</td> <td></td> <td></td> <td>Kiribati</td> <td>1999</td>	13	Evaluation of the electricity generation system			Kiribati	1999
16       Improvement of energy efficiency of buildings in Western Africa (Senegal and Côte d'Ivoire)       3,500       Senegal d'Ivoire)         17       Incorporation of energy efficiency measures and standards in building design       Seychelles         18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy addits for commercial and institutional buildings       Seychelles         20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Zimbabwe         22       Investing in demand-side management in the electricity sector       Zimbabwe         1.4       End use/Description: Heating       2,000       Armenia         2       Demonstration of heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       20       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia	14				Mauritius	1999
d'Ivoire)       17       Incorporation of energy efficiency measures and standards in building design       Seychelles         18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy audits for commercial and institutional buildings       Seychelles         20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Zimbabwe         22       Investing in demand-side management in the electricity sector       Zimbabwe         1.4       End use/Description: Heating       2,000       Armenia         2       Demonstration heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       20       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia	15				Senegal	1997
18       Setting up of an energy efficiency use and conservation extension service within the Energy Affairs Bureau       Seychelles         19       Energy audits for commercial and institutional buildings       Seychelles         20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Sri Lanka         22       Investing in demand-side management in the electricity sector       Zimbabwe         .1.4       End use/Description: Heating       2,000         1       Rehabilitation of heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       2,000       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia	16			3,500	Senegal	1997
Energy Affairs Bureau       19       Energy audits for commercial and institutional buildings       Seychelles         20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Sri Lanka         22       Investing in demand-side management in the electricity sector       Zimbabwe         Attack       End use/Description: Heating       Zimbabwe         1       Rehabilitation of heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       2,000       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia	17	Incorporation of energy efficiency measures and standards in building design			Seychelles	2000
20       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         21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Sri Lanka         22       Investing in demand-side management in the electricity sector       Zimbabwe <b>1.4</b> End use/Description: Heating       Zimbabwe         1       Rehabilitation of heating and cooling of buildings by environmentally safe systems for the earthquake zone of Armenia       2,000       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia	18				Seychelles	2000
its capability to assist different stakeholders in the energy sector in the areas of energy conservation and management 21 Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment 22 Investing in demand-side management in the electricity sector Zimbabwe A.1.4 End use/Description: Heating 1 Rehabilitation of heating and cooling of buildings by environmentally safe systems 2,000 Armenia for the earthquake zone of Armenia 2 Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment	19	Energy audits for commercial and institutional buildings			Seychelles	2000
21       Adopt energy-efficient building codes standardization and labelling of energy consuming end-use equipment       Sri Lanka         22       Investing in demand-side management in the electricity sector       Zimbabwe         .1.4       End use/Description: Heating       Image: State in the electricity sector       Zimbabwe         1       Rehabilitation of heating and cooling of buildings by environmentally safe systems       2,000       Armenia         2       Demonstration heating and cooling system implementation on the basis of environmentally safe heat pump equipment       20       Armenia	20	its capability to assist different stakeholders in the energy sector in the areas of			Sri Lanka	2000
22       Investing in demand-side management in the electricity sector       Zimbabwe <b>.1.4</b> End use/Description: Heating       1         1       Rehabilitation of heating and cooling of buildings by environmentally safe systems       2,000       Armenia         2       Demonstration heating and cooling system implementation on the basis of       20       Armenia	21	Adopt energy-efficient building codes standardization and labelling of energy			Sri Lanka	2000
1       Rehabilitation of heating and cooling of buildings by environmentally safe systems       2,000       Armenia         1       Rehabilitation of heating and cooling of buildings by environmentally safe systems       2,000       Armenia         2       Demonstration heating and cooling system implementation on the basis of       20       Armenia         2       Demonstration heating and cooling system implementation on the basis of       20       Armenia	22	• • • •			Zimbabwe	1998
for the earthquake zone of Armenia2Demonstration heating and cooling system implementation on the basis of2environmentally safe heat pump equipment	1.4 End	luse/Description: Heating				
2 Demonstration heating and cooling system implementation on the basis of 20 Armenia environmentally safe heat pump equipment	1			2,000	Armenia	1998
	2	Demonstration heating and cooling system implementation on the basis of		20	Armenia	1998
	2			014	Coordia	1000
					Georgia Kazakhstan	1999 1998

No	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the nationa communication
5	Pilot project on heating and hot water supply		814	Kazakhstan	1998
6	Solar hot water supply demonstration system for the international post-trauma rehabilitation centre (IPTRC)		200	Armenia	1998
7	Introduction of solar water-heat collectors (SWHC) into the energy system			Armenia	1998
8	Use of solar energy for water heating in the residential sector	73	3,900	Ecuador	2000
I.5 End	d use/Description: Lighting				
1	Enhance energy saving in the residential sector by using compact fluorescent lamps			Costa Rica	2000
2	Substitution of public lighting by more efficient units	201	25,000	Ecuador	2000
3	Substitution of lamps in the commercial and services sectors	86	4,080	Ecuador	2000
4	Energy saving in the residential sector by lamp substitution	680	27,200	Ecuador	2000
5	Building houses with efficient illumination and solar energy			El Salvador	2000
6	Introduction of compact fluorescent bulbs and timers/switches to low income consumers via the removal of common external tariff (CET), and domestic taxes/levies			Grenada	2000
7	Retrofitting of existing public lighting with more efficient low energy consumption types			Grenada	2000
8	Procurement of more energy efficient lighting, air conditioners, etc.			Grenada	2000
9	Incandescent lamp substitution by efficient lamps, oriented to the residential sector			Honduras	2000
10	Reducing $CO_2$ emissions through use of compact fluorescent lamps in the			Lao PDR	2000
	government and commercial sectors				
11	Use of low wattage and renewable energy technologies, such as compact fluorescent lamps (CFL) and solar water heaters (SWH)			Seychelles	2000
12	Introduce demand-side measures (DSM) such as peak lopping through appropriate pricing, popularization of more efficient end use devices such as luminaries, refrigerators, air conditioners and motors, etc.			Sri Lanka	2000

#### LIST OF PROJECTS SUBMITTED BY PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION IN ACCORDANCE WITH ARTICLE 12.4 OF THE CONVENTION\*

#### A.1.6 End use/Description: Refrigeration

No	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
1	Use of energy-efficient refrigerators and freezers			Seychelles	2000
	osector: Transport d use/Description: Alternative energy sources				
1	Use of natural gas in motor vehicles	100/year	3,400	Ecuador	2000
2	Integrated system for zero or reduced emission fuel cell bus operation in Cairo	-		Egypt	1999
3	Introduction of electric vehicles, trolleys and trains			El Salvador	2000
4	Promotion of bicycle usage			El Salvador	2000
5	Natural gas vehicles (refuelling station and conversion kit)		AUS\$ 32,800,000	Indonesia	1999
6	Rapid public transport system utilizing electric-powered vehicles			Mauritius	1999
2.2 End	d use/Description: Improve fleet management				
1	Improving the efficiency of transport system in Ghana			Ghana	2001
2	Better engine and tyre maintenance and driver training			Grenada	2000
3	Dissemination of leaflets, pamphlets, and brochures on vehicle selection, maintenance, control of fuel combustion and emissions on good driving practices			Grenada	2000
4	Implementation of proper transport/traffic management using control changes in traffic flow through improved traffic signal timing and adopting measures to encourage increased capacity utilization			Grenada	2000
5	Implementing measures to reduce atmospheric pollution caused by the transport sector			Mali	2000
6	Gradual introduction of unleaded gasoline			Mauritius	1999
7	Technical inspections in the transport sector	23,800		Peru	2001
8	Equipping the highway patrol unit with required resources to enforce measures and regulations			Seychelles	2000
9	Improvement of the public transport system			Seychelles	2000
10	Traffic management plan			Seychelles	2000
11	Light electric rail system for the east coast/shifting to sea transport			Seychelles	2000

	No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
	40					
	12	Declare emission standards for mobile and stationary sources			Seychelles	2000
	13	Adopt an appropriate road pricing system			Sri Lanka	2000
	14	Improve traffic management systems through the use of information technology			Sri Lanka	2000
	15	Integrate bus-rail operations through proper network planning			Sri Lanka	2000
	16	Introduce a suitable vehicle inspection and monitoring programme			Sri Lanka	2000
.2.3	End	use/Description: Traffic reduction				
	1	Implementation of an integrated transport system in the large metropolitan area of Costa Rica			Costa Rica	2000
	2	Improvement of urban and inter-urban road networks			El Salvador	2000
	3	Increase mass public transportation means			El Salvador	2000
	4	Bicycle paths	23,900		Peru	2001
	5	Railroad transport		1,464,000	Uzbekistan	1999
	6	Air transport		1,000,000	Uzbekistan	1999
.2.4	End	use/Description: Vehicle energy intensity reduction				
	1	Development of a concept, strategy and action plan to reduce emissions from road vehicles		400	Armenia	1998
	2	Improvements in motor fleet structure, technical characteristics of engines and		460	Azerbaijan	2000
		quality of roads				
	3	Quality of roads Climate change early action technology measures: retrofitting two-stroke engines			Egypt	1999
	3 4				Egypt El Salvador	1999 2000
		Climate change early action technology measures: retrofitting two-stroke engines		48		
	4	Climate change early action technology measures: retrofitting two-stroke engines Modernization and technical upgrading of the vehicle fleet Establish level of vehicular emissions for purposes of adequate planning Formulation and implementation of a procurement policy for vehicles in the public		48	El Salvador	2000
	4 5	Climate change early action technology measures: retrofitting two-stroke engines Modernization and technical upgrading of the vehicle fleet Establish level of vehicular emissions for purposes of adequate planning		48	El Salvador Ghana	2000 2001
	4 5	Climate change early action technology measures: retrofitting two-stroke engines Modernization and technical upgrading of the vehicle fleet Establish level of vehicular emissions for purposes of adequate planning Formulation and implementation of a procurement policy for vehicles in the public		48	El Salvador Ghana	2000 2001

No.	. Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the nationa communicatio
9	Initiate a "Clean Air Act"			Mauritius	1999
10	Planning and implementing a programme for technical control of vehicles to reduce fuel consumption			Niger	2000
11	Conversion of taxis to liquefied petroleum gas vehicles	500		Peru	2001
12	Phase-out out old vehicles (bonds)	3,700		Peru	2001
13	Driver awareness campaign for efficient use of vehicles			Seychelles	2000
14	Road transport		2,000	Uzbekistan	1999
15	Re-opening of the railway services to reduce the use of fuels on the highways			Costa Rica	2000
16	Railway network enhancement		111,888,000	Ghana	2001
17	Setting up of a second city on Mahe			Seychelles	2000
	esector: Industry I use/Description: Introducing new technologies and processes				
	•			Chile	2000
1 End	I use/Description: Introducing new technologies and processes Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt			Chile El Salvador	2000 2000
1 End	Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project		500		
1 End 1 2	Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project Technological upgrading in cement industry Technologies required for conduction of mitigation policy: electric filters necessary		500 1,000	El Salvador	2000
1 End 1 2 3	Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project Technological upgrading in cement industry Technologies required for conduction of mitigation policy: electric filters necessary for the Kaspi cement plant Project to increase energy efficiency in Kaspi cement plant Integration of climate change topics in curricula of technical studies			El Salvador Georgia Georgia Grenada	2000 1999 1999 2000
1 End 1 2 3 4	Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project Technological upgrading in cement industry Technologies required for conduction of mitigation policy: electric filters necessary for the Kaspi cement plant Project to increase energy efficiency in Kaspi cement plant			El Salvador Georgia Georgia	2000 1999 1999
1 End 1 2 3 4 5	Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project Technological upgrading in cement industry Technologies required for conduction of mitigation policy: electric filters necessary for the Kaspi cement plant Project to increase energy efficiency in Kaspi cement plant Integration of climate change topics in curricula of technical studies Programme/project to disseminate information on energy audits, rational use of			El Salvador Georgia Georgia Grenada	2000 1999 1999 2000
1 End 1 2 3 4 5 6	Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project Technological upgrading in cement industry Technologies required for conduction of mitigation policy: electric filters necessary for the Kaspi cement plant Project to increase energy efficiency in Kaspi cement plant Integration of climate change topics in curricula of technical studies Programme/project to disseminate information on energy audits, rational use of energy, energy diversification and clean technologies in the industrial sector			El Salvador Georgia Georgia Grenada Grenada	2000 1999 1999 2000 2000
1 End 1 2 3 4 5 6 7	<ul> <li>I use/Description: Introducing new technologies and processes</li> <li>Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project</li> <li>Technological upgrading in cement industry</li> <li>Technologies required for conduction of mitigation policy: electric filters necessary for the Kaspi cement plant</li> <li>Project to increase energy efficiency in Kaspi cement plant</li> <li>Integration of climate change topics in curricula of technical studies</li> <li>Programme/project to disseminate information on energy audits, rational use of energy, energy diversification and clean technologies in the industrial sector</li> <li>Project for the standardization and certification of industrial equipment</li> <li>Project to build national consulting capacity in energy and environment in the</li> </ul>			El Salvador Georgia Georgia Grenada Grenada Grenada	2000 1999 1999 2000 2000 2000
1 End 1 2 3 4 5 6 7 8	<ul> <li>Activities implemented jointly: CHILIPAVE: Chili cold mix in place; recycled asphalt pavement greenhouse gas reduction project</li> <li>Technological upgrading in cement industry</li> <li>Technologies required for conduction of mitigation policy: electric filters necessary for the Kaspi cement plant</li> <li>Project to increase energy efficiency in Kaspi cement plant</li> <li>Integration of climate change topics in curricula of technical studies</li> <li>Programme/project to disseminate information on energy audits, rational use of energy, energy diversification and clean technologies in the industrial sector</li> <li>Project to build national consulting capacity in energy and environment in the industrial sector</li> </ul>			El Salvador Georgia Grenada Grenada Grenada Grenada	2000 1999 2000 2000 2000 2000

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the nationa communicatio
12	Continuous catalytic informer		85,000	Jordan	1997
13	Crude oil distillation unit		2,500	Jordan	1997
14	Expansion of distillation capacity		80,000	Jordan	1997
15	Gasification		225,000	Jordan	1997
16	Heat recovery from sulphuric acid plant/Jordan Phosphate Mining Company		26,000	Jordan	1997
17	Hydro desulphurization for diesel		60	Jordan	1997
18	Hydrocracking		100,000	Jordan	1997
19	Isomerization unit		30,000	Jordan	1997
20	Merox upgrade		1,000	Jordan	1997
21	Modern fluid catalytic cracker		200,000	Jordan	1997
22	Industrial sector: motor-driven system improvement and replacement			Lebanon	1999
23	Industrial sector: efficiency improvements to boilers and furnaces via replacement and fuel switching options			Lebanon	1999
24	Research on agricultural by-products, vegetable oils and alcohol as alternative sources of energy			Mali	2000
25	Investigate the possibility of a gas-to-energy power plant			Mauritius	1999
26	Efficiency improvement and conversion of industrial boilers	2,100		Peru	2001
27	Economic evaluation of GHG abatement strategies	,		Senegal	1997
28	Set up energy education and extension services for industries			Seychelles	2000
29	Use of more energy efficient and clean technology in industries			Seychelle	2000
30	Use of renewable energy technologies in hotels and guesthouses			Seychelles	2000
31	Develop an inventory on emissions from different industries			Sri Lanka	2000
32	Develop mechanisms to reduce GHG emissions from different industries			Sri Lanka	2000
33	Transfer of the first shift of ammonia production of PO navoiazot for production of methanol		2,500	Uzbekistan	1999
34	Updating technology of nitrate producing aggregate at the Fergana PO "Azot"		30,000	Uzbekistan	1999
35	Upgrading of nitrate producing shop in Chirchik PO "eletrohimprom"		20,000	Uzbekistan	1999
36	Building and industrial building sectors: 6 projects		13,000	Uzbekistan	1999
37	Other industries: 3 projects (cotton, butter-oil) to improve power generation		20,800	Uzbekistan	1999
38	Finish construction of the aggregates for production of weak nitric acid and ammonia saltpetre at Fergana PO "Azot"		8,800	Uzbekistan	1999

No	. Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the nationa communicatio
39 40	Ferrous and non-ferrous metallurgy: 7 projects for power equipment Cogeneration project		275,300	Uzbekistan Grenada	1999 2000
2 Enc	I use/Description: Process improvements				
1	Use of waste as an energy source and use of alternative materials to clinker in			Costa Rica	2000
2	cement production Combustion optimization in boilers in the industrial sector	21	1,500	Ecuador	2000
3	Reduction of losses in the energy sector	0.385/year	128,000	Ecuador	2000
4	Recover LPG from natural gas	686/year	67,000	Ecuador	2000
5	Cooling system in cement production	·		Indonesia	1999
6	Utilization of associated gas/increase in natural gas share in the energy balance			Kazakhstan	1998
7	Cement industry: conservation and preheating in pyroprocessing and improvements in the grinding process			Lebanon	1999
8	Commission a study on energy recovery from waste			Sri Lanka	2000
Sub	esector: Switching to renewable sources of energy				
1	Remove barriers for using fast growing tree plants in the private sector as a source of renewable energy		50	Armenia	1998
2	High efficiency photovoltaic module station: manufacturing and testing		25	Armenia	1998
3	Conditions of geothermal resource studies and perspectives for the practical use of geothermal energy			Armenia	1998
4	Removal of barriers to rural electrification with renewable energy			Chile	2000
5	Activities implemented jointly: wind energy in northern Chile			Chile	2000
6	Use renewable sources of energy to satisfy the energy demand by 2010	61.49/year		Costa Rica	2000
7	Energy generation using small hydroelectric systems	8.8/year	3,200	Ecuador	2000
8	Construction of small hydroelectric plants			El Salvador	2000

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
9	Expand rural electrification by promoting the use of renewable energy			El Salvador	2000
10	Expand the use of geothermal energy in electricity generation			El Salvador	2000
11	Small hydro-energetics: Abasha hydro power plant rehabilitation project		1,000	Georgia	1999
12	Small hydro-energetics: Intsoba hydro power plant rehabilitation project		850	Georgia	1999
13	Small hydro-energetics: Martkopi hydro power plant rehabilitation project		750	Georgia	1999
14	Small hydro-energetics: Misaktsieli hydro power plant rehabilitation project		2,300	Georgia	1999
15	Small hydro-energetics: Stori hydro power plant project		8,400	Georgia	1999
16	Technologies required for conduction of mitigation policy: electric and mechanical		11,000	Georgia	
	equipment for small hydro and wind power plants			-	1999
17	Wind power: "Karenergo" wind power plant project		5,000	Georgia	1999
18	Solar energy: Batumi heat supply with solar energy		21,800	Georgia	1999
19	Geothermal hot water supply: Tbilisi geothermal hot water supply project		30,800	Georgia	1999
20	Geothermal hot water supply: Hippodrome district geothermal hot water supply		860	Georgia	
	project			-	1999
21	Geothermal hot water supply: Zugdidi geothermal heat supply project		15,000	Georgia	1999
22	Phytothermal energy production		880	Ghana	2001
23	Solar energy project for communities		115	Ghana	2001
24	Pilot project to generate electricity using renewable source of energy (wind)			Grenada	2000
25	Bamboo International Developing Co.: electricity production project using bamboo			Honduras	2000
26	Biogen project: use of wood wastes and wastes of African palm to produce			Honduras	
	electricity				2000
27	Honduras'ZOND project: A 60 MW wind power station, to be installed in the			Honduras	2000
	surroundings of Tegucigalpa				
28	Application of renewable energy system to sustainable rural development and demonstration hybrid system		AUS\$ 240,000	Indonesia	1999
29	Application of renewable energy system to sustainable rural development and demonstration of hybrid system		AUS\$ 3,400,000	Indonesia	1999
30	Solar energy desalination			Indonesia	1999
31	Power supply by photovoltaic systems to remote villages		3,500	Jordan	1997

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the nationa communicatio
32	Reverse osmosis water desalination (ROWD) with renewable energy hybrid system in remote areas		2,400	Jordan	1997
33	SALT-gradient solar pond pilot plant		633	Jordan	1997
34	Exploration regarding geothermal energy in Jordan		1,400	Jordan	1997
35	Regional training centre in the field of renewable energy		700	Jordan	1997
36	Small hydro		578	Kazakhstan	1998
37	Wind energy			Kazakhstan	1998
38	Solar energy		482	Kazakhstan	1998
39	Alternative energy sources			Kiribati	1999
40	Assessing small-scale hydropower potential and demonstration project in combination with dissemination of electric cooking stove			Lao PDR	2000
41	Decentralized energy supply through solar home systems in rural households			Lao PDR	2000
42	Electricity supply sector: removing barriers for implementing renewable energy (solar and wind)			Lebanon	1999
43	Reducing wood consumption by promoting energy-saving technologies such as solar lighting equipment			Mali	2000
44	Rehabilitation of the Regional Center for Solar Energy (CRES)			Mali	2000
45	Use of eolian energy			Mexico	1997
46	Feasibility study on other renewable energy resources			Micronesia	1997
47	Solar pilot project			Micronesia	1997
48	Subsidy programme for solar energy			Micronesia	1997
49	Pilot programme for rural electrification using small hydro power plants			Nicaragua	2001
50	Electricity generation using wood wastes in the Ocotal area			Nicaragua	2001
51	Action programme for energy supply using hydro dams, solar and wind energy			Niger	2000
52	Hydroelectricity substitutes diesel	8,500		Peru	2001
53	Hydroelectricity substitutes natural gas	2,300		Peru	2001
54	Solar collectors	1,000		Peru	2001
55 56	Wind turbines	900		Peru	2001
56	Promote the use of renewable energy technologies and energy efficient appliances in the energy end-use sector			Seychelles	2000

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
57	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
58	Encourage the use of photovoltaic energy			Tuvalu	1999
59	Renewable surces of energy: 2 hydro power plants		720,000	Uzbekistan	1999
60	Investment in small-scale hydroelectricity power stations to supply rural and peri-urban consumers			Zimbabwe	1998
61	Accelerated promotion of biogas technology in rural low income households			Zimbabwe	1998
62	Install solar mini-grid utilities to serve rural centres not connected to the grid			Zimbabwe	1998
5 Sub	sector: Switching to low-cost fossil fuels				
1	Electricity generation using residual natural gas	53/year	35,000	Ecuador	2000
2	Integrated solar thermal/natural gas power plant			Egypt	1999
3	Piping of natural gas from the proposed West Africa gas pipeline to and within some urban areas of Ghana		480,000	Ghana	2001
4	Support construction of a gas pipeline from Mexico, in order to promote the use of natural gas in Honduras			Honduras	2000
5	Natural gas substitution of coal	7,800		Peru	2001
6	Natural gas substitution of diesel	6,000		Peru	2001
7	Two additional gas pipelines to substitute coal, residual oil and diesel usage	2,400		Peru	2001
6 Sub	sector: Efficient conversion of fossil fuels				
1	Power generation and fuel refining		2,019	Azerbaijan	2000
1 2	Power generation and fuel refining Energy efficiency improvement and GHG reduction		2,019	Egypt	1999
1	Power generation and fuel refining		2,019	•	

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
				Cranada	
5	Programme for the achievement of greater energy efficiency in energy transformation centers			Grenada	2000
6	Project for the reduction of losses in supply/distribution			Grenada	2000
7	Project to improve the efficiency of generators			Grenada	2000
8	Paper sludge and solid waste		AUS\$ 9,000,000	Indonesia	1999
9	Sulphur recovery plant		10,000	Jordan	1997
10	Modernization and rehabilitation of power plants		1,061	Kazakhstan	1998
11	Energy conservation project		,	Micronesia	1997
12	Action programme for the promotion of energy efficiency using energy audits, training programmes, public awareness and promoting solar energy			Niger	2000
13	Carry out regular energy audits and put in place energy management plan			Seychelles	2000
14	Heat recovery from the public electricity generation power stations			Seychelles	2000
15	Reduction in electricity supply system losses			Seychelles	2000
16	Improve transmission and distribution system to bring down the current energy losses			Sri Lanka	2000
17	Electric power supply: 12 projects for upgrading and more efficient new gas turbines and boilers		1,118,600	Uzbekistan	2000
18	Oil, gas and coal industry: 6 projects for upgrading and more efficient new technologies		969,100	Uzbekistan	2000
19	Chemical industry: 3 projects for upgrading energy systems		688,400	Uzbekistan	2000
	tor: Agriculture sector: Reduce fossil energy use				
1	Introduction of metering and control systems for consumption of energy resources and water		72,300	Uzbekistan	2000
2	Rationalization of energy-saving in irrigation systems and reduction of irrigation water losses		2,500	Uzbekistan	2000
3	Replacement of diesel-pumping plants by electric drives		120,200	Uzbekistan	2000

N	o. Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
2 Si	bsector: Increase carbon storage in agriculture soils				
1	Pilot production of biohumus by processing organic part of solid urban wastes and manure		65	Armenia	1998
2	Use and management of rice crop wastes			Ecuador	2000
3	Improving water management in irrigated rice cultivation			Mali	2000
4	Awareness programme on agricultural practices that could help to curb			Seychelles	2000
	GHG emissions				
5	Soil nutrient management			Seychelles	2000
3 Sı	bsector: Improve management of ruminant animals				
1	Reduction of methane emissions in livestock by introducing diet changes			Costa Rica	2000
2	Diet enhancement of livestock using management programmes			Ecuador	2000
3	Animal breeding and use of biodigesters for the production of energy			Mali	2000
4	Programme on livestock and carbon uptake			Nicaragua	2001
4 Sı	bsector: Expand biofuel production as carbon offset				
1	Biogas programme in the agriculture and livestock sectors	2.68	60	Ecuador	2000
5 Sı	bsector: Adopt manure management practices for methane collection				
1	Study of a problem of application of methane fermentation		35	Armenia	1998
2	Manure management using biodigesters			Ecuador	2000

C Sector: Forest

C.1 Subsector: Production forestry/agroforestry

	No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communicatior		
	1	Captura de CO <sub>2</sub> : demonstratión del aumento en la caputra de carbono en bosque de Chile mediante inoculación de plántulas			Chile	2000		
	2	Sequestration of CO <sub>2</sub> : measurement of carbon sequestration in Chilean forests and promotion in a global carbon market			Chile	0000		
	2		4 750		Foundar	2000		
	3 4	Establishment of agroforestry systems in the Carmen area	1,750 1,750 t C		Ecuador	2000		
	4 5	Establishment of silvopastoral systems in the Gaumote area Agroforestry projects in twelve areas that have degraded soils	1,75010		Ecuador Honduras	2000 2000		
.2	Subsector: Forest practices/goals							
	1	Private forestry project			Costa Rica	2000		
	2	Protected areas project			Costa Rica	2000		
	3	Enhancement of Ecuador's national system of protected areas	93,900 t C		Ecuador	2000		
	4	Sustainable management of the Chachi native forest along the Cayapas river	30 t C		Ecuador	2000		
	5	Management of forests in the Puyango area	105 t C		Ecuador	2000		
	6	Forestry plantations in the Balzar area	1,750 t C		Ecuador	2000		
	7	Forestry plantations in the Bolivar area	525 t C		Ecuador	2000		
	8	Green belt of Guayaquil city	42 t C		Ecuador	2000		
	9	Forestry: reforestation project of Kaspi district		350	Georgia	1999		
		Forestry: "Nabadkhevi" forest rehabilitation project		270	Georgia	1999		
	11	Forestry: aforestation project of "Red Bridge" environs		250	Georgia	1999		
	12	The use of remote-sensing for monitoring forest cover changes and			Ghana	2001		
		for establishing base-line data			0.1	0001		
	13	Rehabilitation of degraded forest areas		1,500	Ghana	2001		
	14	Joint forestry project to offset GHG emissions		5,000	Ghana	2001		
	15	Support for the implementation of the Forestry Policy and Action Plan			Grenada	2000		
	16 17	Replication of a reforestation project in other regions of the country			Mali Mexico	2000 1997		
		Carbon sequestration projects in Bahia Kino in Sonora and in forested areas of Ciapas						
	18	Hydrologic rehabilitation and carbon uptake for the sustainability of coffee			Nicaragua	2001		
		production in the Matagalpa area						

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communicatior
19	Promote planting of Pourghere to preserve vegetation, to maintain the fertility of soils and to increase the sequestration of $CO_2$	20/30 years		Niger	2000
20	Afforestation with exotic species	9,900		Peru	2001
21	Afforestation with indigenous species	4,300		Peru	2001
22	Forest management	2,400		Peru	2001
23	Controlling commercial biomass harvest			Seychelles	2000
24	Control of deforestation			Seychelles	2000
25	Controlling residential housing projects			Seychelles	2000
26	Controlling outbreak of pests and invasive species			Seychelles	2000
27	Enforcement of existing regulations			Seychelles	2000
28	Prepare a database to a) quantify the role of forests, 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
Sub	sector: Conservation of forests				
1	Activities implemented jointly: SIF carbon sequestration project			Chile	2000
2	Activities implemented jointly: Rio Condor carbon sequestration project			Chile	2000
3	Forestry: Tbilisi Dendrological Park restoration project		230	Georgia	1999
4	Three further projects in Oaxaca, Campeche and Monarc Butterfly Reserve			Mexico	1997
5	Quantitative evaluation of the carbon sink potential of FSM ecosystems			Micronesia	1997
6	Restoration and protection of the tropical humid forest in the area of Esperanza Verde, Rio San Juan			Nicaragua	2001
7	Protecting/managing forests in reserves and protected areas			Seychelles	2000
8	Controlling forest fires			Seychelles	2000

#### D Sector: Waste

### D.1 Subsector: Wastewater management

No.	Project title	Estimated emission reductions/ sequestration (1000 mt CO <sub>2</sub> )	Cost (US\$*1000)	Country	Year of submission of the national communication
1	Wastewater treatment in coffee production	29.03/year		Costa Rica	2000
2	Generation of electricity using natural gas from the Rio Azul landfill	3.64 t CH <sub>4</sub> /year		Costa Rica	2000
3	Recovery and utilization of methane from landfills			Grenada	2000
4	Treatment of commercial and industrial waste before discharge into aquatic and			Grenada	2000
	terrestrial environment.				
5 <b>S</b> ub	Aerobic treatment of wastewater			Seychelles	2000
Sub	sector: Solid waste disposal				
1	Climate change early action technology measures: methane recovery from landfill			Egypt	1999
2	Reduction of methane emissions into the atmosphere through commercial utilization of landfill methane			Egypt	1999
3	Landfilling with gas recovery and flaring			Lebanon	1999
4	Landfilling with gas utilization			Lebanon	1999
5	Promote proper solid waste management, with methane recovery			Sri Lanka	2000
Sub	sector: Solid waste recycling				
1	Recycling, reuse, composting and smart selection of materials for reuse			Grenada	2000
2	Recycling and composting of solid waste			Seychelles	2000
Sub	sector: Incineration				
1	Municipal and household sector: waste incinerating plant for Tashkent		45,000	Uzbekistan	1999
Sub	sector: Composting				
1	Composting and landfilling, with gas recovery and flaring			Lebanon	1999
2	Composting and landfilling, with gas recovery and utilization			Lebanon	1999