

**Activities Implemented Jointly:
Fourth Report to the
Secretariat of the United Nations
Framework Convention on
Climate Change**



**Accomplishments and Descriptions
of Projects Accepted Under the
U.S. Initiative on Joint Implementation**

Volume 1



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To help inform international discussion on the issue of joint implementation, the United States submits this fourth report on the accomplishments of the U.S. Initiative on Joint Implementation (USIJI) to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). This report follows the recommendations of the Conference of the Parties on activities implemented jointly as set forth in Decision 5/CP.1 of the UNFCCC/CP/1995/7/Add.1, and as elaborated on in the “Report of the Subsidiary Body for Scientific and Technological Advice (SBSTA) on the work of its Fifth Session, Bonn, 25-28 February 1997” [FCCC/SBSTA/ 1997/4].

Mention of trade names or commercial products does not constitute endorsement or recommendation of use.

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Foreword

The U.S. Initiative on Joint Implementation (USIJI) has accepted 36 projects out of more than 200 submitted during the past five years. Since its formal launch in 1994, USIJI has provided a framework for developing and implementing these projects which has facilitated linkages between project developers, investors, technical experts, and the host country. It has also served as a testing ground for new approaches to energy efficiency, land management, and power generation.

Geographically and sectorally diverse, these projects further international understanding of project-based greenhouse gas mitigation activities in three key areas:

- Design and operation of these activities;
- Development of methodologies and procedures for measuring, monitoring, verifying, and reporting project activities; and
- Identification of institutional and programmatic capacity needs in host countries.

Substantial progress has been made in these areas but further work is needed. The USIJI will continue to support the development of project-based activities as a priority for cost-effective greenhouse gas emissions limitations, reductions, avoidance and sequestration.

Part One:
Overview of
USIJI Program Reporting

I. Introduction

Initiated in 1993 as part of the U.S. climate Change Action Plan, the U.S. Initiative on Joint Implementation (USIJI) supports the development and implementation of voluntary projects between U.S. and non-U.S. partners that reduce, avoid, or sequester greenhouse gas (GHG) emissions. Final groundrules for the USIJI Program,^(a) published in 1994, describe the purpose of the pilot program, outline the time line for evaluation and reassessment of the program, define eligibility criteria for domestic and non-U.S. participants, establish an Evaluation Panel to review USIJI projects, and define criteria for acceptance of projects into the USIJI portfolio.

Projects accepted into the USIJI Program are evaluated against nine criteria and four other areas of consideration. The criteria require that each project accepted into the USIJI Program demonstrate that it:

- has the acceptance of the host country government;
- will reduce or sequester net GHG emissions;
- was developed or realized because of the USIJI Program;
- provides data and methodological information sufficient to establish emissions baselines with and without the project;
- provides for tracking and verifying the emissions reduced or sequestered by the project;
- identifies associated environmental and developmental impacts; and
- provides assurance that benefits gained will not be lost over time.

These criteria are intended to identify those projects that support the development goals of the host country while providing GHG benefits beyond those that would occur in the absence of the joint implementation activity. The criteria have been formulated to ensure that projects accepted into the program will produce real, measurable net emissions reductions. Net emission reductions achieved as a result of USIJI projects will be measured, monitored, verified, and reported.

The USIJI Program is directed by an Interagency Working group, chaired by the Department of State, which has the primary responsibility for policy development. The USIJI Evaluation Panel is co-chaired by the Environmental Protection Agency and the Department of Energy, and includes representatives from the Agency for International Development and the Departments of Agriculture,

(a) The Groundrules and Project Criteria for USIJI are presented in Section IV of Part One of this report.

Commerce, Interior, State, and treasury. The USIJI Secretariat, an interagency staff, supports the day-to-day operations of the USIJI Program. Technical experts are drawn from a variety of organizations to assist the Secretariat in the proposal review process and to provide technical assistance to project developers.

The USIJI Secretariat offers a variety of technical services to support both the development and implementation of USIJI projects. These technical services include: (1) technical assistance to aid project developers in calculating emission reduction benefits, developing monitoring and verification plans, and identifying sources of project financing; (2) information resources including technical guidance documents, databases, a fax-on-demand service, an information hotline, and an Internet site; and (3) public recognition to help project participants increase the visibility of their participation in the program.

The USIJI Secretariat accepts project proposals at any time, and provides limited technical assistance to project developers to help address USIJI project evaluation criteria and other considerations as specified in the USIJI Groundrules. A formal proposal evaluation and acceptance process is conducted approximately three times per year.

The USIJI Program is pleased to participate in the Activities Implemented jointly (AIJ) pilot phase of Joint Implementation under the United Nations Framework Convention on Climate change (FCCC). We hope that the information in this report is instructive for the FCCC Secretariat and the Parties to the Convention.

II. Summary of USIJI Projects

As of July 31, 1999, the USIJI Program had completed nine rounds of proposal evaluations and accepted 36 projects from 16 countries. Seven proposals were accepted in Round 1 (announced in February 1995), eight in Round 2 (announced in December 1995), ten in Round 3 (announced in December 1996), one in Round 4 (announced in July 1997), two in Round 5 (announced in October 1997), four in Round 6 (announced in March 1998), one in Round 7 (announced in July 1998), one in Round 8 (announced in November 1998), and four in Round 9 (announced in March 1999). Since the *Second Report to the Secretariat of the United Nations Framework Convention on Climate Change* was submitted by the U.S. government to the FCCC Secretariat in July 1997, two USIJI projects in Costa Rica from the first two rounds—Project BIODEVERSIFIX and the protected area component of Project CARFIX—have been incorporated into another project, the Territorial and Financial Consolidation of Costa Rican National Parks and Biological Reserves. Therefore, the USIJI project portfolio currently includes 36 projects in the following countries: Argentina (2), Belize (2), Bolivia (2), Chile (1), Costa Rica (7), Czech Republic (1), Ecuador (1), Guatemala (2), Honduras (3), Indonesia (1), Mexico (4), Nicaragua (1), Panama (1), the Russian Federation (6), South Africa (1), and Sri Lanka (1).

As the USIJI Program has grown, it has continued to diversify in terms of both the number of participating host countries and the type of project activities. The 36 USIJI projects span four principal sectors: land-use change and forestry and energy, energy and waste, and agriculture. Within each sector, many types of project activities are used to achieve GHG benefits. In the land-use change and forestry sector, project activities range from forest preservation forest regeneration, afforestation, and silviculture to agroforestry, sustainable timber harvesting and the manufacture of durable wood products. In the energy sector, project activities include fuel switching, energy efficiency improvements, cogeneration, capture of fugitive emissions, and alternative energy generation. The two multi-sector projects involve the conversion of biomass waste to energy. The agriculture project involves crop management for the accumulation of soil carbon.

Although carbon dioxide (CO₂) is the primary greenhouse gas addressed in most USIJI projects, one project exclusively targets methane (CH₄) emissions, one reports both CO₂ and nitrous oxide (N₂O) emission benefits, and one reports both CO₂ and nitrogen oxide (NO_x) emission benefits. Over a period of approximately 60 years, the 36 USIJI projects are anticipated to generate GHG benefits totaling at least 286.8 million metric tonnes of CO₂,^(a) 5.7 million tonnes of CH₄, and 4,608 tonnes of N₂O. These benefits totaling the equivalent of 407.9 million metric tonnes of CO₂ are expected to accrue over project lifetimes that vary from 10 to 60 years.

(a) This estimate of total GHG benefits is based on a conservative estimate of GHG benefits from the Scolet T☺: Carbon Sequestration and Sustainable Forest Management in Chiapas Project.

The USIJI projects involve a broad range of participants and are funded through a variety of mechanisms. The project participants include government ministries and agencies, non-governmental organizations, private-sector companies, universities, research institutes, and financing organizations. The sources of project funding include the sale of carbon offsets; revenues generated directly by project activities (e.g., the sale of timber, other biomass resources, and energy); investment capital from private-sector companies; loans provided by commercial banks and multilateral organizations such as the International Finance Corporation; government incentives; endowments; and grants.

All 36 USIJI projects have been formally accepted by the government of their host country, a requirement for their acceptance into the USIJI Program. In each case, host country acceptance has been documented in a letter from the designated national authority of the host country. Of the 36 projects, 19 are classified as “in progress,” indicating that activities associated with project implementation have begun on site. This designation could mean, for example, that although project implementation activities (e.g., construction and planting) have begun, GHG benefits have not yet necessarily begun to accrue. The remaining projects have not yet initiated on-site activities, and are classified as “mutually agreed.” In several cases, difficulties in obtaining funding and/or overcoming logistical or technical obstacles have delayed project implementation.

A summary of the 36 USIJI projects is presented in Table 1.

Table 1. Summary of USIJI Projects

Title of Project	Type of Activity	Stage of Activity ^(a)	Remarks Project Life: ^(b)	GHG Benefits (tonnes) ^(c)			
				CO ₂	CH ₄	N ₂ O	Other
<i>Argentina</i>							
CAPEX, SA Electric Generation Project	Energy conversion from simple cycle to combined cycle	In progress	30 years	32,429,760			
Landfill Gas Management in Greater Buenos Aires	Energy: conversion of methane to carbon dioxide	Mutually agreed	20 years	81,121,240 of carbon dioxide equivalent	4,445,000		
<i>Belize</i>							
BEL/Maya Biomass Power Generation Project	Energy: alternative energy generation (biomass)	Mutually agreed	31 years	3,418,444			
Rio Bravo Carbon Sequestration Pilot Project (includes Phase 1 and 2)	Land-use change and forestry: forest preservation, sustainable harvesting, reduced impact logging, silviculture, fire management, and manufacture of durable wood products	In progress, phase 1 implemented	40 years	10,184,101			

Table 1. (contd)

<i>Bolivia</i>							
Noel Kempff Mercado Climate Action Project	Land-use change and forestry: forest preservation, reforestation, park expansion, and sustainable forest product enterprise development	In progress	30 years	53,916,679		4,608	
Rural Solar Electrification: Pilot Phase	Energy: alternative energy generation (solar)	In progress	20 years + 3 months	1,300			
<i>Chile</i>							
Wind Energy Project	Energy: alternative energy generation (wind)	Mutually agreed	20 years	3,043,131			
<i>Costa Rica</i>							
Aeroenergía S.A. Wind Facility	Energy: alternative energy generation (wind)	In progress	21 years + 1 month (with possible extension)	36,194			
Doña Julia Hydroelectric Project	Energy: alternative energy generation (hydroelectric)	In progress	15 years (with possible 5 year extensions)	210,566			
ECOLAND: Piedras Blancas National Park	Land-use change and forestry: forest preservation and natural regeneration	In progress	16 years	1,342,733			
Klinki Forestry Project	Land-use change and forestry: afforestation, reforestation, and silviculture	In progress	46 years	7,216,000			
Plantas Eólicas S.R.L. Wind Facility	Energy: alternative energy generation (wind)	In progress	21 years + 5 months	222,537			

Table 1. (contd)

Title of Project	Type of Activity	Stage of Activity ^(a)	Remarks Project Life: ^(b)	GHG Benefits (tonnes) ^(c)			
				CO ₂	CH ₄	N ₂ O	Other
Territorial and Financial Consolidation of Costa Rican National Parks and Biological Reserves ^(d)	Land-use change and forestry: forest preservation; and construction of a facility for public education, entertainment, and ecotourism	In progress	25 years	57,467,271			
Tierras Morenas Windfarm Project	Energy: alternative energy generation (wind)	Mutually agreed	13 years + 11 months (with possible 5 year extensions)	57,203			
<i>Czech Republic</i>							
City of Decin: Fuel-Switching for District Heating	Energy: fuel-switching, energy efficiency improvements, and cogeneration	In progress	26 years + 8 months	607,150			
<i>Ecuador</i>							
Bilsa Biological Reserve	Land-use change and forestry: forest preservation	Mutually agreed	30 years	1,170,108			
<i>Guatemala</i>							
Matanzas Hydroelectric Project	Energy: hydroelectric	Mutually agreed	15 years	1,156,194			
Santa Teresa Hydroelectric Project	Energy: hydroelectric	Mutually agreed	15 years	1,241,130			
<i>Honduras</i>							

Table 1. (contd)

Title of Project	Type of Activity	Stage of Activity ^(a)	Remarks Project Life: ^(b)	GHG Benefits (tonnes) ^(c)			
				CO ₂	CH ₄	N ₂ O	Other
Bio-Gen Biomass Power Generation Project, Phase I	Energy, waste: alternative energy generation (wood waste)	In progress	21 years	2,373,940			
Bio-Gen Biomass Power Generation Project, Phase II	Energy, waste: alternative energy generation (wood waste)	In progress	21 years	2,373,940			
Solar-Based Rural Electrification	Energy: alternative energy generation (solar)	In progress	24 years	34,398			
<i>Indonesia</i>							
Reduced Impact Logging for Carbon Sequestration in East Kalimantan ^(e)	Land-use change and forestry: reduced impact logging	Mutually agreed	40 years	134,379			
<i>Mexico</i>							
APS/CFE Renewable Energy Mini Grid Project	Energy: alternative energy generation (hybrid power system: solar, wind, and diesel)	In progress	30 years + 7 months	7,415			
Community Silviculture in the Sierra Norte of Oaxaca	Land-use change and forestry: agroforestry, plantation establishment, silviculture, fire management, reduced impact logging, and increased wood-use efficiency	Mutually agreed	30 years	3,065,333			

Table 1. (contd)

Title of Project	Type of Activity	Stage of Activity ^(a)	Remarks Project Life: ^(b)	GHG Benefits (tonnes) ^(c)			
				CO ₂	CH ₄	N ₂ O	Other
Project <i>Salicornia</i> : Halophyte Cultivation in Sonora	Agriculture: <i>Salicornia</i> cultivation and crop management, and technical analysis of soil carbon accumulation and commercial feasibility of <i>Salicornia</i> cultivation	In progress	59 years + 7 months	3,255			
Scolec Té: Carbon Sequestration and Sustainable Forest Management in Chiapas	Land-use change and forestry: agroforestry, reforestation, sustainable harvesting, silviculture	In progress	30 years	55,000-1,210,000 ^(f)			
Nicaragua							
El Hoyo-Monte Galan Geothermal Project	Energy: alternative energy generation (geothermal)	Mutually agreed	37 years + 6 months	14,119,469			
Panama							
Commercial Reforestation in the Chiriquí Province	Land-use change and forestry: reforestation	Mutually agreed	25 years	57,640			
Russian Federation							
District Heating Renovation in Lytkarino	Energy: energy efficiency improvements	Mutually agreed	10 years	485,670			
Improving District Heating Efficiency in Metallurgichesky District of Cheliabinsk	Energy: energy efficiency improvements	Mutually agreed	10 years	828,269			
Reforestation in Vologda	Land-use change and forestry: assisted natural regeneration	Mutually agreed	60 years	858,000			

II. Summary of USIJI Projects

Table 1. (contd)

Title of Project	Type of Activity	Stage of Activity ^(a)	Remarks Project Life: ^(b)	GHG Benefits (tonnes) ^(c)			
				CO ₂	CH ₄	N ₂ O	Other
RUSAFOR–Saratov Afforestation Project	Land-use change and forestry: afforestation and reforestation	In progress	40 years (Sites I & II); 60 years (Sites III & IV)	292,699			
RUSAGAS: Fugitive Gas Capture Project	Energy: capture of fugitive methane emissions	In progress	27 years + 7 months		1,263,500		
Zelenograd District Heating System Improvements	Energy: energy efficiency improvements	Mutually agreed	30 years	1,575,840			
<i>South Africa</i>							
Guguletu Eco-Homes Project	Energy: energy efficiency improvements for houses	Mutually agreed	50 years	13,686			
<i>Sri Lanka</i>							
SELCO-Rural Solar Electrification Project	Energy: alternative energy generation (solar)	Mutually agreed	29 years	5,684,448			
TOTAL				286,805,122-287,960,122 ^(f)	5,708,500	4,608	

Table 1. (contd)

Title of Project	Type of Activity	Stage of Activity ^(a)	Remarks Project Life: ^(b)	GHG Benefits (tonnes) ^(c)			
				CO ₂	CH ₄	N ₂ O	Other
<p>(a) The following definitions are used for these categories:</p> <ul style="list-style-type: none"> • Mutually agreed = accepted USIJI proposal; activity is agreed between all Parties involved (designated national authorities), but project activities have not begun on site • In progress = any stage of activity between “mutually agreed” and “completed” • Completed = project is finished/terminated <p>(b) Project life refers to the estimated functional lifetime of the project, not necessarily the period over which GHG reductions are estimated to occur.</p> <p>(c) Reduction estimates are made by project developers. Estimates are in metric tonnes, full molecular weight basis. The USIJI Program does not accept these estimates <i>per se</i>, but will be monitoring and verifying emissions reductions as they are attained.</p> <p>(d) Since the U.S. government submitted the second report on Activities Implemented Jointly to the Secretariat of the United Nations Framework Convention on Climate Change in July 1997, two USIJI projects in Costa Rica from the first two proposal rounds—Project BIODIVERSIFIX and the protected area component of Project CARFIX—have been incorporated into the fourth-round USIJI project in Costa Rica, the Territorial and Financial Consolidation of Costa Rican National Parks and Biological Reserves. Therefore, these two projects are no longer reported as separate projects.</p> <p>(e) Reduced Impact Logging, or RIL, is being used by COPEC as a service mark for their particular program.</p> <p>(f) Actual reductions achieved will depend upon the amount of funding received.</p>							

III. USIJI Project Abstracts

The following text presents abstracts of the 36 USIJI projects. A detailed annual report for each of these projects is contained in Part Two: USIJI Project Reports (contained in Volume 2).

ARGENTINA

CAPEX, SA Electric Generation Project

The project is a single-cycle to combined-cycle conversion at a natural gas-fueled electric generation facility located in Neuquén, Argentina, that is expected to save over 30 million Tonnes of CO₂ emissions over its 30 year lifetime. The current CAPEX, SA powerplant, rated at 370 MW, consists of five Westinghouse 251 B11 gas turbines and one Westinghouse 701 D gas turbine, along with a 132 kV substation and associated transmission lines. As a low-cost generator, it is among the first to be dispatched within the grid and has a high rate of utilization.

The project will install a system to recover heat from the exhaust of each of the turbines and raise steam that will power a single 185 MW steam turbine. The result will be to increase the rated power output to 555 MW, with no increase in fuel use, and to lower the cost of operation per kWh, thereby displacing 185 MW of less efficient generation elsewhere on the grid.

The developer also has begun reforestation at the site and plans to continue to reforest 100 hectares per year. No greenhouse gas benefits due to reforestation are claimed, however.

Landfill Gas Management in Greater Buenos Aires Project

The Landfill Gas Management project in Greater Buenos Aires involves the development of gas collection and combustion systems at landfills owned and operated by Coordinación Ecológica Area Metropolitana, Sociedad del Estado (CEAMSE), a regional government agency. CEAMSE will install and operate a system of wells, pipes, blowers, and flares to recover and burn landfill gas (LFG) from the landfills it currently owns or will own in the future. CEAMSE is responsible for municipal solid waste (MSW) disposal in Greater Buenos Aires and the surrounding metropolitan area in Buenos Aires Providence. The project estimates that if 70 percent of the gas generated by the 5 million tonnes of waste deposited annually in the CEAMSE landfills is collected and combusted, the project could result in an emission reductions of 4 million tonnes carbon dioxide (CO₂) equivalent per year. Further reductions could be achieved through beneficial use of the gas.

BELIZE

BEL/Maya Biomass Power Generation Project

The BEL/Maya Biomass Power Generation Project involves the construction and operation of an 18 megawatt biomass waste-to-energy plant of an 18 megawatt biomass waste-to-energy plant to be located adjacent to the Belize Sugar Industries (BSI) sugar mill in Orange Walk, Belize. The plant will generate electrical power for sale to Belize Electricity Limited (BEL) and orange processors, and produce steam and electricity for in-house use and future sugar refining at BSI. The plant will be fueled by bagasse, orange processing wastes, and wood wastes from sawmills and other nearby sources. By displacing diesel oil-fired power generation with waste biomass fuel, the project is expected to reduce utility carbon dioxide (CO₂) emissions.

Rio Bravo Carbon Sequestration Pilot Project

The Rio Bravo Carbon Sequestration Pilot Project is a forestry project located in northwest Belize, adjacent to the Rio Bravo Conservation and Management Area (RBCMA). The project combines land acquisition and a sustainable forestry program to achieve greenhouse gas (GHG) benefits from forest growth (i.e., carbon sequestration) that would not have occurred in the absence of project activities. The objective of the project is to demonstrate an optimal balance between cost-effective carbon sequestration, economically sustainable forest yield, and environmental protection.

BOLIVIA

Noel Kempff Mercado Climate Action Project

The Noel Kempff Mercado Climate Action Project is a forest protection and sustainable management project located in eastern Bolivia. The project has expanded the existing Noel Kempff Mercado National Park, and will reduce future emissions within both the existing Park and Park expansion area, by eliminating legal and illegal logging activities (Component A). The project also will sequester carbon over time through the long-term protection and regeneration of the Park expansion area's already logged mahogany, oak, cedar, and palm forests, and through a mix of income-generating activities designed to support long-term preservation (Component B). Finally, GHG mitigation will also result from leakage prevention activities (Component C). Although GHG emission reductions and carbon sequestration are anticipated to occur within both the existing Park and the Park expansion area, the project will only claim GHG benefits associated with activities within the Park expansion area.

Rural Solar Electrification in Bolivia: Pilot Phase

The Rural Solar Electrification in Bolivia (Pilot Phase) Project will finance and install photovoltaic (PV) units of 48-55 watts in 400 households in the Oruro and Cuquisaca Departments of Bolivia, which are not serviced by the national electricity grid system. The PV units will be used for residential lighting, and will be used for residential lighting, and will displace diesel-wick lanterns.

The project's GHG benefits accrue from the avoided emissions of CO₂ that would be generated by diesel combustion in the absence of the project.

CHILE

Wind Energy Project

The Wind Energy Project in northern Chile involves a 37.5 MW wind energy installation. The project expects to include the installation of 50 wind turbines each capable of generating 750 kilowatts of energy. The facility will be constructed near the city of Calama in the desert region of Antofagasta. The preliminary project estimate indicates that the project would offset approximately 3,000,000 metric tons of CO₂ over a 20 year period by displacing coal-fired power generation within the Great Northern Interconnected System (SING). The International Institute for Energy Conservation (IIEC) and the Corporación Nacional del Cobre de Chile (CODELCO) are jointly developing the project to demonstrate a renewable energy resource and to realize reductions in greenhouse gas emissions.

COSTA RICA

Aeroenergía S.A. Wind Facility

The Aeroenergía S.A. Wind Facility Project is a privately owned and operated 6.4 megawatt wind facility consisting of 16 wind turbines. The project is located near the town of Tejona in the Guanacaste province of Costa Rica. Electricity generated by the plant will be sold to the Costa Rican Institute of Electricity to meet a portion of Costa Rica's energy demand. Because this generation will displace electricity that otherwise would have been generated by existing thermal plants, it reduces GHG emissions from fossil fuel combustion.

Doña Julia Hydroelectric Project

The Doña Julia Hydroelectric Project involves the construction and operation of a privately-owned and operated 16-megawatt hydroelectric plant that is expected to produce an estimated 83 gigawatthours (Gwh) to 87.8 Gwh of electricity per year, using the waters from the Puerto Viejo River and Quebradon Creek. The project will displace electricity and GHG emissions currently produced by thermal fossil fuel-burning facilities. The project facility became operational in October of 1996. Electricity generated by the project facility is being sold to the Costa Rican Institute of Electricity.

ECOLAND: Piedras Blancas National Park

The ECOLAND Project will preserve tropical forest through the purchase of approximately 2,500 privately-owned hectares (ha) in the Piedras Blancas National Park (formerly named the Esquinas National Park) in southwestern Costa Rica. The purchased land will be conveyed to the Costa Rican Park Service for permanent protection. GHG benefits accrue from conservation of existing carbon stocks on the park land that would have otherwise been deforested.

Klinki Forestry Project

The Klinki Forestry Project will convert pastures and marginal farmland to commercial tree plantations by promoting the planting of 6,000 ha of private farms with mixtures of selected fast-growing tree species in a matrix, with the Klinki tree as a major component. The trees will be harvested periodically for use in long-lived lumber products (such as utility poles) or left standing. The project will include small, medium, and large farms, educational pilot projects, and investor farms. Farmers will be given incentives for plantings in return for the rights to the sequestered carbon. The objective of the project is to develop a demonstration of the involvement of the farmer in carbon sequestration as an economic activity using the latest tree farming technology while providing GHG, wood production, and conservation benefits.

Plantas Eólicas S.R.L. Wind Facility

The Plantas Eólicas S.R.L. Wind Facility Project involves the construction and operation of a privately owned and operated 20 megawatt wind facility near the town of Tejona in the Guanacaste province of Costa Rica. The facility has been in operation since June 1996. Electricity generated by the plant is being sold to the Costa Rican Institute of Electricity to meet a portion of Costa Rica's energy demand. Because this generation will displace electricity that would have otherwise been generated by existing thermal plants, it reduces GHG emissions from fossil fuel combustion.

Territorial and Financial Consolidation of Costa Rican National Parks and Biological Reserves

The Territorial and Financial Consolidation of Costa Rican National Parks and Biological Reserves Project will transfer to the Costa Rican Ministry of Environment and Energy primary forest, secondary forest, and pasture lands that have been declared National Parks or Biological Reserves but have not been registered in the National Property Registry as part of the Forest Patrimony of the State. Until the registration process has been completed, these lands will remain under the management of their current owners and will be vulnerable to deforestation. The GHG benefits of the project accrue from the preservation of carbon stocks in the primary forest and from biomass growth (i.e., carbon sequestration) in the secondary forest and pasture. The project will also involve the construction of an Earth Center: a multidisciplinary development combining residential, commerce, and work activities to provide public education and entertainment and to promote ecotourism. Two previous USIJI projects, Project BIODIVERSIFIX and the protected area component of Project CARFIX: Sustainable Forest Management, have been incorporated into this project and are no longer reported as separate USIJI projects.

Tierras Morenas Windfarm Project

The Tierras Morenas Windfarm Project involves the construction and operation of a privately owned and operated 20 megawatt wind facility near the town of Tierra Morenas in the Guanacaste province of Costa Rica. Electricity generated by the plant will be sold to the Costa Rican Institute of Electricity (ICE) to meet a portion of Costa Rica's energy demand. Because this generation will displace electricity that would have otherwise been generated by existing thermal plants, it will reduce GHG emissions from fossil fuel combustion. The facility is anticipated to be operational in June 1998, and is expected to produce an estimated 76 gigawatthours of electricity per year.

CZECH REPUBLIC

City of Decin: Fuel-Switching for District Heating

The City of Decin: Fuel Switching for District Heating Project involves fuel-switching, cogeneration, and efficiency improvements at the Bynov District Heating Plant, located in Decin in the Czech Republic. The project has converted the plant from a coal (lignite) burning facility to a natural gas-fired plant, which provides both heat and potable hot water to local apartment blocks. A cogeneration facility for the production of steam and electricity has also been built, and improvements have been made to the distribution network to enhance the system's energy efficiency. On-site GHG emission reductions occur as a result of the fuel switch from lignite to natural gas and energy efficiency improvements. Off-site GHG emission reductions occur because the new Bynov plant is a cogeneration facility with the ability to produce both electricity and heat, and thus, reduces electricity consumption from the national utility (CEZ) grid.

ECUADOR

Bilsa Biological Reserve

The Bilsa Biological Reserve Project in Ecuador will preserve 2,000 ha of tropical rainforest through the purchase and incorporation of these lands into the newly created Bilsa Biological Reserve in the Montañas de Mache in the Esmeraldas province of Ecuador. By preventing the conservation of these lands to marginal cropland and cattle pasture, the project will avoid emissions of CO₂.

GUATEMALA

The Matanzas Hydroelectric Project

This project will construct a hydroelectric dam that will generate electricity by renewable resource (water), thereby displacing combustion of fossil fuels that would otherwise be used to generate electricity. The dam is a 14 MW medium-head hydroelectric project with two power plants. Most of the power generated by the two sites will be sold to the Guatemalan national electric utility, Instituto Nacional de Electricidad (INDE). The average annual combined production is estimated at 82.4 GWh/yr. Plant size and water flow rates indicate that the hydro facility on the Chilasco River will be operational 72% of the time; the hydro facility on the Matanzas River will be operational will be operational 64% of the time. The Matanzas project is estimated to reduce GHG emissions by a total of 315,900 mt C or 1,156,194 mt of CO₂ over a 15 year project life.

The Santa Teresa Hydroelectric Project

The Santa Teresa Hydroelectric project plans to construct a hydroelectric dam, which will generate electricity by a non-greenhouse generating renewable resource, water. Greenhouse emissions will be reduced by displacing the combustion of fossil fuels that are currently used in generating electricity with the hydroelectric power generated. This project will construct a 15MW, medium head hydroelectric dam. This will be constructed on the Rio Polochic and will be constructed within the boundaries of three farms (Fincas San Enrique, El Carmen, and Chentum near Tucura, Alta Verapaz) which are owned by AgroPolochic. The average annual production is estimated at 75 GWh/year. The resulting greenhouse gas emissions avoided are estimated at 22,566 tons of carbon or 82,742 tons of CO₂ annually for 15 years or 1.2 million tonnes of CO₂ over a 15-year project life. The life of the project has been estimated at 15 years.

HONDURAS

Bio-Gen Biomass Power Generation Project, Phase I

The Bio-Gen Biomass Power Generation Project (Phase I) involves construction and operation of a privately owned and operated 15 megawatt biomass waste-to-energy plant in Guaimaca, Honduras. The plant will utilize wood wastes generated from forest products processing in the region. The wastes, which include sawmill and logging residues, are currently burned under uncontrolled conditions or disposed of in rivers or other low-lying areas. Power produced by the plant will be sold to the national utility, Empresa Nacional de Energía Eléctrica, and will be displace electricity and associated GHG emissions that would have been produced by fossil-fuel burning facilities.

Bio-Gen Biomass Power Generation Project, Phase II

The Bio-Gen Biomass Power Generation Project (Phase II) involves construction and operation of a privately owned and operated 15 megawatt biomass waste-to-energy plant in Sava, Honduras. The plant will utilize wood wastes generated from forest products processing and palm oil production in the region. The wastes, which include sawmill, logging, and palm tree plantation residues, are currently burned under uncontrolled conditions, disposed of in rivers or other low-lying areas, or left to decay in place. Power produced by the plant will be sold to the national utility, Empresa Nacional de Energía Eléctrica, and will displace electricity and associated GHG emissions that would have been produced by fossil fuel-burning facilities.

Solar-Based Rural Electrification in Honduras

The Solar-Based Rural Electrification project will provide solar-based electrification to between 2,000 and 5,000 rural Honduran households not served by the electrical grid system. This technology will replace kerosene lamps with photovoltaic (PV)-powered electric lights and, thus, eliminate CO₂ emissions from kerosene combustion. In addition, charging batteries with stand-alone PV modules will displace the practice of charging batteries on grid electricity.

INDONESIA

Reduced Impact Logging for Carbon Sequestration in East Kalimantan

This project will implement Reduced-Impact Logging (RIL)^(a) techniques to reduce net GHG emissions associated with logging practices in East Kalimantan on the island of Borneo. The project involves the development of guidelines and procedures for implementing RIL techniques, on-site training in directional felling, and the implementation of RIL techniques on a total of 600 ha of forested land. Of the total project area, 300 ha are located in the Kiani Lestari forest concession, and 300 ha in the Bulungan Forest Reserve of the Inhutani II concession.

MEXICO

APS/CFE Renewable Energy Mini Grid Project

The APS/CFE Renewable Energy Mini Grid Project involves the development of a hybrid power supply system, utilizing solar, wind, and diesel capacity, to replace a 205-kW diesel generator in the town of San Juanico, Baja California Sur State (BCS State), Mexico. The project is being developed by two utilities in the United States—the Arizona Public Service Company (APS) and the Niagara Mohawk Power Corporation (NMPC)—and the Comisión Federal de Electricidad (CFE), the national utility of Mexico. Electricity generated by the hybrid system will extend electrical service from the current 3 hours per day to 24 hours per day and displace electricity generated purely by diesel combustion and the associated GHG emissions.

(a) Reduced Impact Logging, or RIL, is being used by COPEC as a service mark for their particular program.

Community Silviculture in the Sierra Norte of Oaxaca

The Community Silviculture in the Sierra Norte of Oaxaca Project will improve various aspects of existing silviculture and forest protection activities in six communities in rural southern Mexico. The project encompasses 49,027 ha of land, of which 31,847 ha are closed forest. The remaining land is a mix of open forest, agroforestry, permanent and shifting agriculture, degraded or grazed land, fallow, restored forest, and tree plantations. The main project activities are the rehabilitation of degraded forest through agroforestry and plantation establishment, and the prevention of further degradation of standing forest by controlling pests, disease, and fire. The project involves other actions, including improved forest management (e.g., increased growth and reduced impact logging); increased agricultural efficiency; and increased wood-use efficiency. The project's GHG benefits accrue from conservation of existing carbon stocks and increased carbon sequestration on forest and agricultural land.

Project *Salicornia*: Halophyte Cultivation in Sonora

Project *Salicornia* is Phase I of a two-phase project to cultivate a native halophyte (a salt-tolerant euphorb plant, *Salicornia bigelovii*) in a coastal desert region of northwest Mexico. Phase I is designed to research and demonstrate *Salicornia* cultivation on 30 ha of coastal land. The estimated GHG benefits of the project result from carbon accumulation and storage in the sandy soil. If Phase II is initiated, the cultivated crop could potentially serve as a valuable source of biomass material and food (cooking oil and fresh vegetable products), and could generate income for the local population.

Scolet Té: Carbon Sequestration and Sustainable Forest Management in Chiapas

Scolet Té is a forestry and land-use project located in northeast Chiapas, Mexico. This project will assist farmers primarily in nine Mayan indigenous communities located in highland and lowland ecoregions with developing small agroforestry and forestry enterprises. The GHG benefits of the project accrue from forest growth (i.e., carbon sequestration) that would not have occurred in the absence of project activities. In addition to reducing forest degradation and conversion to agriculture and improving the sustainability of local farming systems, this project is expected to contribute to the social and economic welfare of these communities as well as the preservation of the region's rich biodiversity.

NICARAGUA

El Hoyo-Monte Galan Geothermal Project

The El Hoyo-Monte Galan Geothermal Project involves the construction and operation of an approximately 70 megawatt (MW) geothermal plant that is designated to meet the demand for increased electricity supply in Nicaragua. Since this demand would otherwise be met by using diesel fuel, which is the predominant and also the most inexpensive electricity fuel source in Nicaragua, the flash-steam project reduces CO₂ emissions associated with fossil fuel combustion. The 70 MW unit of the geothermal project is expected to come on line in 2001. An additional 35 MW unit may be constructed in 2004, if a larger reservoir of geothermal resources is confirmed in the project site. The emission reduction estimates are based on displacement of a diesel-fueled unit with a geothermal unit of equal capacity.

PANAMA

Commercial Reforestation in the Chiriquí Province

The Commercial Reforestation in the Chiriquí Province will reforest 500 ha of currently degraded lands in the Chiriquí Province in the western region of Panama. The project area will be planted with teak (*Tectona grandis*), established as a certified teak plantation, and managed in a sustainable manner as a source of high quality hardwood. The project is estimated to result in net carbon sequestration through tree growth and production of durable wood products over a 25-year lifetime.

RUSSIAN FEDERATION

District Heating Renovation in Lytkarino

The District Heating Renovation in Lytkarino Project will implement energy efficiency improvements for rehabilitation and modernization of the central heating system of Lytkarino, a small city southeast of Moscow. The project will renovate the system by installing energy-saving measures and by replacing old equipment with new, energy-efficient equipment. All heat in the city is generated by natural gas-fired equipment. The increases in efficiency produce a decrease in natural gas and electricity consumption and, hence, reduce GHG emissions. The outdated and inefficient district heating systems currently operating in Russia represent a significant source of GHG emissions.

Improving District Heating Efficiency in the Metallurgichesky District of Cheliabinsk

The Improving District Heating Efficiency in the Metallurgichesky District of Cheliabinsk Project will implement energy efficiency improvements for rehabilitation and modernization of the central heating system. The project will renovate the system by installing energy-saving measures and by replacing old equipment with new, energy-efficient equipment. All heat in the city is generated by natural gas-fired equipment. The increases in efficiency produce a decrease in natural

gas and electricity consumption and, hence, reduce GHG emissions. The outdated and inefficient district heating systems currently operating in Russia represent a significant source of GHG emissions.

Reforestation in Vologda

This project is a reforestation project located in Vologda, about 300 miles northeast of Moscow. Two thousand hectares of collective state farmland adjacent to and within the Russky Sever National Park will be converted from hay fields back to forest. The land will be removed from hay production, and allowed to regenerate naturally, supplemented initially by planting on about 15 percent of the area. If regeneration proceeds slowly, additional planting or soil preparation will be implemented during the third year of the project. GHG benefits accrue from forest carbon sequestration that would not have occurred in the absence of project activities.

RUSAFOR–Saratov Afforestation Project

The Russian Federation/USA Forestry and Climate Change Project–Saratov Afforestation Project (RUSAFOR–SAP) was conceived as a Russian-American forest carbon offset joint implementation demonstration project. The purpose of the project is to evaluate the biological, operational, and institutional opportunities to manage a Russian forest plantation as a carbon sink. The project established plantations on four sites in the Russian Federation, totaling 900 ha. The sites were composed of marginal agricultural land and previously burned forest stands. GHG benefits accrue from avoided CO₂ emissions (due to avoided soil erosion and biomass decay), and from carbon sequestration (due to tree growth and soil carbon accumulation).

RUSAGAS: Fugitive Gas Capture Project

The RUSAGAS Project will reduce GHG emissions by capturing fugitive natural gas emissions at two compressor stations located in Pallasovka and Saratov, Russian Federation. The project, which has a lifetime of 25 years, is implementing a program to seal the leaking valves at the compressor stations, and thereby reduce methane (CH₄) emissions that would occur otherwise.

Zelenograd District Heating System Improvements

The Zelonograd District Heating System Improvements Project is an energy efficiency project in which new equipment will be installed in the district heating system of Zelenograd, Russian federation. New controls, valves, pumps, and heat exchangers will be installed at 28 sub-stations and one boiler facility. These improvements will allow better control of the space and hot water heating supplied by the district heating system, which will reduce natural gas consumption and hence, GHG emissions.

SOUTH AFRICA

Guguletu Eco-Homes Project

This project proposes to construct 6,000 energy-efficient Eco-Homes in the community of Guguletu, Republic of South Africa (RSA). The project represents an expansion of a pilot effort involving the US/RSA Bi-National Commission (BNC) to design and build Eco-Homes to replace standard low-cost homes being subsidized by the Reconstruction and Development Program (RDP) of the Mandela Administration. The estimated project life is 50 years and the carbon benefits are estimated to range from 10,000-13,000 metric tons or 40,000-50,000 tons CO₂ from reduced space heating. The project will also generate non-GHG environmental benefits by reducing local air pollution and improving indoor air quality. The project will contribute to technology transfer and capacity building by training local community members in all construction phases of Eco-Homes and to understanding the behavioral aspects of living in energy efficient homes in South Africa. A “green” loan program is being proposed to provide low-interest loans for additional energy-efficient measures.

SRI LANKA

SELCO–Sri Lanka Rural Solar Electrification Project

This project involves marketing solar home systems (SHS) as an alternative to the use of kerosene lamps for lighting and the use of diesel-electric charging of lead-acid batteries for powering small home appliances in Sri Lanka. Each SHS will consist of a 12-volt photovoltaic panel, a battery and charge controller, compact fluorescent lamps, and hardware. The project will expand on successful pilot efforts in Sri Lanka to provide SHS demonstration and installation services, consumer financing, and technical assistance to rural homeowners who lack access to grid electricity. The project team expects to install 812,000 SHS over a period of 10 years, and each SHS will generate GHG benefits for 20 years. The project will generate GHG benefits by displacing kerosene lamps and associated emissions of CO₂.

IV. Groundrules and Project Criteria for USIJI

Groundrules

The following describes the U.S. Initiative on Joint Implementation (USIJI), which shall be established as a pilot program.

Section I—Purpose

The purpose of the pilot program shall be to:

- A. Encourage the rapid development and implementation of cooperative, mutually voluntary, cost-effective projects between the U.S. and foreign partners aimed at reducing or sequestering emissions of greenhouse gases, particularly projects promoting technology cooperation with and sustainable development in developing countries and countries with economies in transition to market economies;
- B. Promote a broad range of cooperative, mutually voluntary projects to test and evaluate methodologies for measuring, tracking and verifying costs and benefits;
- C. Establish an empirical basis to contribute to the formulation of international criteria for joint implementation.
- D. Encourage private sector investment and innovation in the development and dissemination of technologies for reducing or sequestering emissions of greenhouse gases; and
- E. Encourage participating countries to adopt more complete climate action programs, including national inventories, baselines, policies and measures, and appropriate specific commitments.

Section II—Evaluation and Reassessment of Pilot Program

The pilot program shall be evaluated and reassesses within two years of its inception or within six months of adoption of international criteria for joint implementation by the Conference of the Parties to the United Nations Framework Convention on Climate Change, whichever is earlier.

Section III—Eligible Participants

A. Domestic

- (1) Any U.S. citizen or resident alien;
- (2) Any company, organization or entity incorporated under or recognized by the laws of the United States, or group thereof; or
- (3) Any U.S. federal, state or local government entity.

B. Foreign

- (1) Any country that has signed, ratified or acceded to the United Nations Framework Convention on Climate Change;
- (2) Any citizen or resident alien of a country identified in B(1) of this section;
- (3) Any company, organization or entity incorporated under or recognized by the laws of a country identified in B(1) of this section, or a group thereof; or
- (4) Any national, provincial, state, or local government entity of a country identified in B(1) of this section.

Section IV—Evaluation Panel

A. An Evaluation Panel is hereby established.

B. The Evaluation Panel shall consist of eight members, of whom:

- (1) One shall be an employee of the Department of Energy, who shall serve as Co-Chair;
- (2) One shall be an employee of the Environmental Protection Agency, who shall serve as Co-Chair;
- (3) One shall be an employee of the Agency for International Development;
- (4) One shall be an employee of the Department of Agriculture;
- (5) One shall be an employee of the Department of Commerce;
- (6) One shall be an employee of the Department of the Interior;
- (7) One shall be an employee of the Department of State; and
- (8) One shall be an employee of the Department of the Treasury.

C. The Panel shall be responsible for:

- (1) Advising and assisting prospective U.S. and foreign participants on the technical parameters (including with respect to baselines, measuring and tracking) of projects submitted for inclusion in the USIJI;
- (2) Accepting project submissions from eligible U.S. participants and their foreign partners;
- (3) Reviewing and evaluating project submissions, including baseline projections;
- (4) Approving or rejecting project submissions for inclusion in the USIJI, based on criteria contained in Section V;
- (5) Providing written reasons for its decisions, which shall be made publicly available, within 90 days of receipt of a complete submission or resubmission;
- (6) Certifying emissions reduced or sequestered estimated to result from projects;
- (7) Developing operational modalities for the implementation of the Program; and
- (8) Preparing an annual report of its activities, including a summary of approved projects.

Section V—Criteria

A. To be included in the USIJI, the Evaluation Panel must find that a project submission:

- (1) Is acceptable to the government of the host country;
- (2) Involves specific measures to reduce or sequester greenhouse gas emissions initiated as the result of the U.S. Initiative on Joint Implementation, or in reasonable anticipation thereof;
- (3) Provides data and methodological information sufficient to establish a baseline of current and future greenhouse gas emissions:
 - (a) In the absence of the specific measures referred to in A.(2) of this section; and
 - (b) As the result of the specific measures referred to in A.(2) in this section;
- (4) Will reduce or sequester greenhouse gas emissions beyond those referred to in A.(3)(a) in this section, and if federally funded, is or will be undertaken with funds in excess of those available for such activities in fiscal year 1993;
- (5) Contains adequate provisions for tracking the greenhouse gas emissions reduced or sequestered resulting from the project, and on a periodic basis, for modifying such estimates and for comparing actual results with those originally projected;
- (6) Contains adequate provisions for external verification of the greenhouse gas emissions reduced or sequestered by the projects;

- (7) Identifies any associated non-greenhouse gas environmental impacts/benefits;
- (8) Provides adequate assurance that greenhouse gas emissions reduced or sequestered over time will not be lost or reversed; and
- (9) Provides for annual reports to the Evaluation Panel on the emissions reduced or sequestered, and on the share of such emissions attributed to each of the participants, domestic and foreign, pursuant to the terms of voluntary agreements among project participants.

B. In determining whether to include projects under the USIJI, the Evaluation Panel shall also consider:

- (1) The potential for the project to lead to changes in greenhouse gas emissions elsewhere;
- (2) The potential positive and negative effects of the project apart from its effect on greenhouse gas emissions reduced or sequestered;
- (3) Whether the U.S. participants are emitters of greenhouse gases within the United States and, if so, whether they are taking measures to reduce or sequester such emissions; and
- (4) Whether efforts are underway within the host country to ratify or accede to the United Nations Framework convention on Climate Change, to develop a national inventory and/or baselines of greenhouse gas emissions by sources and removals by sinks, and whether the host country is taking measures to reduce its emissions and enhance its sinks and reservoirs of greenhouse gases.