

URUGUAY
Energy Efficiency Project

GEF Project Document

Latin America and Caribbean Region
LCSFE

Date: March 3, 2004 Sector Manager: Susan G. Goldmark Country Manager/Director: Axel van Trotsenburg Project ID: P068124 Focal Area: C - Climate change	Team Leader: Susan V. Bogach Sector(s): District heating and energy efficiency services (100%) Theme(s): Climate change (P), Infrastructure services for private sector development (S)
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Project Financing Data

☐ Loan
 ☐ Credit
 ☒ Grant
 ☐ Guarantee
 ☐ Other:

For Loans/Credits/Others:

Amount (US\$m): 6.875

Financing Plan (US\$m):	Source	Local	Foreign	Total
BORROWER/RECIPIENT		0.70	0.00	0.70
GLOBAL ENVIRONMENT FACILITY		4.29	2.58	6.88
LOCAL SOURCES OF BORROWING COUNTRY		3.79	2.29	6.08
SUB-BORROWER(S)		4.68	2.82	7.50
Total:		13.47	7.69	21.16

Borrower/Recipient: REPUBLIC OF URUGUAY

Responsible agency: MINISTRY OF INDUSTRY ENERGY AND MINES

Ministry of Industry, Energy and Mines (MIEM)

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Estimated Disbursements (Bank FY/US\$m):

FY	2005	2006	2007	2008	2009	2010			
Annual	0.61	1.62	1.89	1.18	1.03	0.55			
Cumulative	0.61	2.23	4.12	5.30	6.33	6.88			

Project implementation period: 71 months

Expected effectiveness date: 08/01/2004 **Expected closing date:** 06/30/2010

A. Project Development Objective

1. Project development objective: (see Annex 1)

The development objective of the Project is to increase demand for and competitive supply of energy efficient goods and services, contributing to: (a) improved productivity of energy use; (b) reduced reliance of the Uruguayan economy on imported electricity and fuels; and (c) reduced emissions from the energy sector.

The project's global environmental objective is to promote energy efficiency through: (i) building capacity and know-how among stakeholders; (ii) stimulation of consumer demand; and (iii) promotion of project development and investment financing.

2. Key performance indicators: (see Annex 1)

Key indicators for evaluating progress include achievement of the following, by the end of the project:

Development Objectives:

- Increased market share of energy efficient appliances;
- At least US\$23 million cumulative investment in energy efficiency investment projects;
- A minimum of 250 stakeholders trained on energy efficiency practices;
- At least 10 companies providing energy efficiency services in Uruguay.

Implementation Progress:

- A voluntary testing and labeling program in operation by the end of year 3, covering major appliances, lighting equipment, and industrial equipment;
- Uruguay Fund for Energy Efficiency financing of:
 - at least 90 energy efficiency project development studies using contingent grants;
 - at least US\$4.5 million in loans to companies implementing energy efficiency projects;
 - at least US\$6.8 million in total cost of energy efficiency investment projects.
- At least US\$6.0 million in energy efficiency investment projects completed by UTE;
- At least 2000 households served with electricity from solar home systems;
- Cumulative energy savings achieved of 559 ktpe equivalent;
- Cumulative avoided emissions of 1.4 million tons CO₂;
- Cumulative avoided emissions of 682,000 kgs NO_x, 5,500 kgs SO_x, 46,000 kgs particulates.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1)

Document number: 20355-UR **Date of latest CAS discussion:** 6/6/2000 - Progress Report 8/8/2002

The proposed Project would complement the Bank's involvement in the Uruguay Power Transmission and Distribution Project, which includes among its objectives the promotion of more efficient use of energy. The Administracion Nacional de Usinas y Transmisiones Electricas (UTE) found it difficult to invest in activities aimed at improving energy use due to perceived market barriers and high transaction costs. The proposed GEF project would help to overcome these obstacles by creating an enabling policy and regulatory environment. The project would also stimulate UTE, the private sector and the public to invest in energy efficiency improvements.

The proposed project is in line with the CAS, which supports the GOU's strategy to enhance competition, encourage private sector participation, diversify energy sources, protect the environment, support programs and technologies that promote the efficient supply and use of energy, and facilitate access of the poor to basic services. The project would support CAS objectives. It would:

- Promote energy efficiency and environmental protection by addressing market failures and strengthening institutional capacity;
- Increase the productivity of the economy by reducing energy intensity;
- Reduce the exposure of the economy to external shocks by reducing its dependence on imported fuels;
- Encourage private sector participation by supporting emergent Energy Service Company (ESCO);
- Help to integrate energy efficiency in the reformed regulatory framework for the energy sector.

1a. Global Operational strategy/Program objective addressed by the project:

The strategic goal of the proposed Project is fully consistent with GEF Operational Program No. 5, the objective of which is to disseminate least economic cost, energy-efficient technologies and promote more efficient use of energy. The Project is also consistent with the GEF strategy to leverage financing from other public and private sources to increase financing for energy efficiency investments. As a signatory to the United Nations Framework Convention on Climate Change, Uruguay has identified areas of opportunity to answer the Kyoto Protocol's call for intensified national efforts to implement low-cost greenhouse gas (GHG) mitigation measures. These include abatement of carbon dioxide emissions through energy efficiency and conservation.

Consistent with GEF Operational Program No. 6, the Project includes providing modern energy to isolated rural populations through the Solar Home Systems (SHS) under an ESCO-based arrangement.

Uruguay is committed to act on climate change issues through implementation of the proposed Project and identification of additional projects that could be financed under carbon trade arrangements. The Ministry of the Environment will participate, through the National Directorate of Environmental management (DINAMA), in the Project Steering Committee, which will provide political guidance for project implementation. DINAMA, the climate change office, was created in 1994 to implement commitments made under the United Nations Framework Convention on Climate Change (UNFCCC). It is the focal point of the GEF in Uruguay. One of DINAMA's main goals is to help identify and implement energy efficiency and carbon sequestration projects.

2. Main sector issues and Government strategy:

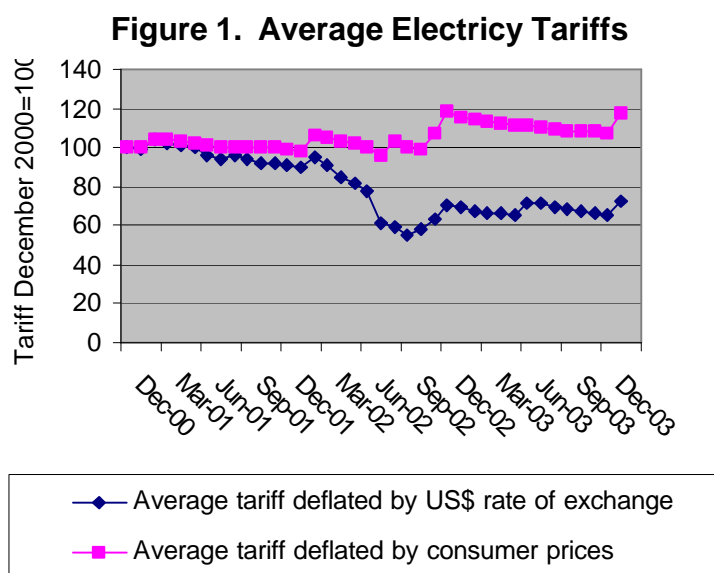
Economic recession and the financial crisis in Argentina resulted in a severe financial and banking crisis in Uruguay in 2002 and early 2003. After the recovery gains momentum, a priority will be to increase economic competitiveness and integration with regional markets. The GOU aims to increase competitiveness by reducing the cost of energy in the production of goods and services, through an energy efficiency program.

While the majority of Uruguay's power currently comes from hydro, the sector will become increasingly dependent on thermal generation. All hydrocarbon fuels are imported. The main sector issues reflect the need to: (i) expand generation capacity to meet the increasing demand in a sustainable way, including moderating the growth of thermal generation, with associated negative environmental impacts; (ii) improve the efficiency of the energy market to reduce costs, displace some of the new capacity requirements and improve sustainability; (iii) moderate the predominance of residential consumption in the power sector and its large role in peak demand; (iv) supply the dispersed rural population with modern energy; and (v)

improve the overall energy efficiency of the economy to reduce energy imports, mitigate external price shocks, and fulfill international commitments to reduce global emissions.

The sectoral strategy of the GOU is to: (i) expand generation capacity using natural gas imported from Argentina and, eventually, convert existing fuel-oil based generation to reduce costs and emissions; (ii) accelerate development of a regulatory framework based on the 1997 Electricity Law (Law 16.832). The framework aims to reform public utilities, promote regional integration, introduce competition in power generation through the creation of a wholesale power market and increase private sector participation in new power generation; (iii) increase regional energy trade, (iv) develop the natural gas market through the private sector; (v) introduce public/private partnerships in the oil business; (vi) promote competition among various energy sources; and (vi) facilitate availability and acquisition of energy efficient goods and services.

Past energy policies have supported orderly development of the sector. As a result of the economic crisis and the steep devaluation of the local currency, tariffs reached its lowest historical level, measured in US\$ dollars, during the second half of 2002 (see Figure 1 below). While still about 25% lower in US\$, as a result of periodic tariff increases, tariffs are now almost 18% higher in constant local currency than pre-crisis levels. At US\$0.07 per kWh without taxes and US\$0.09 per kWh with taxes, tariffs continue to be at the higher end of prices in the region. The financial prospects of UTE continue to be sound, as a result of the tariff policy and the temporary suspension of the annual transfers to the GOU of about 15% of UTE's revenues.



While energy prices are high enough to encourage energy efficiency investments, both the policy and the regulatory environment need to be adapted to specifically encourage energy efficiency. A national energy policy study is now underway by the Ministry of Industry, Energy and Mining (MIEM), with financing from the IBRD Public Services Modernization Technical Assistance Loan. The results of the study are expected to be available soon after the effectiveness of the Project and will be used to design detailed work on energy efficiency policy and regulation.

A program to promote energy efficiency, at this time, would benefit from synergy with efforts already underway to promote a switch to natural gas. Interviews and research on Uruguay's industrial sector indicated significant potential for energy saving (see Table 1), as well as a base of technical knowledge and

interest among a small number of entrepreneurs in providing energy efficiency services. This suggests that a market-oriented program to achieve increased energy efficiency, including private/public sector partnerships, is feasible. The proposed Project would incorporate such a market-oriented approach.

Table 1: Summary of Energy Savings Potential, Based on 2 Year Pay-back

Sector	Fuels (ktpe)	Electricity (GWH)	Cogeneration Potential (GWH)	Net Savings Primary Energy (ktpe)	Total Primary Energy Use (ktpe)	Savings
Industrial	26.5	69	286	41	452	9%
Residential		115		23	711	3%
Commercial	2.2	77		16	198	8%
Governmental		8		2	N/A	N/A
Total	28.7	269	286	82	1,554	5%

Source: Econergy, "Energy Sector and Capital Markets Assessment and Program Design, Uruguay Energy Efficiency Project, June 2003", revised November 2003.

3. Sector issues to be addressed by the project and strategic choices:

As noted above, the market study carried out during project preparation showed that in Uruguay, as in many other countries, there is a large potential for financially viable energy investment projects. Using a criteria of payback of the investment cost within two years, energy savings equal to five percent of total energy use were identified as viable. However, as in other countries, energy efficiency investments are not taking place on a significant scale.

3a. Barriers to energy efficiency in Uruguay

Energy efficiency investment in Uruguay faces barriers similar to those faced in other countries. The three major barriers to investment in energy efficiency to be addressed by the project are:

- Lack of demand for energy efficient goods and services. Public knowledge about the financial and economic benefits of energy efficiency measures is limited. The market does not provide customers with information on potential cost savings, energy savings and emission reductions. For example, vendors of appliances and equipment provide little information about annual operating costs or energy use that would help purchasers to identify the most efficient units. Energy efficiency standards are lacking, as are testing, certification and labeling of electrical equipment. Industry associations are not actively promoting energy efficiency. Businesses in Uruguay, as elsewhere, tend to invest in capital equipment to increase output rather than reduce costs.
- Limited capacity and know-how among key stakeholders. Information on energy efficiency measures or the ways to structure, finance, and operate ESCO-based saving initiatives is scarce in Uruguay. Effective mechanisms for disseminating information to users, policymakers, and regulators have not been developed. While there are two companies that have begun to operate as ESCOs, their access to capital and ability to market their services have been limited. Regarding demand-side management measures by the utility, UTE has been concerned about Demand Side management (DSM) and ESCO activities reducing potential electricity sales.
- Lack of project development and investment financing. As in other countries, the lack of experience in commercial financing for such projects poses the most important obstacle. In addition, the market infrastructure needed to provide technical assistance in project design, financing, implementation or verification does not exist. Further, the few projects undertaken on a

performance contracting basis have not received commercial financing. In the case of the existing ESCOs, company principals have used personal loans or company resources to secure funds.

In addition to sector-level barriers, the financial and credit crisis pose macro-level challenges that will make promotion of investment in energy efficiency especially risky.

- Uncertainty about economic growth. From 1991 to 1998, Uruguay's economy grew at an average of 4 percent. However, GDP contracted by 2.8 percent in 1999, 1.4 percent in 2000, 3.4 percent in 2001 and 10.8 percent in 2002. Growth is expected to resume in 2004. If the recovery is slow, the willingness and ability of companies to invest in energy efficiency would be reduced.
- Availability of credit from banking system. As noted above, energy efficiency projects are difficult to finance until commercial banks gain hands-on experience. The banking crisis will compound this difficulty in Uruguay. The Economist Intelligence Unit reports that in the year prior to May 2003, total assets in the banking sector declined from US\$10.8bn to US\$8bn. As a result, credit from the banking sector is now reported to be limited and costly, mainly available in US dollars to firms that have income in foreign exchange and/or the ability to provide substantial guarantees. Since energy efficiency savings are earned in local currency, financing would be difficult for energy efficiency investments.
- Relative energy prices. Many of the investment opportunities identified by project studies for efficiency improvement are contingent upon a switch by industrial and commercial enterprises to natural gas. Currently, prices of electricity and fuels reflect in general economic costs and natural gas is competitive. However, if prices fail to reflect economic costs, fuel-switching with attendant opportunities for energy efficiency may not happen on a large scale.

In the rural sector, while recent studies indicate there is demand for Solar Home Systems (SHS) for institutional and residential use in remote areas, there has been no national program to supply remote areas with electricity from solar systems.

3b. Strategic choices

Given the difficult financial conditions and the recession, delaying the project was considered. However, it was considered important to proceed with an energy efficiency program at this time for several reasons. First, the switch to natural gas, a one time opportunity for associated energy efficiency improvements, is underway. Second, the recession will increase competitive pressures on companies, creating an environment that should encourage efficiency improvements. Third, it will take several years for the project activities to gain momentum. By that time, both the economic and credit conditions are expected to have improved.

Therefore, it was decided to proceed with the proposed project, to overcome the specific barriers to energy efficiency activities. However, the project has been designed to both overcome barriers and minimize the potential effect of macro-level risks.

The project will address barriers to energy efficiency investments by:

- Increasing awareness of stakeholders. The project would provide information to consumers and businesses about the economic and financial benefits that would result from energy saving. It would support awareness creation and capacity building activities including information campaigns, dissemination of best practice, workshops, etc., to support a culture of energy efficiency in Uruguay.

A combination of voluntary testing/labeling and applying minimum efficiency standards to

equipment would be supported, to replicate successful programs in other countries. The labeling program would be coordinated with similar programs in the Southern Cone Common Market (MERCOSUR), favoring economic integration and regional trade. Advertising and promotional campaigns will catalyze consumer, commercial, industrial and governmental purchases of energy-efficient equipment. Based on an evaluation of the tax and tariff structure, such a program could be undertaken with a net benefit for the GOU (with funding and support from GEF).

- Encouraging ESCO mechanism. The project would promote the development of companies to deliver energy efficiency services. Within UTE, project funds will leverage UTE resources to create an Energy Savings Unit (ESU) that will operate on ESCO principles. The ESU will demonstrate that provision of utility-based energy efficiency services can generate profit, assist UTE to maintain market share and increase client fidelity. In parallel, technical assistance will be provided to develop contractual instruments for energy performance contracting and to train companies interested in operating as ESCOs. The rationale for starting the program on a two-track basis is to capitalize on UTE's strength, on the one hand, while providing technical assistance and financing to the nascent ESCO sector that is emerging. It is expected that UTE-ESU's initial market will focus on the mass market of electricity efficiency in residential housing, public and commercial buildings, municipal street lighting, and rural electricity service. The emerging private ESCO sector is expected to focus on developing customized projects for the industrial and commercial sectors, improving efficiency of both electricity and fuel using equipment.
- Facilitating access to finance. A Uruguay Fund for Energy Efficiency (UFEE), to be capitalized with the GEF grant, will provide financial resources that can be accessed by ESCOs, as well as by local business. The UFEE would provide commercial loans for investment projects, as well as contingently recoverable grants to cost-share up to 67 percent of the cost of feasibility studies. The grant would be repaid if the investment project proceeds to be financed by the UFEE. This offering is needed to redress the chronic lack of access to financing for efficiency investments, which has been compounded by the country's recent financial crisis. UTE-ESU would be allowed to access the UFEE funds for projects where it follows the Brazilian model of utility sub-contracting of ESCOs to deliver energy efficiency payments.

While macro-economic uncertainties impose risks that are outside of the Project's control, minimizing these risks was incorporated into the project design by:

- Minimizing impact of uncertainties of growth and credit. The project design aims to mitigate the macro-level risks by: (i) conservatively estimating the size of the investments to be catalyzed by the project; (ii) lengthening the project life to six years; (iii) allowing maximum flexibility in the use of the UFEE (e.g. allowing UTE-ESU access, provided that it mobilizes co-financing and follows the Brazilian model of sub-contracting ESCOs to carry out activities).
- Minimizing uncertainty of energy pricing. MIEM would provide before effectiveness a policy letter confirming the GOU's commitment to: (i) adopt regulations that will encourage energy efficiency; and (ii) maintain in general economic pricing. Uruguay has a history of economic pricing of energy. Also, switching to natural gas remains a key element of MIEM's policies. The take-or-pay contract that has been signed with Gasoducto Cruz del Sur for gas supply from Argentina provides a strong incentive for economic pricing.

C. Project Description Summary

1. Project components (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

The project consists of three main components, each described below: Component 1. Energy Efficiency Market Development (implemented by MIEM); Component 2. Utility Based Energy Efficiency Services (implemented by UTE); and Component 3. Project Management (implemented by MIEM and UTE)

Component 1: Energy Efficiency Market Development (US\$10.83 million including US\$4.50 million GEF). This component, to be implemented by MIEM, aims to strengthen the market for energy efficient goods and services. The component will support energy efficiency activities in all economic sectors and will support saving of all types of energy, including electricity and fuels. It includes the following activities:

(a) *Market Strengthening (US\$2.925 million including US\$1.625 million GEF)* The project activities intend to strengthen market infrastructure that would encourage energy investment, including: (i) policies and regulations for promoting energy efficiency; (ii) awareness creation and capacity building programs, including a best practice program and technical and commercial assessments; (iii) a labeling and standards program including a voluntary energy efficiency seal for main household appliances, lighting equipment, building thermal envelope and industrial equipment; and (iv) standard contractual instruments to support ESCO-based projects.

(b) *Uruguay Fund for Energy Efficiency (UFEE) (US\$7.905 million including US\$2.875 million GEF)* The UFEE would facilitate financing of energy efficiency projects. The Project would support: fund management services, including fund set-up and marketing (US\$0.4 million GEF); a Project Development Facility to provide contingent grants to cost-share feasibility studies (capitalized with US\$0.5 million GEF); and a Project Finance Facility to provide term debt to energy investment projects by emergent ESCOs, business and industry (capitalized with US\$1.975 million GEF). The UFEE would be managed by a commercial bank, through a Trusteeship Agreement, on behalf of MIEM. It would make loans in either US dollars or local currency (see Annex 5 for details).

Component 2: Utility Based Energy Efficiency Services (US\$8.980 million including US\$1.875 million GEF). This component, to be implemented by UTE, would assist the creation and operation of an Energy Savings Unit within UTE (UTE-ESU). This unit would develop new business activities for UTE in energy efficiency services, especially demand side management. It would offer services: to UTE; through UTE to its clients (e.g. financing of efficient equipment through payments on utility bill); and directly to clients such as businesses. There are three separate sub-components:

(a) *Establishment of UTE-ESU (US\$1.645 million, including GEF US\$0.355 million)* This component includes GEF support for technical assistance to advise UTE on establishing the unit and preparing a business plan, and to carry out market surveys. UTE's own resources would support the costs of staffing, administration and office costs; marketing; training; and monitoring and evaluation of activities of the unit.

(b) *DSM and Energy Efficiency Investments by UTE-ESU. (US\$6.011 million including GEF US\$1.245 million).* These activities would comprise three initial projects that have been defined during preparation and further follow-up investments that will be determined during the early years of operation. The initial pipeline of projects includes: (i) provision of efficient lights, water heaters and other energy efficient equipment to residential and commercial customers in the municipalities of Ciudad de la Costa, Paysandú, Colonia del Sacramento and San José de Mayo; (ii) installation of new municipal lighting equipment in Maldonado, San Jose, Sorriano and Valleja; and (iii) reduction of

losses, and increased end-use efficiency and payment levels in poor urban areas. The business plan of the ESU will be reviewed and adjusted on an annual basis, to take into account the results of ongoing projects and lessons learned. New projects may be added, as long as they meet the criteria for energy efficiency investments, and the GEF/UTE financing ratio of one to four is maintained.

(c) *Solar Home Systems (SHS) (US\$1.324 million including GEF US\$0.275 million).* This will include provision of efficient modern energy services to low-income rural customers, using solar home systems.

Component 3: Project Management. (US\$1.350 million including GEF grant of US\$0.500 million).

This component would be executed by MIEM, with the support of UTE. MIEM would have overall responsibility for project management through a Project Management Unit, but would be assisted by UTE, which has demonstrated experience in the areas of financial management, procurement, disbursement, and reporting, through previous World Bank projects. Both UTE and MIEM would make a strong contribution to project management costs, together contributing US\$0.8 million as shown in Tables 2 and 3. GEF resources would support the incremental operating cost of the project.

Table 2. Bank and GEF Participation
(Millions of US\$ dollars)

Component	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Bank financing	GEF financing (US\$M)	% of GEF financing
1. Energy Efficiency Market Development	10.83	51.2	0.00	0.0	4.50	65.4
2. Utility-based Energy Efficiency Services	8.98	42.4	0.00	0.0	1.88	27.3
3. Project Management	1.35	6.4	0.00	0.0	0.50	7.3
Total Project Costs	21.16	100.0	0.00	0.0	6.88	100.0
Total Financing Required	21.16	100.0	0.00	0.0	6.88	100.0

Note: The Project is to be supported by IBRD Power Transmission and Distribution Loan. Funds from this loan are shown as part of UTE's contribution to the project in Table 3 below and throughout the document.

Table 3: Project Cost and Financing Plan
(Million of US\$ dollars)

Component	GEF Grant	MIEM Budget	UTE	Public/Private	Total
1. Energy Efficiency Market Development	4.500	0.300	0.000	6.030	10.830
1.1 Market Strengthening	1.625	0.300	0.000	1.000	2.925
1.2 Uruguay Fund for Energy Efficiency (UFEE)	2.875	0.000	0.000	5.030	7.905
2 Utility Based Energy Efficiency	1.875	0.000	7.105	0.000	8.980
2.1 Establishment of Energy Savings Unit	0.355	0.000	1.290	0.000	1.645
2.2 DSM and Energy Efficiency Investments	1.245	0.000	4.766	0.000	6.011
2.3 SHS Activities	0.275	0.000	1.049	0.000	1.324
3. Project Management	0.500	0.400	0.400	0.050	1.350
3.1 MIEM	0.500	0.400	0.000	0.050	0.950
3.2 UTE	0.000	0.000	0.400	0.000	0.400
Total	6.875	0.700	7.505	6.080	21.160

Note: Investments in this table are for the six years of the project. For a ten year period, UFEE investments are expected to be US\$9.50 million and UTE-ESU investments are expected to be US\$13.3 million. Total project cost for 10 years, including re-investment would be US\$30.30 million.

2. Key policy and institutional reforms supported by the project:

The Project would help to incorporate the energy efficiency concept in the overall energy strategy of Uruguay. It would support development of policies and regulations, including adaptation of the regulatory framework, to encourage energy efficiency. For example, the Project's technical assistance components would examine ways to include costs for energy efficiency programs in energy prices. They would also investigate possible refinements to the new regulatory framework, such as implementation of a system benefit charge, levy on energy prices, or the obligation to include financially attractive DSM measures in the utilities investment plans. This would channel additional resources to energy efficiency activities, thereby enhancing the sustainability of various project components.

The Project would also carry out market-based programs to promote the use of energy efficient equipment in residential, industrial and commercial facilities. The training, educational, and marketing activities of the project would disseminate knowledge on energy saving and create a culture of thrift with respect to energy. Initial projects and dissemination of best practices would stimulate investment in energy efficiency products and services. The energy efficiency activities would create synergies with GOU efforts to encourage fuel switching to natural gas, by encouraging a switch to the most energy efficient technologies.

3. Benefits and target population:

The main economic benefits of the Project would derive from energy savings of industrial, commercial, and residential users. The savings will come from: (i) initial and replication energy efficiency investment projects; (ii) the adoption of more efficient appliances and equipment resulting from testing, certification, and labeling activities; and (iii) the use of renewable technologies by dispersed poor rural populations.

Two sub-components would specifically benefit poor households. The poor neighborhoods sub-project to be carried out by UTE-ESU would aim to reduce electricity use and electricity costs of poor urban households, through use of more efficient lights and equipment. The SHS projects targets provision of

electricity services to isolated rural households, most of whom are poor.

All components would reduce emissions of pollutants. A conservative estimate that measures only the direct impact of the project is that it would result in 1.4 million tons of CO₂ reductions over the lifetime of equipment installed over the six years of implementation of the project, and some 2.1 million tons of CO₂ emissions reductions from equipment installed over a ten-year period. Other environmental benefits associated with energy conservation are also expected, such as reduction of health damages caused by air pollution in urban areas, as well as reduction of negative impacts of acid deposition on agriculture and ecosystems. Inhabitants of rural areas will gain access to more modern energy resources, reducing their exposure to indoor air pollution. In addition, the project will enable UTE to defer investments in power generation and distribution facilities.

4. Institutional and implementation arrangements:

4.1. Policy and Guidance

A Project Steering Committee, chaired by MIEM and including UTE, Office of Planning and Budget (OPP), Electricity and Water Services Regulation Unit (URSEA), and DINAMA would be established by a resolution of MIEM, to provide overall guidance and general coordination for project implementation.

4.2. Project Implementation

MIEM would be the executing agency of the Project and would be the recipient of the GEF grant on behalf of the GOU. MIEM would implement the Market Development Component. This would include the creation of the Uruguay Energy Efficiency Fund (UFEE), through a Trusteeship agreement with a commercial bank. UTE would implement the Utility-based Energy Efficiency Services component. MIEM would implement the Project Management Component, with UTE's support with respect to financial management, procurement, disbursement and reporting. MIEM would sign a subsidiary agreement with UTE, outlining UTE's responsibilities for implementation of the Utility-based Energy Services component, and support to be provided to MIEM for project management. MIEM would also sign an agreement with URSEA to assist in the implementation of a testing and labeling system for the main classes of appliances and equipment. The Technical Standards Institute of Uruguay (UNIT) would be contracted to implement the testing and labeling system, under the guidance of URSEA.

4.3 Activities Implemented During Preparation

A GEF PDF-B Grant (US\$340,000) financed preparation work that included: (i) a market survey and research to estimate the potential for energy efficiency in Uruguay, and the incremental cost analysis; (ii) development of a financial model and draft fiduciary agreement for management of the UFEE; (iii) studies to confirm initial project pipeline and prepare three EPC-based projects for implementation by UTE-ESU; (iv) development of a business plan for UTE-ESU; (v) workshops to build consensus among all relevant stakeholders, including NGOs; and (vi) development of an operational manual for the project including a monitoring and evaluation (M&E) plan.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

The first alternative considered was the business as usual option, that is, meeting the growing demand for energy by expanding the energy supply system. However, this approach would not have been consistent with the national strategy to reduce energy supply risks by minimizing the dependence on imports. Also, this option would not have helped the GOU in its efforts to comply with its commitments under the United Nations Framework Convention on Climate Change.

The alternative of direct investment in large energy efficiency projects was discarded in favor of a market-based approach (implementing initial projects that would allow learning by doing and disseminating best practice and the results), complemented by regulatory reform to encourage energy efficiency and programs to enable users to make informed decisions when purchasing energy-consuming appliances and equipment. This approach is justified because Uruguay has some promising experience with performance contracting and energy efficiency services, but it is not well understood among policy-makers, the public and much of the business and industry communities.

Within the market based alternative, a strategy of relying only on the emergent ESCOs to build up capacity for the provision of energy efficiency services was considered, but this was deemed risky due to the weakness of the incipient ESCOs. Instead, a multi-track approach is proposed, to capitalize on the experience of UTE, while cultivating energy efficiency activities by others, including the emergent ESCOs. The dissemination of experience, together with the capacity building activities and the financial support, would reinforce the conditions for energy efficiency and ESCO development. In addition, the standards and labeling programs would encourage direct investments by individuals and businesses in energy efficiency improvements.

While it is possible that competition between UTE-ESU and the private ESCOs could occur, leading to crowding out of private ESCOs, there is evidence both from UTE and from the industrial sector that suggests that this will not happen. For UTE, the activities of UTE-ESU will test whether the utility can diversify its service offering and enhance its position in the energy market now that natural gas is available to a growing segment of the population. The ESCOs, meanwhile, will attempt to build up their balance sheets by implementing quick-payback projects beginning with existing clients and others within their established networks. The Brazilian model of a utility-based energy service company that subcontracts to private energy service companies is an attractive alternative that will be encouraged by the decision to allow UTE-ESU access to the financing of UFEE, if it sub-contracts to the ESCOs.

2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
Energy Efficiency	Brazil – Energy Efficiency (*)	U	S
	Ecuador – Power and Communications Modernization and Rural Services (*)	S	S
	China -Energy Conservation (*)	S	S
	Poland - Krakow Energy Efficiency	S	S
	Romania- Energy Efficiency*	S	S
	China- Energy Conservation 2*	S	S
	Croatia - Energy Efficiency* (Under Preparation)		
	Uruguay- Power Transmission and Distribution	S	S
Sustainable Electrification of Rural Areas with Private participation	Argentina -Renewable Energy in Rural Markets (*)	U	S
Other development agencies			
UNDP	Uruguay -Climate Change Enabling Activity		
IADB	Uruguay - Program to Strengthen the Environmental Management Capacity Directorate (DINAMA). Completed		
IADB	Uruguay - Environmental Management Support (Planned)		
ADB	Uruguay -Technology laboratory of Uruguay (LATU)		
IADB	Uruguay - Sustainable Markets for Energy Efficiency and Clean Energy Sources		
IADB	Uruguay-Multi-sector Global Financing Program III		
IADB	México – Energy Efficiency		
GTZ	Argentine-German Energy Efficiency and Productivity Project (PIIEP)		

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

*Supported by GEF.

3. Lessons learned and reflected in the project design:

The project design benefited from the results of a recent evaluation of Bank/GEF supported energy efficiency projects, "World Bank Review of GEF Energy Efficiency Portfolio". Lessons learned from projects in North America, Europe and client countries (China, Hungary, Brazil, Romania and Poland) were taken into consideration in designing project interventions to address market barriers. As a result, the project incorporates a broad range of interventions, aimed at: (i) creation of an enabling environment through policy, regulation and capacity building; (ii) delivery of energy efficiency services through utility-based and independent ESCOs; (iii) market transformation incentives through labeling programs, that involve consultation with key stakeholders; (iv) cost-sharing feasibility studies through contingent grants; and (v) provision of investment financing through loans.

Independent ESCOs have demonstrated that they can capture energy savings and reduce costs to users in several countries, while the utility-based model has been found suitable where experience is missing or the risks perceived by the private sector are high, as in Uruguay. The experience of Uruguay with performance contracting in an area related to energy efficiency, as well as the presence of nascent ESCOs, creates fertile ground for the emergence of an active ESCO sector, provided that financing is made available.

During Project implementation, the PMU will seek to exchange experiences and establish collaboration with similar initiatives in the region, particularly in the MERCOSUR area. In particular, the Project will look to the ongoing Argentine-German Energy Efficiency and Productivity Project (PIIEP), to share experiences in the implementation of EE initiatives aimed to small and medium enterprises (SME). If the PIIEP is extended (current closing date is December 31, 2004), the possibility of stronger collaboration would be explored, e.g. twinning arrangements for implementing initiatives in the areas of best practices, dissemination and policies.

Standards, testing and labeling programs have demonstrated that they can contribute positively to transforming the energy efficiency market in a sustainable way. The implementation of a six-step process in pilot programs, as proposed by Uruguay, has resulted in the establishment of new standards and introduction of energy efficiency labels in Thailand, China, Mexico, Colombia, Ghana, the Republic of Korea and the Philippines, among others. Uruguay is also participating in initiatives focusing on energy efficiency labels, such as the MERCOSUR Standards Organization (AMN) and the Pan-American Standards Commission (COPANT). This experience has been incorporated in the project design, e.g., the preliminary selection of a label design to be adopted by all countries in the MERCOSUR area.

Lessons learned in rural electrification initiatives aimed at providing modern energy through SHS in several countries, such as Bangladesh, Dominican Republic, India and Sri Lanka, show that leading projects incorporate a combination of features that include private sector and NGO involvement, credit mechanisms, first-cost subsidies, support for policy development and capacity building, codes and standards, and marketing programs. These lessons, combined with those learned in Uruguay through the installation and operation of SHS in community facilities in rural areas have been applied to the design of the project. Its main features include the use of first-cost subsidies during the initial phase of the program, a long term leasing system to facilitate ownership, and capacity building and policy development support. Such arrangements are expected to reduce implementation risks, along with UTE's experience in rural electrification, and its presence in rural areas.

4. Indications of borrower and recipient commitment and ownership:

The activities included in the Project are clearly identified priorities in the GOU's energy sector strategy. The President of Uruguay approved the preparation of the energy efficiency project with GEF support through a PDF Block B grant.

Uruguay ratified the United Nations Framework Convention on Climate Change on August 18, 1994 and the Kyoto Protocol on February 5, 2001. The country submitted the first communication and is in the process of completing the second communication. The first communication recognized the need to promote energy efficiency measures to reduce GHG emissions.

5. Value added of Bank and Global support in this project:

The experiences of the Bank and GEF in financing energy efficiency programs in Latin America and around the world helped design a market-based program in Uruguay. The Bank's involvement encouraged a comprehensive project design, including policy and regulatory aspects, private sector participation and consultation with civil society. Bank expertise in monitoring and evaluation helped to strengthen these features in the project design.

While Uruguay's banking system is beginning to emerge from the financial crisis, financing is difficult for any investment. Given that energy efficiency investments and ESCOs are still a novelty in Uruguay, energy efficiency projects would encounter difficulties in getting commercial bank financing even after the banking system begins to recover. The GEF contribution and UTE funds will therefore be critical to provide financing during the start-up years of the program. As energy efficiency investments by companies prove profitable and the ESCOs establish the credibility of the energy performance contracting principle and risk sharing arrangements through successful energy efficiency projects, greater commercial bank involvement will be induced in this sector.

The Bank and GEF's knowledge of regional energy efficiency institutions and practitioners would facilitate the exchange of experiences, the creation of regional standards and practices, and the integration of a network of regional laboratories that could help to maximize the use of existing regional infrastructure. This approach would support the expansion of a more competitive market for energy efficiency equipment in the MERCOSUR area and beyond.

E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

- ☐ Cost benefit NPV=US\$ million; ERR = % (see Annex 4)
- ☐ Cost effectiveness
- ☒ Incremental Cost
- ☐ Other (specify)

The project is designed to overcome the barriers to energy efficiency, which will lead to reduced energy consumption per unit of output and cost savings.

All energy efficiency subprojects to be carried out by UTE-ESU or supported by UFEE will be selected to meet criteria that ensure that they are economically and financially viable and technically, commercially, managerially and environmentally sound. The projects to be financed should have the following characteristics: (i) relatively short payback time; (ii) at least 50 percent of each project's benefits come from energy savings; and, (iii) the technology must be well proven in the proposed application, to minimize technological risk.

Experience with energy efficiency projects in the region and the market analysis carried out during project preparation show that these projects typically reach high rates of return and have short term payback. Since relatively few energy efficiency projects have been executed to date in Uruguay, it is expected that there will be an ample supply of economically viable projects. The challenge will be to catalyze the development of such projects by viable clients, including ESCOs.

The Project is expected to play a critical role in financing energy efficiency investments in the immediate future. The analysis of the banking sector and the energy efficiency market assessment shows that few energy efficiency investments would be made without the Project, amounting to US\$3.0 million. Those investments form the baseline against which the results of the GEF project are measured. These investments represent avoided carbon emissions of 1.85 million metric tons. The GEF case shows a net increase in investment in energy efficiency of US\$14 million over 6 years and US\$23 million over 10 years, resulting in an additional 1.4 million tons of carbon dioxide reduction from projects installed over 6 years, 2.1 million tons of avoided carbon dioxide emissions after 10 years. The incremental cost of the project includes US\$2.53 million in TA grants, US\$3.845 million in GEF grants supporting investment financing, and US\$0.5 million for incremental project management costs, for a total of US\$6.875 million. The incremental GEF cost per metric ton carbon dioxide avoided, based on 10 year results, is US\$3.3/ton carbon dioxide or US\$12.1/ton carbon.

2. Financial (see Annex 4 and Annex 5):

NPV=US\$ million; FRR = % (see Annex 4)

The Uruguay Fund for Energy Efficiency. The UFEE would be managed by a commercial bank, according to a Trusteeship Agreement between the commercial bank and MIEM. The process of selecting the commercial bank and negotiating the trusteeship agreement will be completed by effectiveness. The UFEE would have two windows: (i) a Project Development Facility, using contingent grants to cost-share project preparation expenses with project sponsors; and (ii) a Project Financing Facility to provide debt finance for investment in energy efficiency projects. While the project implementation period would be six years, it is likely that the UFEE would continue after the project closes (see also Section F1).

Annex 5 discusses the operation of the fund. It contains an illustrative analysis of the functioning of the fund over a ten-year period, based on experience in other countries. The analysis provides an overview of the key parameters that define the performance of the UFEE, the trade-offs involved, key elements needed in the incentive scheme for the participating commercial bank, and an assessment of potential outcomes, given different assumptions.

The Project Development Facility would provide contingent grants to share the costs of preparing feasibility studies for projects. If the resulting investment project is financed by the UFEE debt facility, the contingent grant would be repaid. If the feasibility study does not result in a project that is financed by UFEE, the contingent grant would not be repaid. Based on this mode of operation, the contingent grant facility would gradually be depleted. In the illustrative simulation, the facility is estimated to finance 94 feasibility studies over five years, at an average cost of US\$7500, resulting in 38 projects (40 percent) reaching financial closure. Key factors impacting the success of this facility include operating costs and percentage of grants resulting in successful financing of projects.

The Project Finance Facility would support investments in energy efficiency by providing debt financing. While subject to negotiation with the commercial bank, it is intended that the UFEE will provide subordinated debt to debt by the commercial bank, with the share of the bank increasing over time. Using conservative assumptions, the UFEE is expected to catalyze investments of about US\$6.80 million over the six years of project implementation and US\$9.50 million over a ten year period (see Annex 5).

UFEE will initiate operations in a climate of uncertainty resulting from the recent financial and banking

crisis in Uruguay. However, the illustrative case and sensitivity analysis for the Project Finance Facility show that even with wide variation in key assumptions the UFEE Project Finance Facility can leverage three times the GEF grant in energy efficiency investments in the ten year period of the project. In the illustrative case, the capital reserve value at the end of ten years would be about US\$115,000 less than at the beginning of the project, even with 15 percent defaults. However, there are scenarios whereby the capital reserve loses significant value. Particularly important variables are transaction volume, operating costs, share of commercial bank loan and default rate. If the default rate were to double, the value of the fund would be about half of the initial value, at the end of ten years.

Clearly, high quality management of the UFEE is essential. If UFEE were able to obtain an investment-grade rating, it may be able to issue debt to the AFAPs (pension funds), which by law are required to invest in Uruguay, have substantial liquidity at present, and are in principle interested in placing resources with UFEE.

UTE-Energy Savings Unit. UTE's present financial situation is sound. Financial projections show no problems in the medium term. The size of the proposed project is small compared to the current level of annual investments and revenues, and therefore, does not pose risks to UTE's finances. A business plan has been prepared for UTE-ESU's energy efficiency operations, based on the initial projects defined and their expected financial returns. The average financial internal rate of return for projects over the six year period is 20 percent.

Funding for UTE-ESU activities will be provided by a GEF contribution of US\$1.875 million and financing from UTE of US\$7.105 million. The GEF contribution will be paid into the ESU against technical assistance and the expenditures in the ESU's projects. UTE-ESU is expected to generate additional resources to allow for total investments in projects to reach US\$13.3 million within 10 years.

Projections show that for DSM activities involving reduction of electricity losses and improvements in the load factor, the profits from UTE-ESU would more than offset UTE losses from sales reductions due to savings. The impact of activities over and above those of UTE-ESU could produce UTE additional lost sales not offset by corresponding profits from energy efficiency activities. However UTE-ESU would allow UTE to capture part of the benefits of the energy efficiency market. The value added by UTE-ESU energy efficiency services would also allow UTE to compete more successfully to keep market share in the water heating and the space conditioning markets.

With respect to rural electrification activities based on the provision of solar home systems (SHS), costs will be covered during the first phase of 1000 systems by: (i) capital cost subsidy of US\$125/system from GEF and US\$320/system from UTE; and (ii) monthly payments from the users for five years, which would be sufficient to cover the cost of financing part of the remaining capital costs as well as the operation and maintenance costs. UTE would own the systems for the first five years, after which ownership will be transferred to the users. UTE would continue to provide optional operational and maintenance services for an additional five years, for a monthly fee. In the second phase of 1000 systems, cost reductions in solar home systems, combined with increased payment capacity and a ten year lease period, are expected to eliminate the need for the GEF grant and reduce UTE's grant.

Fiscal Impact:

The fiscal impact of investments in energy efficiency measures will be positive as a result of taxes and duties paid by project participants. Implementation of energy efficiency measures in public facilities should reduce expenditures at both national and municipal levels.

3. Technical:

Market survey work, including audits of representative industrial facilities, was carried out during project preparation. These studies conservatively estimated the potential market for commercially viable energy efficiency financing at about US\$60 million.

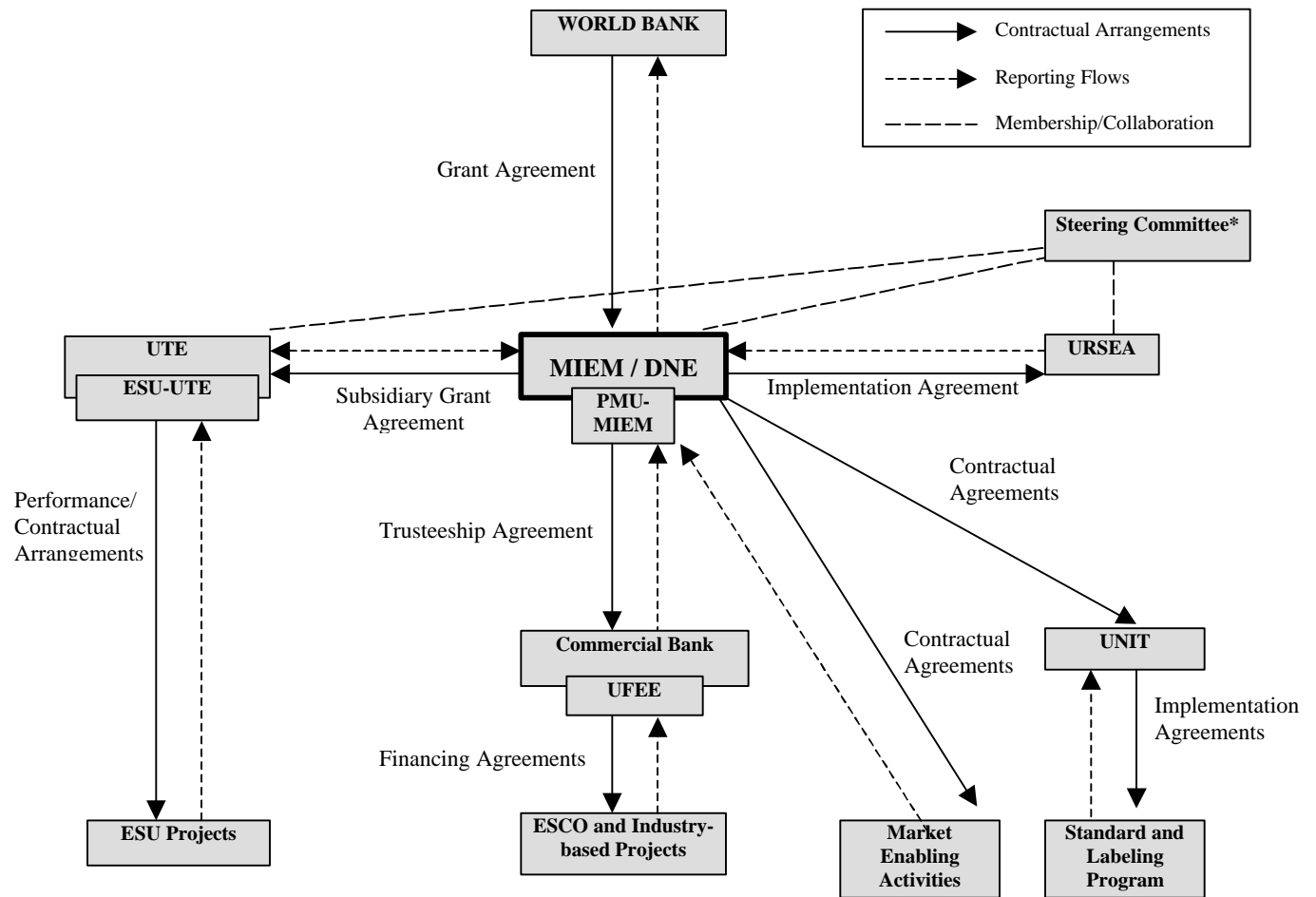
The main energy efficiency technologies that meet the criteria defined in economic section (E1) are lighting, heating and cooling equipment, burners and boilers, variable speed drives, condensers for power factor improvement, compressors, controls, and steam traps. The Uruguayan markets for these technologies are generally well served by a large range of local producers and dealers of imported equipment. Due to the current financial situation, it is expected that for the first years of UFEE operation, projects will be financed mainly in creditworthy industrial companies, the building sector and municipal services. Some of these entities were represented at the Energy Efficiency Workshop held in Montevideo in August 2003, to discuss the project design.

During implementation, project development will be actively pursued by MIEM under the Market Development component, through outreach activities such as workshops and seminars targeted at potential clients; capacity building activities; and contingent grant funds available to cost share feasibility studies to prepare detailed bankable investment proposals, which will serve as the initial pipeline for consideration of the UFEE.

4. Institutional:

The institutional arrangements for the project are summarized in Figure 2 below.

Figure 2: Institutional Arrangements



* The Steering Committee includes representatives of MIEM, UTE, OPP, URSEA, and DINAMA.

4.1 Executing agencies:

MIEM would be the executing agency and would receive the grant on behalf of the Republic of Uruguay. MIEM would implement the Market Development Component, while UTE would implement the Utility Based Energy Efficiency Services Component. The UFEE would be implemented by a commercial bank, based on a Trusteeship agreement with MIEM. MIEM would implement the Project Management Component, with the support of UTE for financial management, procurement and reporting. A subsidiary project agreement between MIEM and UTE would detail the role and responsibilities of UTE. The Project would include capacity building to enable MIEM to strengthen its managerial capacity and role as policy maker, as well as overseer of the activities of the UFEE.

4.2 Project management:

MIEM's Project Management Unit (PMU) would have responsibility for financial management, procurement and reporting, but would make use of UTE's financial management, procurement and information systems, which have met the Bank's reporting requirements in the Power Transmission and Distribution Project. UTE's support will be defined in the subsidiary agreement. Notwithstanding MIEM's general responsibilities, UTE-ESU would be fully responsible for management of implementation of UTE's investment activities under the Project.

4.3 Procurement issues:

UTE's procurement department would be responsible for UTE's procurement activities and would also assist the PMU and UTE-ESU on procurement issues. UTE has extensive experience with Bank procurement. To accelerate implementation of the component aiming to provide modern energy services based on solar panels to low-income dispersed rural populations, UTE has acquired about 1,000 solar home systems (SHS) following the Bank's procurement rules. The GEF grant would be partially used to facilitate access to the first customers and market penetration of the program. To this end, UTE has asked that this equipment be considered for retroactive financing by GEF.

4.4 Financial management issues:

Overall project financial management will be managed by the PMU, with assistance from UTE's accounting department, which has extensive experience with Bank procedures. Accounting reporting will follow standard procedures and accounting practices. MIEM will provide, within six months of the end of each fiscal year an audit report, prepared by external auditors satisfactory to the Bank, on special accounts, project accounts, and statement of expenses (SOE). Notwithstanding MIEM's responsibilities, UTE will be responsible for financial management of its part of the Project.

For the UFEE, MIEM will sign a Trusteeship Agreement with a commercial bank which will manage the trust funds. MIEM has experience with operation of such a trust fund to encourage innovation in industrial technology, which used the Banco de la República de Uruguay (BROU) as the agent. MIEM would select the commercial bank based on a competitive process.

5. Environmental: Environmental Category: F (Financial Intermediary Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

No adverse environmental effects are expected to result from the project. There would only be modest interventions in the case of upgrading/retrofitting of energy equipment, which must comply with local environmental regulations. Positive impacts will include savings in power generation and fuel use, which would help reduce the risks of global warming by reducing carbon dioxide production. This will happen even in the mostly hydroelectric Uruguayan generation system because, at the margin, the economic

dispatching will reduce the production of electricity by thermal units that use hydrocarbons.

To be eligible for financing, the subprojects must meet all Uruguayan environmental requirements, approvals, and procedures, and shall be consistent with the World Bank environmental policies and procedures, as well as the guidelines of the Bank's Pollution Prevention and Abatement Handbook.

Environmental screening procedures will apply to all subprojects financed by the Project, and will be described in the Operational Manual. The project will finance sub-projects to be carried out by UTE (through the ESU) and by project sponsors that will seek financing from the UFEE. The target investments for financing involve small to medium sized projects for replacement of old polluting technologies that would fall under category B and C. Category A sub-projects will not be financed by the Project.

UTE-ESU will apply environmental procedures that have been judged adequate by the Bank for the Power Transmission and Distribution Project. The commercial bank in charge of UFEE will be required to hire an environmental consultant (according to TOR in the Operational Manual) to assess its environmental capacity to screen subprojects. If then judged necessary, the commercial bank will be required to hire an environmental consultant to establish adequate procedures for environmental screening and provide needed staffing resources.

5.2 What are the main features of the EMP and are they adequate?

Most sub-projects are expected to be Category C. Any Category B projects are expected to have minimal impacts that would be dealt with by EMPs as needed.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft:

No sub-projects that require EAs would be financed under this project.

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

N.A.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

Emissions reduction indicators are included in performance monitoring.

6. Social:

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

The proposed project poses no resettlement, land acquisition or social development issues. The project is expected to improve affordability of energy services and, therefore, has a positive net social impact on energy consumers in general and on rural poor populations in particular. As noted in Section C3, the Poor Neighborhoods sub-component to be carried out by UTE-ESU will specifically benefit poor urban households, while the SHS component would specifically target isolated rural households, most of whom are also poor.

6.2 Participatory Approach: How are key stakeholders participating in the project?

A participatory approach has been used in the planning and design of Project activities, and will continue to be used in implementation. A two-way consultation (information sharing and feedback solicitation) was initiated during project preparation, in order to inform the public, engage key stakeholders and incorporate feedback into the program design. Consultants with knowledge of regional energy efficiency initiatives were

closely involved in project preparation.

A highly successful workshop was held on August 13-15, 2003, sponsored by MIEM, OPP, UTE and URSEA, with the participation of a broad range of stakeholders including government officials, energy efficiency experts from companies and NGOs, professional, commercial and industrial associations, large consumers of energy, and academia. The design of the project was presented and discussed in the context of experience in Europe, the United States, and other countries. The result of the meeting was a strong endorsement of the Project design, with its attention to regulatory and policy environment, institutional strengthening, awareness creation and assistance with financing. Brazil's experience with public/private partnership, (i.e. a utility-based ESCO that sub-contracts private sector ESCOs) and Mexico's experience with a National Energy Savings Council were considered especially interesting for Uruguay, and will be further investigated during implementation.

Further public participatory activities are envisaged during project implementation. The Project will include intensive public awareness campaigns to promote the labeling program and more targeted campaigns to industry and commercial entities, and potential ESCOs about energy efficiency opportunities and financing mechanisms. The commercial Bank managing the UEEF will promote the financing of preparatory studies and the energy efficiency projects among ESCOs and large energy consumers, e.g. industrial and commercial entities. The labeling program will allow for ample stakeholder participation in all implementation stages, including manufacturers, importers, dealers, consumer associations, the regulatory body of the energy sector, policy makers, the national standard agency, laboratories and academia. Training activities are expected to involve 250 stakeholders which will be trained in energy efficiency practices. Market surveys, including consultation with civil society, will be conducted to help measure project performance. In low-income areas, social workers will participate in project implementation and evaluation of results.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

Before starting project preparation, representatives of key stakeholders, including representatives of the industry and NGOs were consulted to ensure public participation. A local NGO active in energy issues (CEUTA) was contacted to discuss project features, participated in the workshop mentioned above, and continues working actively with DINAMA. The information dissemination and consultation features of the project will facilitate public participation during implementation, as well as extend ownership and improve prospects for sustainability.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

The project incorporates participation of social workers in the design and implementation of pilots affecting low-income population. Workshops and seminars will include participation of representatives of civil society to verify project direction and social effects.

6.5 How will the project monitor performance in terms of social development outcomes?

Surveys will be conducted to help measure project performance, as part of monitoring the SHS and Poor Neighborhoods sub-components of UTE's activities.

7. Safeguard Policies:

7.1 Are any of the following safeguard policies triggered by the project?

Policy	Triggered
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input type="radio"/> Yes <input checked="" type="radio"/> No

Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

NA

F. Sustainability and Risks

1. Sustainability:

Long-term sustainability was at the heart of the design of the Project. The majority of the GEF funds are dedicated to three activities: (i) the standards and labeling program; (ii) the creation of a new profit center and business line within UTE-ESU; and (iii) the Uruguay Fund for Energy Efficiency (UFEE). These activities were specifically designed to be self-sustaining. The approach proposed to the standards and labeling program has been successfully applied and sustained in a number of countries. It is expected that the revenues generated by the UTE-ESU will enable it to operate profitably, and to grow, so that it will eventually be established as a separate company from UTE. The solar home systems to be installed under UTE-ESU will be supported by the consumers' willingness to pay for operation and maintenance, on a long term basis. The UFEE has been shown to operate and maintain a substantial share of its capital under a wide range of assumptions. At the same time, it is expected that UFEE's role will diminish as commercial financing increases.

The Republic of Uruguay is expected to operate the UFEE for at least the six years of the project. At the end of this period, the decision may be made to continue the operation of the UFEE or to close the Fund as it is no longer needed. If the UFEE is permanently closed at any time in the future, any undisbursed funds allocated for this component will be cancelled and returned to the GEF. Funds disbursed for sub-loans, and repaid by the beneficiaries to UFEE under the respective sub-loan agreements, will be allowed to be utilized for other GHG mitigation activities by the Republic of Uruguay, in consultation with the Bank and GEF.

1a. Replicability:

The project is replicating mechanisms used in other GEF-supported energy efficiency projects, with a stronger emphasis on policy and regulatory aspects. The UFEE is one of the first GEF-supported energy efficiency financing facilities to be established as a debt fund, and will provide lessons on such a fund.

Implementation of the initial phases of the SHS program by UTE-ESU, will contribute to UTE's ability to meet its objective of completing the electrification of a substantial number of rural households with off-grid systems. A successful implementation of GEF support (Phase 1 with both tariff and technical assistance support; Phase 2 with only technical assistance support) will lay a solid basis for completion of the program. If the first two phases are successful, demand will be created among households to receive the benefits of modern energy through future replications.

2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

Risk	Risk Rating	Risk Mitigation Measure
From Outputs to Objective		
Inadequate social and political support for sustainable development	S	-Awareness creation, education and training activities by project -Policy and regulatory development
Unfavorable macro-economic and credit conditions discourage energy efficiency investments	S	- Conservative estimate of investments under project - Flexibility in approaches - Project length extended to 6 years - Component to support UTE-ESU which can more easily finance EE investments.
Energy prices do not encourage energy efficiency measures and/or slowdown of reform and modernization of regulatory framework.	M	- Policy letter from GOU to Bank - Bank technical and financial support to MIEM and URSEA under a separate project - TA and training on energy sector reform and EE regulations
Expected savings do not materialize	S	- Savings estimated by experienced consultants - Share risks among participants
Energy savings achieved do not last	M	- Creation of stable market-based mechanisms to save energy (UTE-ESU, ESCO, and standards and labeling program)
Public and NGOs are not supportive	M	- Participatory approach to project design and implementation, workshops, seminars and technical visits and educational programs
From Components to Outputs		
Inadequate counterpart commitment, capacity and funding	M	- Engage counterparts early in the project to demonstrate benefits - Build capacity in implementing agencies, industry and local banks - Work closely with the Office of Budget and Planning
UFEE funds mismanaged and funds used for purposes not intended	M	- Trust fund to be administered by commercial bank under legal agreement governed by new Law of Fideicomiso, which requires external audits
Market acceptance of energy efficiency	M	-Awareness creation campaign as part of labeling program
Competent ESCOs do not emerge/develop	S	- Training, education and information dissemination on best practices, technical

Energy investment projects do not materialize for financing by UFEE	M	guidelines, and cases of success - Arrange technical visits and workshops to discuss local and foreign experiences - Contingent grant funds available to share feasibility study costs - Training, education and information dissemination on successful projects .
High default rate on UFEE loans	S	- Commercial bank evaluates credit risk under Trustee agreement - Detailed criteria for approval of equity, loan or guarantee
Appropriate co-financing not available	M	- Flexible mechanisms to attract financing (tiered loans, guarantees) - Possible use of IADB Multi-sectoral Loan Platform - Letters of interest obtained
Overall Risk Rating	S	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

3. Possible Controversial Aspects:

No controversial aspects are foreseen.

G. Main Conditions

1. Effectiveness Condition

- Operational Manual has been issued and put into effect;
- MIEM Project Management Unit has been established and staffed, including financial management and procurement capacity;
- UTE Energy Savings Unit has been established in a manner satisfactory to the Bank; and
- Subsidiary agreement with UTE has been signed.

2. Other [classify according to covenant types used in the Legal Agreements.]

Disbursement Conditions

- No funds will be disbursed for sub-grants and sub-loans under Project component 1, unless the Bank receives evidence satisfactory to it that the Uruguay Fund for Energy Efficiency (UFEE) has been established (including the definition of credit, technical and environmental review procedures).

H. Readiness for Implementation

- ☐ 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- ☒ 1. b) Not applicable.

- ☐ 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- ☐ 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- ☐ 4. The following items are lacking and are discussed under loan conditions (Section G):

I. Compliance with Bank Policies

- ☒ 1. This project complies with all applicable Bank policies.
- ☐ 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

Susan V. Bogach
Team Leader

Susan G. Goldmark
Sector Manager

Axel van Trotsenburg
Country Manager/Director

Annex 1: Project Design Summary
URUGUAY: Energy Efficiency Project

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
Sector-related CAS Goal: Increase competitiveness and sustainability of Uruguay's economy by increasing energy efficiency	Sector Indicators: Energy savings of 559 ktpe by project completion	Sector/ country reports: Project reports	(from Goal to Bank Mission) Social and political support for sustainable development and reduction of GHG emissions
GEF Operational Program: Removal of Barriers to Energy Efficiency and Energy Conservation (Program No. 5)	Outcome / Impact Indicators: Cumulative carbon dioxide emission reductions of 1.4 million tons Cumulative reductions of 682,000 kgs NOx, 5,500 kgs SOx and 46,000 kgs particulates	National Communication to the UNFCCC	
Project Development Objective Increase demand for and competitive supply of energy efficient goods and services	Outcome/Impact Indicators Increased market share of energy efficient equipment and appliances (see Table A) Emergence of at least 10 local energy service companies, including UTE-ESU	Project reports Implementation and completion reports Market surveys	(from Objective to Goal) Adequate macroeconomic conditions and availability of commercial financing for medium term investments
Global Objective: Overcome barriers of (a) lack of capacity and know-how among stakeholders; (b) lack of consumer-driven demand; and (c) lack of EE financing and investments	Outcome / Impact Indicators: At least 250 stakeholders trained in energy efficiency practices At least US\$23 million in energy efficiency projects financed	Project reports: Implementation and completion reports Market surveys	(from Objective to Goal)
Output from each Component: 1. Enabling framework for the EE market created.	Output Indicators: Testing and labeling program implemented by	Project reports: Implementation and completion reports	(from Outputs to Objective) Rational energy pricing based on economic costs and

2. Energy efficiency market stimulated by facilitation of the acquisition of equipment and services.	<p>year 3</p> <p>At least US\$6.8 million of energy efficiency sub-projects supported by UFEE and and US\$6.0 million by UTE-ESU</p> <p>At least 2000 customers served with SHS</p>	Market surveys	<p>continuation of regulatory reform</p> <p>Energy savings materialize as expected</p> <p>Energy savings are maintained</p> <p>NGOs and public are supportive</p>
Project Components / Sub-components:	Inputs: (budget for each component)	Project reports:	(from Components to Outputs)
1. Market Development	US\$10.830 million	Implementation and completion reports	- Counterpart commitment, capacity and funding
1. Market Strengthening	US\$2.925 million	Project Management Reports	- UFEE managed well
1.2 Uruguay Fund for Energy Efficiency (UFEE)	US\$7.905 million	Supervision reports	- Market accepts energy efficiency concept
2. Utility-based Energy Efficiency Services	US\$8.980 million	Audit reports	- Competent ESCOs emerge
2.1 Establishment UTE-ESU	US\$1.645 million		- UFEE clients repay loans
2.2 DSM and Energy Efficiency Investment by UTE-ESU	US\$6.011 million		
2.3 Solar Home Systems	US\$1.324 million		
3. Project Management	US\$1.350 million		
3.1 MIEM	US\$0.950 million		
3.2 UTE	US\$0.400 million		
Total	US\$21.160 million, including US\$6.875 million GEF Grant		

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Monitoring and Evaluation Procedures

The basic structure of the monitoring and evaluation system would revolve around the aggregation upwards of sub-project indicators to assess the success of the Project. Data gathering on the identified indicators will be conducted as follows.

At the *sub-project* level, a monitoring system will record data on project activities. Under this system, project participants would be provided with a spreadsheet-based tool for recording of project impacts and selected indicators on financial transactions, implementation progress and impacts (energy savings and emission reductions). Effort will be made to minimize the amount of external information and expertise required of the project sponsor.

Each sub-project would submit an electronic report (spreadsheet) giving a regularly updated picture of how well the Project is meeting its goals, any deviation, and suggested corrective measures.

At the *component* level, UFEE and UTE-ESU will gather transaction information (volume, loan/grant performance, etc.) and benefits (energy savings and emissions reduction) related to their project investment and implementation activities.

The Project Management Unit within MIEM would be responsible for recording, organization, and presentation of the direct results from the Standards and Labeling Program and the Training and Education Programs.

At the program or market transformation level, a third-party monitoring and evaluating specialist, from a specialized firm or NGO, would be hired to by MIEM to: (a) review and check the accuracy of information reported by sub-project sponsors; and (b) conduct surveys and estimate all information which is not readily available to the grant recipient or Program managers. This would specifically include: country and sector level indicators related to market transformation aspects and possibly any indirect environmental benefits and changes to the financial sector. They would also be responsible for reviewing all data presented by the project sponsor to insure quality.

The main goal of collecting this data will be to assess the viability of and the impact of the GEF financed Project on the Uruguayan energy efficiency market. The indicators will reflect the list of project level indicators that are aggregated to assess the overall viability of the project activities and the growth (or lack there of) in the sector as a whole. This will be complemented by a small set of sector-wide data. The sector-wide data will mainly reflect on the quality of the sector and the service provided. This aggregated data will be used to show general trends in the sector as a whole.

Table A: KEY PERFORMANCE INDICATORS

Indicator	Unit	Baseline	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Cumulative Total
OBJECTIVE									
Increased Market Share of Efficient Appliances									
·Residential and commercial lighting	(%)				2%	5%	7%	10%	N/A
·Municipal lighting	(%)				5%	10%	15%	20%	N/A
·Water heaters	(%)				10%	15%	20%	25%	N/A
·Refrigerators	(%)				5%	10%	20%	25%	N/A
·Air conditioners	(%)				5%	10%	20%	25%	N/A
·Electric motors	(%)				5%	10%	15%	20%	N/A
Stakeholders trained on EE practices	number	0	25	25	50	50	50	50	250
Investment in EE	Million US\$	0	\$1.40	\$2.50	\$3.50	\$4.50	\$5.40	\$5.40	\$22.70
· Financed by UFEE and UTE-ESU	Million US\$	0	\$1.40	\$1.90	\$2.20	\$2.30	\$3.10	\$3.10	\$14.00
· Financed by others	Million US\$	0	\$0.00	\$0.60	\$1.30	\$2.20	\$2.30	\$2.30	\$8.70
Firms providing energy efficiency services	Number	0	3	3	1	1	1	1	10
PROJECT OUTPUTS									
UFEE									
·Feasibility studies financed	Number	0	10	20	20	20	20	0	90
·Amount of loans	Million US\$	0	\$0.10	\$0.50	\$1.00	\$1.50	\$1.60	\$1.50	\$6.10
·Total cost of projects financed by loans	Million US\$	0	\$0.30	\$0.60	\$1.20	\$1.30	\$1.70	\$1.70	\$6.80
UTE-ESU									
·Investment in EE and DSM#	Million US\$	0	\$0.5	\$0.6	\$0.8	\$1.0	\$1.5	\$1.5	\$6.00
SHS	No.		1000		1000				
·Investment	Million US\$		\$0.60		\$0.60				\$1.20
Standards and Labeling									
·Cost of program	Million US\$	0	\$0.61	\$0.01	\$0.02	\$0.01	\$0.02	\$0.01	\$0.68
Total project									
·Investments in energy efficiency	Million US\$	0	\$1.40	\$1.23	\$2.64	\$2.26	\$3.23	\$3.24	\$14.00
·Lifetime energy savings	ktpe	0	17	30	113	119	136	144	559
·Lifetime CO2 reductions*	000 tons	0	55	76	286	289	334	351	1391
·Lifetime NOx reductions	000 kg	0	21	37	138	145	166	176	682
·Lifetime SOx reductions	000 kg	0	0.2	0.3	1.1	1.2	1.3	1.4	5.5
·Lifetime Particulate reductions	000 kg	0	1.4	2.5	9.4	9.9	11.3	11.9	46.4

* All calculations are for emissions and energy savings over the lifetime of equipment.

Includes program investments, not purchases of EE equipment by customers.

Annex 2: Detailed Project Description

URUGUAY: Energy Efficiency Project

Background

The devaluation of the peso and ensuing banking crisis in mid-2002, which resulted in large part because of Argentina's economic crisis, has triggered a massive reduction in liquidity in Uruguay's banks and led to economic contraction from 1999-2003. However, the country is expected to begin to emerge from the current financial and economic crisis in 2004. As economic growth resumes, Uruguay is expected to resume its movement toward a new era of economic competition and regional market integration, including integration of regional energy markets. This process advanced with development of hydro resources shared with Argentina, and the establishment of pipelines to deliver natural gas from Argentina.

Uruguay's electric sector is dominated by four hydro stations located on the Río Negro, and a bi-national facility on the Río Uruguay, the boundary with Argentina. These facilities represent over 70 percent of installed capacity, and, depending on rainfall patterns, can cover the country's peak load. However, the capacity margin of hydroelectric resources has been eroding as peak load increases, while few opportunities for additional hydroelectric capacity remain. Therefore, any new capacity will be thermal (likely combined cycle gas, using natural gas from Argentina). Once economic growth resumes, demand is expected to grow at 2-3 percent per annum over the next ten years. Accordingly, government planners estimate that substantial amounts of gas-fired power generation capacity will be needed. The alternative would be to continue to import electricity from Argentina, the majority of which would be thermal. Therefore, Uruguay's electric sector is expected to exhibit an increasing share of thermal generation at the margin.

Meanwhile, the energy-consuming capital stock is of relatively low energy efficiency, and needs to be replaced during the process of modernization. The availability of natural gas opens up new opportunities to capture energy efficiency savings from modification of industrial processes and equipment renovation at the same time that the switch to natural gas is made. To this end, the GOU seeks to remove the barriers to energy efficiency, by facilitating the availability and acquisition of energy efficiency services, equipment and goods, and providing affordable access to electricity to all citizens.

Project Summary

The objective of the Project is to increase demand for and competitive supply of energy efficient goods and services, contributing to: (a) improved efficiency of energy use; (b) reduced reliance of the Recipient's economy on imported electricity and fossil fuels; and (c) reduced emissions from the energy sector. increase demand for and competitive supply of energy efficient goods and services.

To meet this objective, the Project would support the GOU in creating the enabling framework for the development of the energy efficiency market, including the creation of mechanisms for promoting energy efficiency and financing investment projects. The result would be to increase the acquisition of energy efficient goods and services by residential consumers and sectors of the economy that consume large amounts of energy. The Project also would extend the delivery of energy services to the marginal consumers in the rural sector where the population, not currently connected to the electricity grid, is willing to pay for switching its electricity supply source from high cost batteries and fossil fuels to a more economic and efficient solar photovoltaic systems, delivering (albeit limited) environmental benefits.

The Project will achieve its objective through three components (see Table A: Project Cost and

Financing Plan below):

1. Energy Efficiency Market Development
2. Utility-based Energy Efficiency Services
3. Project Management.

Table A: Project Cost and Financing Plan
(Million US\$)

Component	GEF Grant	MIEM Budget	UTE	Public/Private	Total
1. MARKET DEVELOPMENT (MIEM)	4.500	0.700	0.000	6.030	10.830
1.1. Market Strengthening	1.625	0.300	0.000	1.000	2.925
a. Policy and regulatory	0.400	0.100	0.000	0.000	0.500
b. Labeling and standards	1.000	0.100	0.000	0.200	1.300
c. Training and education	0.100	0.100	0.000	0.500	0.700
d. ESCO support	0.125	0.000	0.000	0.300	0.425
1.2. Uruguay Fund for Energy Efficiency (UFEE)	2.875	0.000	0.000	5.030	7.905
a. Fund management, startup and marketing	0.400	0.000	0.000	0.000	0.400
b. Project Development Facility (contingent grant)	0.500	0.000	0.000	0.185	0.685
c. Project Finance Facility (debt)	1.975	0.000	0.000	4.845	6.820
2. UTILITY BASED ENERGY EFFICIENCY SERVICES	1.875	0.000	7.105	0.000	8.980
2.1. Establishment of UTE-ESU	0.355	0.000	1.290	0.000	1.645
a. TA, organization and Projects	0.180	0.000	0.070	0.000	0.250
b. Staff, office and equipment	0.000	0.000	0.680	0.000	0.680
c. Surveys and marketing	0.175	0.000	0.240	0.000	0.415
d. Training, monitoring and evaluation	0.000	0.000	0.300	0.000	0.300
2.2 Energy Efficiency and DSM Investments	1.245	0.000	4.766	0.000	6.011
a. RGC projects	0.265	0.000	0.300	0.000	0.565
b. Poor neighborhoods	0.000	0.000	1.795	0.000	1.795
c. Public and space illumination	0.200	0.000	0.000	0.000	0.200
d. Follow-up/ other DSM and EE projects	0.780	0.000	2.671	0.000	3.451
2.3. SHS Investment	0.275	0.000	1.049	0.000	1.324
a. Program development	0.150	0.000	0.000	0.000	0.150
b. Investments	0.125	0.000	1.049	0.000	1.174
3. PROJECT MANAGEMENT	0.500	0.400	0.400	0.050	1.350
3.1 Project Management Unit-MIEM	0.500	0.400	0.000	0.050	0.950
a. Project management	0.300	0.300	0.000	0.000	0.600
b. Monitoring and evaluation	0.200	0.100	0.000	0.050	0.350
3.2 Support-UTE	0.000	0.000	0.400	0.000	0.400
TOTAL	6.875	0.700	7.505	6.080	21.160

Note: The project will be supported by the Power Transmission and Distribution Loan. Funds from this ongoing loan are shown as part of UTE's contribution to the project in Table A2-1 and throughout the document.

By Component:

Project Component 1-Energy Efficiency Market Development - US\$10.83 million

1.1 Market Strengthening (US\$2.925 million; GEF US\$1.625 million).

This component aims to build and utilize capacity in government for development and implementation of energy efficiency policies, regulations and programs, as well as to build the capacity of industry, businesses, academic institutions, NGOs and individual consumers to invest in energy efficiency. The activities would promote energy efficiency in all economic sectors and cover all types of energy, including fuels. The activities will include: (i) policy, regulatory and program development; (ii) a labeling and standards program; (iii) training and education; and (iv) support for ESCO development.

a. *Policy, Regulatory and Program Development (US\$0.5 million including US\$0.4 million GEF).* The Project aims to support MIEM in creating a strong nucleus of capacity in the Ministry that will guide development of energy efficiency programs in Uruguay, including development of appropriate policies and regulatory mechanisms. If considered appropriate after further study, MIEM intends to transform this nucleus into the Secretariat of a “National Energy Savings Commission”, as agreed by stakeholders during the workshop held in August 2003. Funds will be used for technical assistance: (i) to aide MIEM in its overall role of program implementation, by providing advice from entities that have already carried out such programs; and (ii) to support the development and implementation of specific energy efficiency policies, regulations and programs.

While Uruguay’s newly implemented regulatory framework creates opportunities for private generators and cogeneration, development is needed of specific policy initiatives that could stimulate broader energy efficiency activities. Consideration will be given to building incentives for energy efficiency into the regulatory framework. The studies to be conducted would include analyses of taxes and financial regulations, as well as consideration of the advantages and disadvantages of creating an energy efficiency fund based on a fee on every end-user’s electric bill (similar to the system benefit charge or “1 percent for efficiency” levies employed in many U.S. states) or a regulatory mandate for the energy suppliers to invest a percentage of its revenues on energy efficiency improvements (as in Brazil).

b. *Labeling and Standards Program (US\$1.3 million, including US\$1.0 million GEF).* Under the Project, MIEM will implement standards and labeling programs to facilitate the purchase of efficient appliances by users in the residential, commercial and industrial markets. When buying appliances and equipment, consumers often choose less efficient products without knowing because of lack of information. This ends up costing them money, but it is difficult for individual consumers to obtain information on energy efficiency of appliances and perform cost-benefit analysis using life-cycle costing. Labels, in particular, can help consumers to make informed choices, while minimum standards eliminate the need to make the calculation by removing inefficient products from the market. The potential savings to individual consumers are large enough to motivate purchase of more efficient products, if the consumers are aware of the savings (see Table A2-2). Labeling programs create this awareness, and have been successful in influencing purchasing decisions in other countries.

Table B: Individual Case for Purchase of Energy Efficient Products

Product	Incremental Cost for Efficiency (% of base cost)	Annual Energy Savings (US\$)	NPV Savings over Lifetime Equipment (US\$)	Simple Payback Period (years)
Air Conditioner Split	4%	US\$10.43	US\$82.83	3.5
Air Conditioner Conventional	4%		US\$82.83	2.7
Electric Water Heaters	12%	US\$21.90	US\$173.94	0.5
Gas Water Heaters	-	-	US\$173.94	0.5
Freezers-horizontal	22%	US\$8.38	US\$384.29	1.7
Freezers-vertical	3%	US\$24.19	US\$192.15	0.5
Refrigerator with freezer	9%	US\$6.67	US\$60.77	5.9
Refrigerator one door	9%	US\$6.67	US\$60.77	3.4

MIEM will: (a) make an agreement with URSEA to supervise development of the testing and labeling program; and (b) contract the Uruguayan Institute for National Standards (UNIT) and consultants, to complete the detailed design and implement a program to introduce an *energy efficiency voluntary endorsement label*. Uruguay's regulatory framework charges URSEA with monitoring safety of appliances and with protecting the consumer. With this mandate, URSEA is carrying out work to establish safety standards for equipment, in conjunction with MIEM and UNIT. This work could be expanded to cover the development of energy efficiency standards, under URSEA's mandate to protect the consumer. UNIT has the technical expertise to assess the implication of choosing different testing protocols for measuring product energy performance and helping to establish energy performance criteria. UNIT has a long history of consensus building with local manufacturers and importers, and would ensure upstream consultation and consensus building with them. Further, UNIT is a member of two key regional organizations working on the potential harmonization of standards and labeling programs – the MERCOSUR Standards Organization (AMN) and the Pan-American Standards Commission (COPANT).

The labeling program will involve a six step process, with stakeholders involvement at all stages, including: (i) finalize design of labeling program with stakeholders; (ii) development of testing capability; (iii) design and implementation of a labeling program; (iv) analyzing and setting efficiency criteria for labels; (v) maintenance and enforcement of compliance; and (vi) evaluation of the program. Development of labels by URSEA/UNIT would be guided by MIEM, which would be responsible for the promulgation.

The development of *minimum energy performance standards*, as a complement to the energy label, will be evaluated by the Energy Efficiency Committee at the time of the mid-term review of the project. Depending on this evaluation, a decision will be taken on the development and enactment of the regulatory basis for mandatory labeling and eventually, minimum energy performance standards. An agreement between MIEM and URSEA will be finalized with no objection by the Bank's lawyers by negotiation, including the first contract for the design of the program.

c. *Training and Capacity Building (US\$0.7 million including US\$0.1 million GEF)* Training and education programs, including a best practice program, and technical and commercial assessments will be organized by leading technical and academic institutions in the country. MIEM will work with the appropriate academic institutions (Universidad de la Republica (UdR) ORT, and others) and private sector institutions (CIU and others), and CONICYT, to implement these programs. For example, the Faculty of Engineering at the UdR, will be assisted to incorporate energy efficiency courses in its curricula. It will also be assisted to build on its substantial laboratory and testing capabilities, activities in energy audits in industrial facilities, and its initial portfolio of energy efficiency interventions in industrial facilities. Training would be best if focused on the most common deficiencies in market. Typically, for ESCOs, these include preparing bankable projects, loan applications, sales presentations to CEOs (rather than the normal

technical issues).

A best practice program will be developed to capture lessons learned during implementation of projects, e.g. by organizing contests among industrial and commercial users involved in energy efficiency activities, following the model of the Multilateral Investment Fund for the development of small and medium enterprises. The best practice program would be coordinated with the training program, and would utilize results of the projects supported by the UFEE. It would focus as much or more on commercial and financial aspects of projects, as technical aspects. These activities would complement the activities undertaken in the labeling and testing program (item 1.b, above) and would expand the cadre of professionals needed to work within the governmental and private-sector organizations involved in energy efficiency.

d. ESCO Capacity Building (US\$0.425 million including US\$0.125 million GEF). The emerging Uruguayan ESCOs have strong technical capabilities, and have begun marketing efforts, but do not have as yet experience with the contractual and financial issues that are vital to securing financing and implementing performance contracts. Resources will be used to support dissemination and use of standardized or reference contractual instruments (performance contracts and independent verification protocols) with the support of qualified consultants and experts. Training for ESCO representatives in energy efficiency finance, as well as work on the development of the mechanisms to support ESCO-based projects will also be supported.

1.2 Uruguay Fund for Energy Efficiency (US\$7.905 million, including GEF US\$2.875 million)

This component aims to create and operate the Uruguay Fund for Energy Efficiency (UFEE), to facilitate investment in energy efficiency by businesses, industry and ESCOs. The UFEE will be managed by a commercial bank, according to a Trusteeship (Fidei-comiso) Agreement between the commercial bank and MIEM. The central objective of the UFEE is to demonstrate the commercial viability of investment in energy efficiency over the long term. To achieve this, the fund must seek to: (i) maximize financing of energy efficiency investments, leveraging capital resources as much as possible; (ii) preserve its capital base, through commercially-oriented operation, in order to maintain resources for revolving use; and (iii) publicize its operating results so that businesses are increasingly willing to invest in energy efficiency and commercial banks become increasingly willing to undertake lending transactions themselves.

The manager of the UFEE will be responsible for three main activities: (i) set-up and management of the fund, including promotion; (ii) provision of contingent grants to cost share feasibility study costs with project sponsors; and (iii) provision of term debt to finance energy efficiency projects. Each part of the fund is expected to make grants or loans from principal, and is therefore classified as a sinking fund. However, the term loan part of the fund is expected to retain its value, while the contingent grant part is expected to be depleted by the end of the project. While the project implementation period is six years, the Project Finance Facility is expected to continue after the project closes, utilizing remaining funds.

The commercial bank will be selected by effectiveness, from several qualified banks (e.g. Banco de la Republica and Banco Nuevo Commercial). Criteria for selection would include national coverage, leverage potential, quality of management team and experience with similar fund administration.

The following activities would be supported (for more details, see Annex 5):

(a) Fund Management Services (GEF US\$400,000). The project funds would support training and start-up costs of the UFEE, management services, and marketing activities such as preparation of promotional materials and holding of seminars. These activities would publicize the fund's existence, inform potential clients of the activities that would be eligible, the conditions of availability of funds from the UFEE and the procedures for application for contingent grants and project financing.

(b) *Project Development (Contingent Grant) Facility (US\$0.685 million, including GEF US\$0.500 million)* Given the liquidity limitations arising from the financial and banking crisis, many businesses in Uruguay would find it difficult to secure resources for project development and early-stage investment. The contingent grant facility will cost-share the costs of preparing feasibility studies for projects to be financed by the debt facility.

(c) *Project Finance Facility (US\$6.820 million including GEF US\$1.975 million)*. The objective of the project finance facility of the UFEE is to maximize loan commitments and hence energy efficiency investments. To achieve this objective over the long term, it is critical to minimize costs and maximize revenues, in order to avoid erosion of the capital, and hence undermine the ability of the UFEE to continue revolving loan commitments. The facility would have the flexibility to lend in either dollars or local currency.

Project Component 2-Utility Based Energy Efficiency Services - US\$8.98 million

As part of the Project, UTE will establish an Energy Savings Unit (UTE-ESU) as a specialized division of the utility that will report to the manager of the Distribution and Commercial Division. The main objective of the UTE-ESU is to demonstrate commercial viability of investment in demand side management (DSM) and energy efficiency (EE) over the long term, by implementing several types of programs involving installation of energy efficient equipment by UTE-ESU or by customers.

These activities are part of UTE's strategy of diversifying and improving its service in areas where it faces potential competition from other energy providers, reducing losses from clients where UTE faces high rates of non-payment, and extending service to communities that it does not currently serve.

UTE-ESU will implement energy efficiency projects on its own account as well as that of UTE to demonstrate that (i) the UTE-ESU itself can be a viable business on its own, and (ii) that UTE's investment in energy efficiency services can generate a net financial benefit to the company through asset appreciation, the improvement of customer service, loss reduction and postponement of investments on electricity supply facilities. To achieve this, ESU must move rapidly to establish its technical, commercial and financial team to implement its projects, market the programs aggressively, utilize its investment resources efficiently, and ensure timely payment by its clients for the services it provides.

Project supported activities include the following:

2.1. UTE-ESU Establishment (US\$1.645 million, including GEF US\$0.355 million)

UTE-ESU will be established in the Distribution Department, which is in charge of all commercial and technical electricity distribution matters and the relationship with customers, to facilitate access to customers and availability of specialized staff to implement the UTE-ESU programs. The organization proposed for UTE-ESU includes a manager and a small core group of business developers that will lead the special project teams formed by UTE's specialized staff that will be set up to deliver each individual program. This model is already being successfully used to run CONEX, the special unit that provides services on management, organization, and commercial matters to private and public clients.

The project will assist in the creation and operation of UTE-ESU. Activities are as follows:

- a. *TA for Organization and Projects (US\$0.250 million, including GEF US\$0.180 million)*. A consultant with experience in utility based DSM and energy efficiency will be hired to assist the ESU, in the ongoing development of an organizational structure and a business plan, as well as the commercial instruments to be used, including pre-feasibility and feasibility work to extend the project pipeline beyond the initial activities developed for the business plan;
- b. *ESU Staff, Offices and Equipment (US\$0.680 million, no GEF)*. Includes the cost of the staff required

to operate the facility, including the personal of other operational units of UTE that would participate, on a case by case basis, in the implementation of specific projects. UTE will set up a system of accounts to keep track of program related expenditures on operational staff, office and equipment costs.

c. *Surveys and Marketing (US\$0.415 million, including GEF US\$ 0.175 million).* Includes the cost of marketing research of energy efficiency markets and promotion of ESU services; and

d. *Training, monitoring and evaluation (US\$0.300 million, no GEF).* Comprises expenditures in training materials and cost of training facilities and instructors.

2.2. DSM and Energy Efficiency Investment (US\$ 6.011 million including US\$1.245 million GEF grant.)

UTE-ESU will demonstrate that creation of an energy efficiency business can generate a net financial benefit to UTE through asset appreciation, improvement of customer service, improved competitiveness, and loss reduction. The GEF contribution would be paid into ESU against the first investments, together with resources from UTE. ESU will start by implementing a set of initially defined projects, and will use the learning from these projects to define later follow-up projects.

a. *Financing Equipment in Residential, Commercial and Government Markets(US\$0.565 million, including GEF US\$0.265 million).* UTE-ESU will finance customer acquisition of efficient equipment through the utility bill, e.g., efficient water heaters, compact fluorescent lamps (CFL), and other efficient lamps. The first projects to be implemented under this modality will be executed in the areas of Ciudad de la Costa, San José, Colonia and Paysandú. These locations represent areas of fast residential and commercial development, where there will be strong competition with natural gas;

b. *Public Illumination Program. (GEF US\$0.200 million).* Most street lamps in Uruguay are incandescent or mercury vapor types. Replacement by high pressure sodium vapor lamps and improvements in ballasts, luminaries, control systems, design and operation could reduce consumption by 40 percent. As many municipalities find it difficult to pay the cost of electricity services, they are in arrears in payment to UTE. UTE has developed alternatives to help the municipalities to reduce their costs, including financing installation of efficient equipment and recovering the investments through the utility bill. The program will be offered to municipalities with no debt in arrears or those that have accepted the collection of the municipal public illumination tax by UTE, therefore guaranteeing repayment. The initial projects include improvement of the street illumination systems in six cities;

c. *Poor Neighborhood Energy Efficiency Program (Zonas Carenciadas) (US\$1.795 million, no GEF).* This project aims to legalize connections, improve safety and service quality, and help consumers to save energy in poor neighborhoods where commercial losses are very high to help to increase efficiency and reduce emissions. The project would upgrade the distribution systems to reduce theft, legally connect all users, improve internal wiring of households to improve safety and service quality, facilitate electricity savings through the installation of efficient lamps and education on electricity use, and disseminate energy-saving systems for cooking and water heating. The work would involve the participation of social workers and local NGOs;

d. *Follow-up Projects (US\$3.451 million, including GEF US\$0.780 million).* It is expected that the ESU will expand the above initial projects, when they are proven successful. Also, UTE may initiate other types of projects. In the past, UTE implemented a consumer-finance product called Super-Plan which provided loans for purchase of electric equipment with loan origination at the retailer. UTE could implement a similar plan limited to efficient equipment, either through rebates or through financing with repayment collected through UTE's bill. ESU could also offer to improve the efficiency of energy use in public and commercial buildings through the installation of efficient equipment for illumination, water heating, and space conditioning, under a performance contract arrangement. UTE could finance equipment installation and be repaid through the electricity bill. Repayment by the Government agencies is guaranteed by a

clearing house mechanism already in place where all agencies of the Government and UTE participate.

2.3 Electrification of Dispersed Rural Populations through SHS. (US\$1.324 million, including GEF US\$0.275 million)

Studies by UTE indicate that there are 1,800 homes in small settlements in the interior and another 4,200 homes in remote locations, that lack access to electricity. These households pay US\$8-10 for low quality energy sources, including batteries, kerosene, gas and/or candles. The program will consist of purchase, installation and provision of operation and maintenance services. Each SHS recipient will pay a tariff sufficient to cover operation and maintenance expenses, battery replacement and part of the capital costs (estimated in the first post-crisis phase at US\$4 per month and in the second phase at US\$7-8 per month). Ownership would be transferred to the recipients after five years in the first phase and after ten years in the second phase. (The first phase has a lower tariff and shorter lease as an incentive to the users to participate in a new demonstration project. However, UTE will offer first phase users a service and maintenance contract at the same fee for a second five year period.) The GEF resources allocated to this program would be leveraged with UTE's contribution, and payments of end-users. The program is expected to deliver electric service to about one third of the 6,000 homes identified, and lay the groundwork for additional systems to be purchased for the remaining homes using the same model.

Project Component 3- Project Management - US\$ 1.35 million

MIEM and UTE will be responsible for execution of this component, which will be supported with resources totaling US\$1.35 million (including US\$0.500 million from GEF). These resources will fund the formation and activities of the PMU in MIEM and the support activities to be provided by the accounting, acquisitions and information management departments of UTE. GEF resources will be used to finance the incremental operating costs associated with management of the project.

Annex 3: Estimated Project Costs
URUGUAY: Energy Efficiency Project

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
Energy Efficiency Market Development	4.90	5.27	10.17
Utility Based Energy Efficiency Services	4.30	2.89	7.19
Project Management	0.90	0.18	1.08
Total Baseline Cost	10.10	8.34	18.44
Physical Contingencies	0.70	0.66	1.36
Price Contingencies	0.90	0.46	1.36
Total Project Costs¹	11.70	9.46	21.16
Total Financing Required	11.70	9.46	21.16

Project Cost By Category	Local US \$million	Foreign US \$million	Total US \$million
Goods	2.04	3.40	5.44
Services	3.26	2.24	5.50
Sub-projects	4.80	2.70	7.50
			0.00
Physical contingencies	0.70	0.66	1.36
Price contingencies	0.90	0.46	1.36
Total Project Costs¹	11.70	9.46	21.16
Total Financing Required	11.70	9.46	21.16

The Project is to be supported by IBRD Power Transmission and Distribution Loan. Funds from this ongoing loan are shown as part of UTE's contribution to the project in the above table and throughout the document.

¹ Identifiable taxes and duties are 0 (US\$m) and the total project cost, net of taxes, is 21.16 (US\$m). Therefore, the project cost sharing ratio is 32.49% of total project cost net of taxes.

Annex 4: Incremental Cost Analysis

URUGUAY: Energy Efficiency Project

Introduction

Uruguay is moving from a relative economic isolation to a new era of economic competition and regional market integration. This process has advanced to a substantial degree with the development of the major hydroelectric resources that Uruguay shares with Argentina, and, more recently, the establishment of natural gas pipelines to deliver fuel from Argentina. It is also important to note that the energy sector has traditionally been heavily influenced by external factors, given Uruguay's limited stock of indigenous energy resources, limited to hydropower, firewood and other biomass fuels (such as sugarcane bagasse, rice hulls and other agricultural wastes). Based on data from the 2000 energy balance, Uruguay imports about 70 percent of its energy requirements.

Progress may be affected by the country's current financial and economic crisis. The devaluation of the peso and ensuing banking crisis in mid-2002, which resulted in large part because of Argentina's economic crisis, has triggered a massive reduction in liquidity in Uruguay's banks and resulted in an economic contraction in 2002 and 2003. Initially, it also triggered a temporary reordering of relative prices in the energy sector, since natural gas pricing and transportation tariffs were indexed to the dollar, but UTE's electric tariffs and ANCAP's liquid fuels are set by the government, and hence were less responsive to market forces. However, this has since been corrected and relative energy prices have returned to the order prior to the crisis.

The country's hydroelectric potential has already been largely developed. Indeed, the electric sector is dominated by four hydroelectric stations located on the Río Negro in the central part of the country, and a bi-national facility on the Río Uruguay, the boundary with Argentina. Together, these four facilities represent over 70 percent of installed generation capacity, and, depending on rainfall patterns, this can cover virtually all the country's peak load (see Table 1, next page). However, the capacity margin of Uruguay's hydroelectric resources is steadily eroding as peak load increases, while opportunities for additional hydroelectric capacity have all but been exploited, so new capacity – and the marginal unit in the system – will be thermal.

Consistent with Uruguay's resource base, in relatively wet years, such as 1995, 1998 and 2001, the amount of thermal generation required by UTE may amount to as little as 5 percent of total output. In contrast, in relatively dry years, such as 1999, this figure can exceed 20 percent. Energy imports from Argentina also increase during dry years, and while the Argentine grid is dominated by hydroelectric capacity, the marginal units serving Uruguay's energy needs are most likely to be thermal (see Table 2). Moreover, in the future thermal generation will increase as a share of total production, consistent with the development of resources other than hydroelectric facilities. Demand is expected to grow at 3 percent per annum over the next ten years, albeit with a slowdown in 2002 and 2003. Accordingly, government planners estimate that private companies could build up to 850 MW of new gas-fired power generation capacity within a decade. In the event that this new capacity does not come on line in time, UTE will continue to utilize imported electricity under contracts with generators in Argentina, the majority of which operate thermal facilities. In general, therefore, Uruguay's electric sector baseline will exhibit an increasing share of thermal generation at the margin throughout the entire load curve for the country.

Table 1: Capacity and peak load data for Uruguay, 1995-2001

(Figures in MW)

	1995	1996	1997	1998	1999	2000	2001
UTE							
Hydroelectric							
Terra	133	138	148	148	148	148	148
Baygorria	108	108	108	108	108	108	108
Constitucion	333	333	333	333	333	333	333
Steam							
Units3 and 4	100	100	100	100	100	100	100
Unit 5	88	88	88	88	88	88	88
Unit 6	125	125	125	125	125	125	125
Gas Turbines							
AA	24	24	24	24	24	24	24
CTR	226	226	226	226	226	226	226
Deisel (off-grid)	26	20	N/A	18	18	18	8
Salto Grande (Uruguay side)	945	945	945	945	945	945	945
Total capacity	2,108	2,107	N/A	2,115	2,115	2,115	2,105
Percent hydroelectric	72%	72%		73%	73%	73%	73%
Peak Load	1,204	1,269	N/A	1,287	1,349	1,463	1,459
Margin for Total Capacity	43%	40%	N/A	39%	36%	31%	31%
Margin for Hydroelectric Capacity	21%	17%	N/A	16%	12%	5%	5%

Source: UTE.

Table 2: Generation and energy flows in Uruguay, 1995-2001

(Figures in GWH)

	1995	1996	1997	1998	1999	2000	2001
<i>Generation</i>							
Hydroelectric	2,554	1,586	N/A	3,832	2,125	3,000	3,659
Thermal	377	827	N/A	328	1,616	490	9
Diesel (off-grid)	4	4	N/A	6	5	5	6
<i>Purchases</i>							
Salto Grande	3,197	3,901	N/A	4,556	3,273	3,103	4,310
Argentina	188	309	N/A	78	708	1,328	117
Brazil	0	0		0	0	0	6
Total production	6,320	6,627	N/A	8,800	7,727	7,926	8,107
<i>Exports</i>							
Argentina	12	17	N/A	25	9	0	73
Brazil	186	140	N/A	1,575	166	88	165
Total Exports	198	157	N/A	1,600	175	88	238
Net Energy	6,122	6,470	N/A	7,200	7,552	7,838	7,869
 Total Sales	 4,978	 5,187	 N/A	 5,863	 6,184	 6,434	 6,426
 Hydroelectric as share of total	 91.0%	 82.8%	 N/A	 95.3%	 69.9%	 77.0%	 98.3%
Thermal as share of total	6.0%	12.5%	N/A	3.8%	21.0%	6.2%	0.2%

Source: UTE.

The main thermal electric generation facilities in Uruguay utilize heavy petroleum residues (fuel oil), have low thermal efficiencies, and produce emissions in urban zones with negative effects on local air quality and the global environment. Meanwhile, the energy-consuming capital stock is of relatively low energy efficiency, and needs to be replaced during the process of modernization. The availability of natural gas opens up new opportunities to capture potential energy efficiency savings deriving from modification of industrial processes and equipment renovation at the same time that the switch to natural gas is made. To this end, the GOU seeks to remove the barriers to energy efficiency, by facilitating the availability and acquisition of energy efficiency services, equipment and goods, and providing affordable access to electricity to all citizens.

Project Concept

The objective of the Project is to demand for and competitive supply of energy efficient goods and services. Development of an energy efficiency services market will increase domestic supplies through improving the efficiency of its use of existing resources, thereby making Uruguay's economy less reliant on imported electricity and fossil fuels and reduce overall emissions from the sector.

To meet this objective, the Project will support the Government of Uruguay (GOU) in creating the enabling framework for the development of the energy efficiency market, including the creation of mechanisms for financing service providers, projects and programs. This will increase the availability and acquisition of energy efficient goods and services to sectors of the economy that consume large amounts of energy, and residential consumers including the poorest strata of society. In particular, the Project extends the market-driven delivery of energy services to the rural sector where the population, not currently connected to the electricity grid, is willing to pay for switching its electricity supply source from high cost batteries and fossil fuels to a more economic and efficient solar photovoltaic systems, delivering (albeit limited) environmental benefits.

The Project will achieve its objective through: (i) the development of the energy efficiency market including capacity building, monitoring and evaluation, dissemination, standards, testing and labeling; (ii) the establishment of a utility-based energy service unit within UTE (UTE-ESU) to initiate and implement project investment activities, including the provisions of electricity management services to isolated rural households using least-cost solar home systems; and (iii) the establishment of an Uruguay Fund for Energy Efficiency (UFEE) to widen project implementation capacity by enabling businesses and emerging ESCOs to tap into energy efficiency finance opportunities.

Barriers and Modalities

The Project will address three current barriers to project development: (a) limited capacity and know-how among key stakeholders; (b) lack of consumer demand; and (c) a shortage of project development and investing financing. Lack of know-how, project development and finance has also hampered the Government in implementing its nationwide rural electrification strategy. The Project will address these barriers by creating an enabling framework for a utility-based energy service unit within UTE (UTE-ESU) and multiple market players (including existing and emerging ESCOs) to develop, implement and finance energy savings investments, using direct investments as well as the energy performance contracting principle. In addition, the project reaches to isolated rural areas through the provision of modern home systems (SHS). The Project will address these barriers through a GEF grant (US\$6.875 million). UTE will also make use of the ongoing IBRD Power Transmission and Distribution Loan to support its contribution. Over ten years (six years of implementation plus four years during which the market transformation will continue and deepen), the Project is expected to attract associated investment co-financing of US\$6.1 million from private and public sources and US\$8.2 million (UTE and MIEM) in local counterpart funding. Total funding for the Project is estimated to be US\$21.16 million (excluding GEF PDF-B

funding).

The modalities proposed for the use of the GEF Grant funds are: (a) technical assistance to support market development activities (US\$1.625 million); (b) creation of the UFEE, including start-up and marketing costs (US\$0.4 million), contingent grants for project development (US\$0.5 million), and debt financing of investment projects (US\$1.975 million); (c) technical assistance to support UTE-ESU (US\$0.355 million) and support for investments by the UTE-ESU (US\$1.520 million); and (d) support for incremental Project management costs (US\$0.500 million). GEF financing to UTE-ESU includes US\$275,000 to enable it to: (i) reduce the transaction and implementation costs of the first 1000 solar home systems to a level not exceeding consumers' current willingness to pay, and (ii) organize and market the implementation of the remaining 1000 solar home systems during the project implementation period.

Benefits: Energy Savings, Environmental Benefits, and Capacity Building

In addition to removing barriers, initial projects undertaken by UTE-ESU and energy efficiency investments by businesses and the already existing, but small and undercapitalized ESCOs, will generate energy savings. These savings will yield economic as well as environmental benefits, both in terms of emissions of local pollutants as well as reductions in GHG emissions. The replication of these initial activities will have a multiplier effect in terms of energy efficiency improvements and emission reductions. The Project will also improve the allocation of resources by helping defer investments in energy supply facilities and by expanding the service and price options available to consumers as a result of the competition among energy suppliers to retain customers in a new market-based energy sector.

Direct benefits from the Project include the economic savings obtained from: (a) initial and follow-on projects implemented by the ESCOs and other project sponsors such as industrial end-users; (b) implementation of low-cost conservation investments by energy users (residential, industrial, commercial, and utilities) as a result of the information dissemination program; (c) energy efficiency projects undertaken by UTE; and (d) the dissemination of more efficient appliances, equipment and construction materials as a result of the testing, certification and labeling program.

The SHS component will provide access to cleaner, efficient and affordable electricity supply to the rural populations, reduce harmful pollutants inside the houses, and decrease related adverse health effects. Improved reliability of electricity supply would also enable poor households to access modern means of communications. Besides the local benefits, it would contribute to reduce GHG emission.

Indirect benefits from the Project include the reductions in contaminant emissions as well as the benefits to the national balance of payments associated with reductions in the consumption of fuels produced from imported petroleum. Based on the analysis of the Baseline Scenario and the Project Scenario developed below, the anticipated reduction in GHG emissions derived from direct Project implementation over a period of six years is 1.4 million tons of CO₂. Over ten years, the reduction would be estimated at 2.1 million tons of CO₂. If indirect impacts are included, the estimated reduction increases to 2.7 million tons of CO₂.

Other benefits associated with the Project include the development of a new sector of the economy that requires the talents of trained engineers and financial specialists. The Project also contemplates training and capacity building activities in the academic sector, which will help support the strengthening of the country's institutions for technical education and keep them abreast of technical advances elsewhere in the world.

Estimated Energy Savings

Potential energy savings have been assessed by an engineering team based on analysis of the national

energy balance, visits with Uruguayan industrial facilities in different sectors conducted by an experienced energy engineer, assessments of the electric appliance and equipment markets conducted by a leading organization specializing in energy efficiency, surveys to residential electricity consumers to define consumption patterns, visits with ESCOs operating in Uruguay and the leaders of the UTE-ESU initiative within UTE, as well as the municipal government of Montevideo.

The estimates prepared by the engineering teams form the basis for a series of inputs in a spreadsheet model that consists of four modules: (i) *Industrial savings potential*. Estimated by fuel type, using factors generalized from the results of 11 site visits to major industrial and commercial firms in Uruguay. The factors utilized incorporate judgments regarding the economic returns obtainable from process modifications without fuel switching, additional savings made possible by the introduction of natural gas, and equipment upgrades; (ii) *Aggregation of industrial, residential, governmental, and commercial savings potential*. ESCO sector savings, with inputs from module (i), are combined with sales and savings estimates taken from UTE-ESU's business plan, and the estimates prepared by the standards and labeling program team. This represents the *total potential savings* in Uruguay; (iii) *Estimate of savings achieved by the Project*. These figures are derived from the data in module (ii), utilizing two sets of market penetration estimates, one for investments financed by the UFEE and the second for those catalyzed by the Standards and Labeling program. The UTE-ESU figures are already based on estimates of market penetration and therefore do not require adjustment. The results of this exercise constitute the estimated savings from the Project, which are summarized in Table 3, below; (iv) *Estimated of emissions reductions based on estimated savings*. The model incorporates estimates of carbon emissions reductions from savings in fuel oil and natural gas, as well as electricity. In the case of the fuel and natural gas emissions reductions, generally accepted emissions factors on the basis of energy content are employed, while in the case of electricity, marginal emissions factors developed by UTE itself are included in the model.

Table 3: Projected Direct Annual Energy Savings from Project Implementation

	Years 1-6	Years 1-10	Average Annual	Reference	Average/ Reference	Year 10/ Reference
Fuels (kTPE)	7	10	1	452	0.2%	2.28%
Cogeneration (kTPE)	6	8	1	324	0.3%	2.54%
Electricity (kTPE)	44	69	7	1,629	0.4%	0.41%
Total	57	87				

Note: Total reference for hydrocarbon fuels is consumption by industrial sector, 2001. Total reference for cogeneration is industrial energy consumption (total large consumers) in 2002. Total reference for electricity consumption is total UTE output in 2002, less diesel (offgrid) and imports from Argentina.

Analysis of Anticipated Carbon Emissions Reductions from the Project

The Project will generate GHG emissions reductions from changes in several different aspects of energy use in Uruguay. Reductions in industry will flow from savings in fuel oil and other petroleum derivatives, fuel switching to natural gas, implementation of cogeneration projects, and reductions in electricity consumption from the grid. In the residential, commercial and governmental sectors, the savings will flow primarily from reduction of electricity consumption, but there may be some savings associated from fuel switching as well. The basis for estimating the reductions achieved under each heading, electricity, petroleum products, and supply-side efficiency gains through cogeneration is described in greater detail, below:

Electricity. As noted, Uruguay's electric sector now utilizes a relatively small amount of thermal generation capacity at the margin. The total amount of thermal generation varies significantly, however, depending on the degree to which rainfall makes intensive use of hydroelectric capacity possible or not. In

the future, however, the extent of thermal generation's importance within the sector's overall resource mix will increase as demand continues to increase.

In the analysis of emissions reductions from electricity generation, the estimated savings in electricity consumption from all sectors (industrial, commercial, residential and governmental) have been incorporated into a model that also includes factors describing (a) the marginal emissions of CO₂ per kWh consumed, (b) the degree of market penetration achieved by the investments financed by the UFEE and catalyzed by the labeling and standards program, (c) the degree of coincidence observed between peak, intermediate and baseload periods in the system demand curve and loads stemming from use of certain types of household appliances (such as residential lighting, refrigeration, and space heating and cooling) along with well-defined uses such as street lighting.

a. The marginal emissions factors vary for each year between 2004 and 2013, and are drawn from an internal analysis prepared by UTE. This document includes a detailed review of the operating characteristics of existing generation capacity in the country as well as the generally accepted efficiencies of plants of the type that will be built in Uruguay in the next decade – specifically combined-cycle facilities fired with natural gas. While it is true that total generation from a fossil-fired resource may vary dramatically from year to year because of variations in hydroelectric availability – a feature of the Uruguay system that has been used to justify use of lower, *average* factors in calculating system-wide emissions – it is also the case that the projected electricity savings will not exceed 2.3 percent of total output by Uruguay-based generation assets in 2002. This is well within the *average* percentage share of thermal generation reported by UTE for its system including deliveries from Salto Grande but not Argentina or Brazilian generators from 1995 to 2001, which was over 10 percent.

b. The degree of market penetration achieved for the UFEE is assumed to be faster than what is expected for the labeling program, reflecting the increased difficulty of achieving broader customer acceptance of the potential for energy savings.

c. The degree of coincidence observed for specific types of appliances and specific energy uses are based on recent analysis of the market for appliances and a broad range of electric equipment as part of the design of the labeling and standards initiatives within the Program.

Hydrocarbon fuels. Savings in the consumption of liquid fuels, primarily fuel oil, stem from projects that reduce consumption directly as well as the conversion of existing systems utilizing fuel oil and other petroleum products to the use of natural gas in more energy-efficient configurations made possible by use of this cleaner fuel. Since natural gas has a lower carbon content, fuel switching yields emissions reductions, which are amplified by any actual savings in terms of GJ resulting from changes in processes, energy-use configurations or other features. In instances where natural gas is already the baseline fuel, potential sources of savings have also been identified.

In the rural sector, the delivery of solar home systems to households that currently use kerosene, LP gas or electricity from batteries charged using diesel generators or other fossil sources is estimated to result in emissions savings of slightly more than 24,000 tons of CO₂, from equipment installed under the project.

Cogeneration. The potential capacity in Uruguayan industry is about 40 MW, equivalent to less than 2 percent of current installed capacity. The emissions reductions result from the improvement in net efficiency in the consumption of primary energy derived from cogeneration, and therefore result irrespective of whether the baseline and project fuels are fuel oil, natural gas or a mix.

Incremental Cost Analysis

Implementing the Project would require incurring incremental costs to remove barriers to otherwise commercially viable energy efficiency projects with substantial global environmental benefits. The incremental costs to be supported by the GEF are defined as the difference between the economic cost of the Baseline Scenario and the GEF Alternative. Below are the baseline scenario, the GEF Alternative, and the incremental cost for each component.

A. Baseline Scenario

At present, very limited financing of sustainable energy efficiency projects is occurring in Uruguay. Some new investment in plant and capital by commercial and industrial energy consumers would deliver improvements in energy efficiency (secular trend energy efficiency improvements). Given the financial crisis and the resulting limitations on credit, it is expected that specific energy investments in the absence of the project would be very limited.

Aside from the limitations on investment resulting from the crisis, availability and acquisition of efficient equipment and appliances has been limited, and the awareness among consumers of saving opportunities is inadequate to induce consumer-driven demand and develop a sustainable market for such equipment and appliances. Standards for equipment and construction materials are old and require updating. Existing testing institutions do not test for energy efficiency. The current labeling system is limited to the thermal performance of buildings. Despite its participation in regional initiatives, Uruguay has made little progress in applying testing and labeling procedures to household appliances. As demand for and imports of natural gas increase, and in the absence of any labeling and consumer awareness program or aggressive marketing and customer financing programs by the natural gas distributors now active in the country (as envisaged under the baseline scenario) new, more efficient natural gas appliances are unlikely to receive significant attention. Without the GEF support, MIEM involvement will be constrained to the business-as-usual and the market transformation activity will not occur.

Under the baseline scenario, the delivery of energy efficiency services would not be widely implemented in the medium term. The current economic recession in Uruguay stemming from the financial crisis of 2002 underscores the realism of this forecast. Without the GEF support, the in-country capacity to develop and implement energy efficiency services on sustainable basis will develop slowly, thereby exacerbating the energy balance of the country in favor of higher cost of energy import or supply capacity expansion. Despite the utility benefits of energy efficiency savings, UTE lacks experience to comprehensively address and capture the saving opportunities and ensure consumer retention. Without the GEF support, UTE-ESU will not be created. In the absence of UTE-ESU-led initial projects, the commercial viability of energy efficiency investments cannot be demonstrated and private ESCOs would not venture into new, unproven business opportunity. As a result, the opportunities to capture the potential energy savings buried in the utility bills of the customers will be lost.

In the absence of GEF support, UTE will not advance in the implementation of the country's rural electrification program, failing to provide access to electricity to all citizens, including those located in isolated rural areas. For these areas, the baseline calls for a limited implementation of solar systems by UTE for the supply of electricity to public institutions only, with no plan for the electrification of households.

In the absence of GEF-funded barrier removal activities, the total investments under the Baseline Scenario, including incipient energy efficiency activities, meanwhile, is estimated at US\$3 million. This estimate is based on data obtained from the proto-ESCOs active in Uruguay at present, an assessment of their future prospects, an evaluation of the potential for sales of appliances and equipment, a business as usual

situation, and UTE's current plan for the electrification of remote public institutions.

B. Project Case: GEF Alternative

The Project Scenario (GEF Alternative) calls for removal of barriers to energy efficiency that would result in intense market development and transformation activities, a higher penetration and implementation of energy efficiency goods and services, and the implementation of the first phase of a solar home system program for isolated rural households. Removal of identified barriers would result in energy efficiency investments valued at US\$14 million over the 6-year implementation period and US\$23 million over a 10 year period. This will be supported by public and private energy efficiency financing (US\$6.1 million), and UTE and MIEM's local contribution (US\$8.3 million), over the 6 year project implementation period.

C. Incremental Costs

The implementation of the proposed Project will produce substantial reductions in greenhouse gas emissions in Uruguay by initiating and sustaining the market for energy efficiency products and services. By removing barriers to energy efficiency, it is estimated that US\$23 million in energy efficiency expenditures (including US\$1.3 million for SHS program) could be supported by the Project during the a 10 year implementation period, yielding carbon dioxide reductions of over 1.4 million tons over the next six years and 2.1 million tons CO₂ over the next ten years.

The total incremental cost of the project is US\$6,875,000 in GEF funds and will cover barrier removal activities. It comprises the GEF technical assistance for market development, creation of the Uruguay Fund for Energy Efficiency to offer contingent grants for project development and debt finance for investment, support for the UTE-ESU and incremental Project management costs. Over ten years, the project will produce direct incremental global benefits of 2.1 million tons of avoided CO₂, at a cost to the GEF of US\$3.3/ton CO₂ (or about US\$12.1/ton carbon). If both direct and indirect impacts are considered, over a 10 year implementation period, the reduction in CO₂ emissions is estimated at 2.7 millions tons, at an estimated cost of US\$2.5/ton CO₂ (or about US\$9.4/ton carbon). If only the direct impact from a six year period of project implementation is considered, the cost to the GEF would be US\$4.9 per ton CO₂ (or US\$18.2 per ton carbon).

With regard to the SHS program, expected direct contribution to the reduction of CO₂ emissions will be 24,000 tons, as reflected in the Incremental Cost and Benefit Matrix below. However, from the country point of view, the implementation capacity built by the project would allow Uruguay to extend the electrification program to the envisioned 6,000 rural households and reduce about 72,000 ton of CO₂ of emissions, taking into consideration a SHS' life of 20 years. Under these assumptions, the GEF cost for this activity would be US\$3.8 per ton CO₂.

Incremental Costs and Benefits Matrix

	Baseline	Alternative	Increment
Domestic Benefit	<ul style="list-style-type: none"> Limited investment in energy efficiency measures, appliances and equipment Inefficient use of primary fuels Continued reliance on energy imports and capacity expansion to meet demand growth Solar systems limited to community services 	<ul style="list-style-type: none"> Barriers to energy efficiency development, implementation and financing reduced or eliminated Substantial savings in energy expenditures (thermal and electric); O&M savings, improved economic efficiency; reduced imports; improved fuel efficiency and utilization; lower levels of harmful local emissions. Extending the use of solar systems to households as well 	<ul style="list-style-type: none"> Over ten years: energy savings of 559 kTPE
Global Environmental Benefit	<ul style="list-style-type: none"> Base case energy efficiency market investments leads to maximum of 0.3 million tons CO2 reductions. 	<ul style="list-style-type: none"> Investments in energy efficiency, yielding 2.4 million tons CO2 reductions (incl. 24,000 tons CO2 for the solar home system investment). 	<ul style="list-style-type: none"> Reduced CO2 emissions of 2.1 million tons
GEF Incremental Costs			
<i>Market Development Grant</i>	0.0	1.625	1.625
<i>Uruguay Fund for Energy Efficiency (UFEE)</i>	0.0	2.875	2.875
<i>UTE-Energy Savings Unit</i>	0.0	1.875	1.875
<i>Project Management</i>		0.500	0.500
Total GEF Incremental Cost	0.0	6.875	6.875

Annex 5: Financial Summary

URUGUAY: Energy Efficiency Project

This annex deals with the financial aspects of: the Uruguay Fund for Energy Efficiency (UFEE). The financial aspects of the UTE-Energy Service Unit (UTE-ESU) are discussed in Section E1.

Introduction. The project will establish a new Uruguay Fund for Energy Efficiency, to help businesses (including ESCOs) to obtain financing for energy efficiency projects (see Annex 2). The UFEE will be managed by a commercial bank, according to an Agreement between the commercial bank and MIEM. The UFEE will have two facilities: (i) a Project Development Facility (offering contingent grants) to cost-share project preparation expenses with project sponsors (capitalized with US\$0.5 million GEF); and (ii) a Project Financing Facility to provide debt finance for energy efficiency projects (capitalized with US\$1.975 million GEF).

Each window of the fund is expected to make loans from principal, and is therefore classified as a sinking fund. However, the project finance fund is expected to retain its value, while the contingent grant facility will gradually be depleted. While the UFEE is expected to operate at least for the project implementation period of six years, the UFEE could continue to operate after the project closes, utilizing remaining funds. In this Annex, the UFEE is modeled for a ten year period, and results are given for both a six and ten year period. .

The purpose of the analysis in this Annex is to analyze the key parameters which would define the performance of the UFEE, the trade-offs involved, compensation of the participating commercial bank, and an assessment of potential outcomes, given different assumptions.

Selection of the Manager. The commercial bank that would manage the UFEE would be selected using a competitive process. Criteria for consideration as a candidate would include overall reputation, national coverage and quality of portfolio. Criteria for selection would include leverage potential, administration cost, quality of management team and experience with similar fund management.

Fund Management Services. Rather than receiving a spread on the loans made by UFEE, the commercial bank would be compensated for expenses, including costs for set up, marketing, credit, technical and environmental assessment, supervision, and an incentive for successfully concluding transactions. The basis for calculating the compensation would be established in the Trusteeship Agreement and described in the Operational Manual. The UFEE requires excellent performance on the part of the commercial bank in the initiation of operation, prudent management, and secure fund management with minimum withdrawal from the capital. Thus, the fund requires sufficient compensation so that the UFEE will be operated by motivated, experienced, and skilled managers and staff. On the other hand, operating costs levels are critical factors in determining the financial performance of the UFEE.

Contingent Grant Facility. The contingent grant facility will cost-share the costs of preparing feasibility studies for projects to be financed by the debt facility. The GEF funds will be disbursed from a special account on the basis of expected UFEE disbursements, following Bank rules and procedures. The contingent grant facility is expected to operate in local currency. The facility will cost-share (up to 67%) with project sponsors the risk of preparing feasibility studies for investments. If the project proceeds to be financed under the debt facility of the UFEE, the grant will be repaid to the contingent grant facility. If the feasibility study does not result in a project that proceeds to finance, the contingent grant will not be repaid. Based on this mode of operation, the facility would gradually be depleted. In

the base case illustrative simulation, the facility is estimated to finance 94 feasibility studies over 5 years, at an average cost of US\$7500, resulting in 38 projects (40 percent) reaching financial closure. Parameters assumed in the illustrative case can be seen in Table A, while the cashflow and results are summarized in Table B. Key factors impacting the success of this facility include operating costs and percentage of grants resulting in successful financing of projects.

Project Finance Facility. Key parameters defining the investment and financial performance of the Project Finance Facility include: (i) the volumes of loan commitments achieved in the debt facility, including the extent of leveraging of the UFEE's capital; (ii) costs, including operating costs and losses due to unrecovered losses from defaults; and (iii) revenue, including interest on loans and interest income from conservative investment of the capital reserve.

The objective of the UFEE is to maximize loan commitments and recovery, and hence energy efficiency investments. To achieve this objective over the long term, it is critical to minimize costs and maximize revenues, in order to avoid erosion of the equity capital, and hence undermine the ability of the UFEE to continue revolving loan commitments. Key factors include:

Capital. The US\$1.975 million level of GEF investment into the UFEE project financing facility is considered the minimum required to achieve a noticeable impact in terms of demonstration, and to provide for sufficient economies of scale in operation to defray fixed costs, such as overhead. The GEF grant allocations for the project finance facility will be disbursed from the special account on the basis of expected loan approvals, following Bank rules.

Commercial Bank Support for Investments. While subject to negotiation with the commercial bank, it is intended that the project finance facility will lend in conjunction with the commercial bank acting as manager, at a ratio that increases over time.

Equity Contribution by the Sponsor. In the case of investments financed on a project basis (e.g. by ESCOs), the facility and commercial bank together would finance up to 85 percent of the total project cost, while in the case of balance sheet financing by a business, the facility and the commercial bank together would finance up to 75 percent of the total project cost.

Repayment Risk. The commercial bank would take the commercial risk on the funds that it would loan from its own resources. The extent to which the commercial bank will share the repayment risk for the funds in the facility is a subject for the bidding and negotiation process. However there is a trade-off between the compensation required by the commercial bank and the commercial risk that it will take for the capital of the facility.

Currency of loans. The facility would be able to lend in both local currency or dollars, setting the interest rate to balance the objectives of maintenance of capital and providing attractive conditions for lenders. For dollar loans, the interest rate would be set at the same rate as current commercial bank loan rates (currently about 9 percent). For local currency loans, the interest rate could be set at inflation plus an agreed number of interest points, to better assure maintenance of capital.

Balancing transaction volume and other factors. Efforts to maximize project finance need to be balanced with the need to avoid excessive losses to capital. Some of the trade-offs include:

- The most profitable transactions are large loans, spanning several years with the most credit-worthy customers. However, much energy efficiency potential is in small companies that can take only small loans. Excessive control of transaction costs will cause the goals

of the UFEE to be compromised, but too many small transactions could increase both operating costs and risks.

- Higher loan interest rates and stricter loan requirements could increase the profitability of the UFEE, but excessively constrain loan commitment volume, and hence undermine the UEEF's main objective. Excessively low loan pricing, however, combined with high defaults could cause losses to the reserve, and undermine future loan commitment capacity.

Interest rates. Pricing of interest rates should aim to cover both operating costs and default losses, thereby allowing income growth and capital preservation. Businesses should be offered differentiated interest rates that reflect different levels of security. For example, a business that borrows in dollars and is supported by a robust balance sheet and strong contracts with credit-worthy customers could be offered a relatively low loan interest rate. A business that borrows in local currency should have to pay a higher rate that reflects the foreign exchange rate risk due to differential inflation. However, the UFEE cannot set interest rates at levels which undermine demand, and compromise the principal objective of supporting growth in energy efficiency investments. UFEE should also not distort the market by offering lower than commercial interest rates.

Investment Income on Capital. Any unutilized capital must be invested in conservative, liquid, and secure financial products. Given the returns of such investments in Uruguay today, interest income on the capital reserve balance, minus prudent on-hand cash reserve, is expected to be about 1 percent per year.

Default levels. The default level of the loan portfolio is one of the most important parameters for the loan fund operation. However, there is little available in terms an accurate benchmark with which to access probable default rates for this new loan fund. Given the uncertainties, it is critical to build significant incentives into the Trustee Agreement for the commercial bank to minimize defaults and maximize loss recoveries.

Financial Model and Assumptions. A detailed financial model for the UFEE project finance and contingent loan facility was constructed to provide an income statement and a cashflow statement sheet in nominal terms for the operation of the UFEE a period of 10 years. One comprehensive, illustrative case is presented in Table 3 at the end of this Annex., which follows the assumptions presented in Table C. Assumptions are then varied in Table B, which also shows the resulting variations in the value of the capital at the end of 10 years and the total energy efficiency investment level supported.

Table A: Financial Model: Key Assumptions for an Illustrative UFEE Case

Assumptions ¹	Project Finance Facility	Contingent Grant Facility
Average loan tenor (yrs)	2	1
Loan interest rate	9%	0%
Interest rate on unutilized principal	1%	1%
Equity contribution by sponsor (%)		
Project financed (ESCO) project	15%	not less than 33%
Balance sheet financed project	25%	no less than 33%
Types of Projects	100%	-
Project Financed (ESCO)	25%	-
Balance sheet financed	75%	-

Sensitivity Analysis. The UFEE in Uruguay would begin operations in a climate of uncertainty because of the current financial and banking crisis in Uruguay. However, the illustrative case and sensitivity analysis for the project finance facility show that even with wide variation in key assumptions the UFEE can leverage at least three times the GEF grant in energy efficiency investments in the six year period of the project. In the illustrative case in Table C, the capital reserve of US\$1.975 million is able to generate about US\$6.8 million in projects over 6 years and US\$9.5 million over the ten year period.

In the illustrative case the capital reserve value at the end of ten years would be about US\$115,000 less than at the beginning of the project. However, there also are a variety of scenarios whereby the capital reserve loses significantly more value than in the illustrative case. Particularly important are the effect of sharp increases in operating costs and default rates—poor results in these areas not only cause sharply greater losses to the capital reserve, but also thereby detract from energy efficiency investment results. If the default rate were to double, the value of the fund would be about half of the initial value, at the end of ten years.

Table B: Illustrative Sensitivity Analysis of Selected Parameters for UFEE Project Finance Facility (US\$ million)

Possible Scenario	Estimated Capital 1 (million)		Total Number		Total Investments Generated 2 (million)	Maximum Leverage to GEF Funds
	Debt Facility	Contingent Loan Facility	Loans	Contingent Loan Grants		
Base Case	\$1,860	\$.059	63	94	\$9.500	3.84
Transaction Volume – increase to full use of facility	\$1.966	\$.059	102	94	\$15.153	6.12
Transaction Volume – decrease by 50%	\$1.771	-\$0.11	31	57	\$4.683	1.89
Loan sharing with banks – increase by 50%	\$1.860	\$.059	63	94	\$12.976	5.24
Loan sharing with banks – decrease to 0%	\$1.860	\$.059	63	94	\$6.459	2.61
Administration fee – increase by 100%	\$1.344	-\$0.15	63	94	\$9.500	3.84
Administration fee – decrease by 50%	\$2.118	\$.098	63	94	\$9.500	3.84
Default rate - increase by 100%	\$1.407	-\$0.144	63	94	\$9.500	3.84
Default rate - decrease by 50%	\$2.126	\$.207	63	94	\$9.500	3.84
Interest rate – increase by 50%	\$2.316	\$.059	63	94	\$9.500	3.84
Interest rate – decrease by 33%	\$1.556	\$.059	63	94	\$9.500	3.84

1. At end of period2. Cumulative investments made over the 10-year life of the project

Table C: Key Indicators from Illustrative Financial Simulation

Table A5-3: Income and Expense and Cashflow Statements for UFEF Project Finance Facility and Contingent Grant Facility

Revenues and Expenses Statement: Project Finance Facility

Year	0	1	2	3	4	5	6	7	8	9	10	Totals
Revenues												
Interest revenue from term loans	\$0	\$8,100	\$43,200	\$87,210	\$131,895	\$139,725	\$137,700	\$128,790	\$92,340	\$81,000	\$24,300	\$874,260
Interest on cash balances	\$0	\$256	\$96	\$755	\$3,601	\$5,642	\$4,937	\$4,685	\$7,326	\$8,549	\$12,431	\$48,279
Total revenues	\$0	\$8,356	\$43,296	\$87,965	\$135,496	\$145,367	\$142,637	\$133,475	\$99,666	\$89,549	\$36,731	\$922,539
Operating Expenses												
Startup Costs	\$49,375	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,375
Training, and capacity building Cost	\$50,000	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000
Cost of Desk Study reviews	\$0	\$18,000	\$42,000	\$60,000	\$66,000	\$54,000	\$54,000	\$36,000	\$36,000	\$12,000	\$0	\$378,000
Admin./Operating Cost (Fund Manager)	\$0	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$493,750
Total Expenses	\$99,375	\$117,375	\$91,375	\$109,375	\$115,375	\$103,375	\$103,375	\$85,375	\$85,375	\$61,375	\$49,375	\$1,021,125
Expenses from operations	\$0	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$49,375	\$493,750
Non-Operating (Financial) Expenses												
Principal write-offs	\$0	\$0	\$0	\$36,000	\$72,000	\$90,000	\$90,000	\$54,000	\$54,000	\$0	\$0	\$396,000
Losses associated with foreign exchange	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Non-operating Expenses	\$0	\$0	\$0	\$36,000	\$72,000	\$90,000	\$90,000	\$54,000	\$54,000	\$0	\$0	\$0

Statement of Cash Flow: Project Finance Facility

Year	0	1	2	3	4	5	6	7	8	9	10	Totals
Capital balance (beginning of period)												
	\$25,625	\$25,625	\$9,606	\$75,527	\$360,118	\$564,239	\$493,731	\$468,493	\$732,593	\$854,884	\$1,243,058	
Cash Flows												
Capitalization (GEF Grant)	\$0	\$198,000	\$462,000	\$810,000	\$505,000	\$0	\$0	\$0	\$0	\$0	\$0	\$1,975,000
Start-up & Training (GEF Grant)	\$125,000	\$75,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$200,000
Total Revenues	\$0	\$8,356	\$43,296	\$87,965	\$135,496	\$145,367	\$142,637	\$133,475	\$99,666	\$89,549	\$36,731	\$922,539
Total Expenses	(\$99,375)	(\$117,375)	(\$91,375)	(\$109,375)	(\$115,375)	(\$103,375)	(\$103,375)	(\$85,375)	(\$85,375)	(\$61,375)	(\$49,375)	(\$1,021,125)
Other Cash flows												
Amount of Principal Disbursements	\$0	(\$180,000)	(\$420,000)	(\$750,000)	(\$825,000)	(\$810,000)	(\$810,000)	(\$540,000)	(\$540,000)	(\$180,000)	\$0	(\$5,055,000)
Amount of Principal Repayments	\$0	\$0	\$72,000	\$246,000	\$504,000	\$697,500	\$745,500	\$756,000	\$648,000	\$540,000	\$360,000	\$4,569,000
Income tax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual Net Cash Flow	\$25,625	(\$16,019)	\$65,921	\$284,590	\$204,121	(\$70,508)	(\$25,238)	\$264,100	\$122,291	\$388,174	\$347,356	\$1,590,414
Cumulative Cash Balance (end of period)	\$25,625	\$9,606	\$75,527	\$360,118	\$564,239	\$493,731	\$468,493	\$732,593	\$854,884	\$1,243,058	\$1,590,414	

Revenues and Expenses Statement: Project Development Facility

Year	0	1	2	3	4	5	6	7	8	9	10	Totals
Revenues												
Interest on cash balances	\$0	\$125	\$1	\$26	\$2	\$127	\$123	\$0	\$0	\$0	\$0	\$403
Interest revenue from contingent loans	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total revenues	\$0	\$125	\$1	\$26	\$2	\$127	\$123	\$0	\$0	\$0	\$0	\$403
Operating Expenses												
Start-up Cost	\$12,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Training and capacity building Cost	\$50,000	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$75,000
Cost of desk studies reviews	\$0	\$12,000	\$18,000	\$21,000	\$21,000	\$18,000	\$0	\$0	\$0	\$0	\$0	\$90,000
Admin./Operating Cost (Fund Manager)	\$0	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$0	\$0	\$0	\$0	\$75,000
Total Expenses	\$62,500	\$49,500	\$30,500	\$33,500	\$33,500	\$30,500	\$12,500	\$0	\$0	\$0	\$0	\$252,500
Expenses from operations	\$0	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$0	\$0	\$0	\$0	\$75,000
Non-Operating (Financial) Expenses												
Principal write-offs (conversions to grant)	\$0	\$0	\$45,000	\$80,000	\$80,000	\$35,000	\$48,000	\$0	\$0	\$0	\$0	\$288,000
Losses associated with foreign exchange	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Non-Operating Expenses	\$0	\$0	\$45,000	\$80,000	\$80,000	\$35,000	\$48,000	\$0	\$0	\$0	\$0	\$288,000

Statement of Cash Flow: Project Development Loan Facility

Year	0	1	2	3	4	5	6	7	8	9	10	Totals
Capital balance (beginning of period)												
	\$12,500	\$12,500	\$125	\$2,626	\$153	\$12,654	\$12,281	\$59,903	\$59,903	\$59,903	\$59,903	
Cash Flows												
Capitalization (GEF Grant)	\$0	\$72,000	\$108,000	\$126,000	\$126,000	\$68,000	\$0	\$0	\$0	\$0	\$0	\$500,000
Start-up & Training (GEF Grant)	\$75,000	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000
Total Revenues	\$0	\$125	\$1	\$26	\$2	\$127	\$123	\$0	\$0	\$0	\$0	\$403
Total Expenses	(\$62,500)	(\$49,500)	(\$30,500)	(\$33,500)	(\$33,500)	(\$30,500)	(\$12,500)	\$0	\$0	\$0	\$0	(\$252,500)
Other Cash flows												
Amount of Principal Disbursements	\$0	(\$60,000)	(\$90,000)	(\$105,000)	(\$105,000)	(\$108,000)	\$0	\$0	\$0	\$0	\$0	(\$468,000)
Amount of Principal Repayments	\$0	\$0	\$15,000	\$10,000	\$25,000	\$70,000	\$60,000	\$0	\$0	\$0	\$0	\$180,000
Income tax	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual Net Cash Flow												
	\$12,500	(\$12,375)	\$2,501	(\$2,474)	\$12,502	(\$373)	\$47,623	\$0	\$0	\$0	\$0	\$59,903
Cumulative Cash Balance (end of period)												
	\$12,500	\$125	\$2,626	\$153	\$12,654	\$12,281	\$59,903	\$59,903	\$59,903	\$59,903	\$59,903	\$59,903

Annex 6(A): Procurement Arrangements

URUGUAY: Energy Efficiency Project

Procurement

Procurement for the proposed project would be carried out in accordance with World Bank *"Guidelines: Procurement Under IBRD Loans and IDA Credits"*, published in January 1995 (revised January/August 1996, September 1997 and January 1999); and *"Guidelines: Selection and Employment of Consultants by World Bank Borrowers"* published in January 1997 (revised in September 1997, January 1999 and May 2002), and the provisions stipulated in the Grant Agreement.

Project implementation will require procurement of goods, and services, including hiring of consultants for studies, technical support to implementing agencies and training activities. MIEM will be the executing agency of the project and will implement the Energy Efficiency Market Development Component and the Project Management Component. UTE will implement the Utility Based Energy Efficiency Services Component and will support MIEM's PMU with project management, including advice and coordination of procurement activities, according to the provisions of the subsidiary agreement between MIEM and UTE.

MIEM, with the Project's support, will incorporate procurement capacity by hiring a procurement specialist under TOR satisfactory to the Bank. UTE has an experienced procurement team familiar with Bank guidelines and procurement documents and procedures. UTE's experience will help to minimize procurement risks regarding the use of grant funds. At the Project launch, all participants involved in procurement will participate in a workshop to review Bank guidelines and the standard bidding documents that will be used during project implementation.

Procurement Plan. MIEM, together with UTE, prepared a procurement plan for the tasks to be carried out during implementation. The procurement plan consists of: (i) procurement plan for the project's goods and works, applicable procedures, packaging, and process scheduling; (ii) a consultant selection process plan for the project's consultant services, including applicable procedures, shortlists and selection criteria. The procurement plan will be updated annually. It will detail (i) list of contracts completed, under execution, under procurement, and pending to be procured, indicating main benchmarks in the procurement process; (ii) costs of completed and under execution contracts and estimated costs for upcoming contracts; (iii) schedule of bidding; and (iv) amount contracted or estimated to be contracted by methods of procurement of goods or selection of consultants. Currently, only one contract, for the supply of Solar Home Systems (SHS) has been awarded by UTE following Bank rules and procedures, which is proposed to be retroactively financed by GEF.

The commercial bank in charge of managing the UFEE would be selected competitively among the banks willing to complement the financing of the UFEE with their own resources. The contingent grant window of the UFEE would finance feasibility studies for EE projects. The UFEE would share up to 67 percent of the cost of the studies. The GEF allocation would be disbursed through a Special Account to cover the amount of the expected grants (for services). The UFEE project finance window would finance investment

projects, together with the financing of the Bank managing the UFEE. The UFEE together with the commercial bank would share up to a maximum of 85 percent of the investments. Procurement by private borrowers of sub-loans will be performed following commercial practice. The GEF funds allocated to this activity will be also disbursed through an Special Account to cover for the amount of the expected loans (for installed goods and services). The amounts of the estimated disbursements of the both windows are included as sub-loans and sub-grants under the column Other in Table A.

The project's procurement arrangements for each component are summarized in Table A.

Procurement methods (Table A)

Table A: Project Costs by Procurement Arrangements
(US\$ million equivalent)

Expenditure Category	Procurement Method ¹				Total Cost
	ICB	NCB	Other ²	N.B.F.	
1. Works	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
2. Goods	1.15 (1.15)	0.28 (0.28)	0.27 (0.27)	2.24 (0.00)	3.94 (1.70)
3. Services	0.00 (0.00)	0.00 (0.00)	2.70 (2.70)	7.02 (0.00)	9.72 (2.70)
4. Sub-loans and sub-grants UEEF	0.00 (0.00)	0.00 (0.00)	2.47 (2.47)	5.03 (0.00)	7.50 (2.47)
Total	1.15 (1.15)	0.28 (0.28)	5.44 (5.44)	14.29 (0.00)	21.16 (6.87)

^{1/} Figures in parentheses are the amounts to be financed by the Bank Grant. All costs include contingencies.

^{2/} Includes goods to be procured through international and national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

^{3/} Expenditure Category 3 includes: Consultant Services (US\$2.0 million), Fund Management Services (US\$0.4 million), and Incremental Operating Costs (US\$0.3 million).

Table A1: Consultant Selection Arrangements (optional)
(US\$ million equivalent)

Consultant Services Expenditure Category	Selection Method							Total Cost ¹
	QCBS	QBS	SFB	LCS	CQ	Other	N.B.F.	
A. Firms	1.45 (1.45)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.40 (0.40)	3.00 (0.00)	4.85 (1.85)
B. Individuals	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.85 (0.85)	4.02 (0.00)	4.87 (0.85)
Total	1.45 (1.45)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.25 (1.25)	7.02 (0.00)	9.72 (2.70)

^{1/} Including contingencies

Note: QCBS = Quality- and Cost-Based Selection

QBS = Quality-based Selection

SFB = Selection under a Fixed Budget

LCS = Least-Cost Selection

CQ = Selection Based on Consultants' Qualifications

Other = Single source selection, Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

Figures in parentheses are the amounts to be financed by the Bank Grant.

Prior review thresholds (Table B)

Procurement Review and Methods. The Bank's procurement review will be outlined in the Grant Agreement as per tables A. and AI above and in accordance with Appendix 1 of the *Guidelines for Procurement*. All ICB will be subject to Bank's prior review. The first two NCB procedures in each UTE and MIEM will be subject to prior review as well as the as the first three written quotation procedures.

The Bank's review of selection of consultants will be in accordance with Appendix I of the *Guidelines for Selection and Employment of Consultants* and the provisions stipulated in the Grant Agreement. Consultant contract documents to be reviewed will include TORs, shortlists, evaluation reports, and contract forms. A review process similar to individual consultants, will apply to experts participating in training programs, seminars, and workshops.

Advertising. A General Procurement Notice *for hiring of consultant services* and the *ICB goods and consultants services* will be published in the *United Nations Development Business*, in January of each year. This Notice will be updated annually for outstanding consultant services and ICB goods. In addition, detailed consultant services and assignments will be advertised, as they become available, in at least one national newspaper of a large circulation. Furthermore, the implementing agencies may also advertise some of the project's studies in an international newspaper or a technical magazine. The agencies may also seek "expressions of interest" by contacting embassies, professional organizations, or firms that it knows or that are registered in DACON (paragraph 1.15 of the *Guidelines for Selection and Employment of Consultants*). In this case, the information required would be minimum, limited to make a judgment on the firm's suitability. Sufficient time (not less than 30 days) will be provided for responses, before preparing the short lists. UTE will also publish all requests for goods and services in its Web site.

Non-GEF Financed Procurement. O&M of the PMU, as well as staffing with government personnel and procurement of vehicles and office furnishings will be not financed by the GEF Grant.

Procurement Records. Procurement records, reflecting all details of the procurement activities of the project will be kept available for review by auditors and Bank supervision missions. This include information on the main benchmarks and documents in the procurement process, including public notices, request for proposals and bidding documents and addenda, bid opening information, bid evaluation reports, formal appeals by bidders and outcomes, signed contracts with related addenda and amendments, records on claims and dispute resolution, as well as complete main supervision, monitoring, and auditing activities. The records will be maintained available for two years after the project's closing date.

Procurement Risk Assessment. A project Procurement Capacity Assessment was carried-out. The project's risk is evaluated as low. No problems are expected considering the track record of UTE, the added capacity to MIEM with project's support, and the arrangements made to monitor and coordinate all procurement activities with UTE's participation. To minimize risks, the Operational Manual sets up the procedures to ensure adequate supervision and quality control of the procurement process. A Procurement Seminar at project start-up will contribute to update the local knowledge on procedures, standard documents, procurement policies and procedures and procurement audits.

The following set of actions/recommendations result from the assessment, would be completed according to the time-frame indicated in the table below.

Description	Objective	Time-frame
Provisions in the subsidiary agreement, acceptable to the Bank, setting forth UTE's responsibilities to assist MIEM in carrying out all procurement activities, process procurement documents with the Bank, and ensure the quality of such activities and documents	Assist MIEM in efficiently carry out Project procurement.	Prior to effectiveness
Appoint a procurement specialist in MIEM to coordinate with UTE	Provide required coordination.	Prior to disbursements.
Preparation of a procurement plan for the Project.	Enhance planning.	Completed by negotiations.
Preparation of Operational Manual	Improve Project knowledge	Prior to effectiveness
Project-launch workshop	As above	Within 30 days after effectiveness
Carry out Independent Procurement Reviews (IPRs)	Review quality of procurement	Mid 2006

Frequency of Procurement Supervision Missions: The Bank will carry-out ex-post reviews and supervision of procurement activities annually.

Procurement Reviews. The PMU will provide the Bank, before July 31 of 2006 procurement reviews by independent procurement experts, acceptable to the Bank. The terms of reference for the procurement reviews will be in accordance with internationally accepted standards.

Table B: Thresholds for Procurement Methods and Prior Review¹

Expenditure Category	Contract Value Threshold (US\$ thousands)	Procurement Method	Contracts Subject to Prior Review (US\$ millions)
1. Works No works are included in the procurement plan	>3000 250 to 3000 <250	ICB NCB Three Quotations	0.00
2. Goods	>250 <50 to 250 <50	ICB NCB Shopping	All First two First two
3. Services a. Firms	>100 <100	Quality and Cost Based Consultants qualifications Least cost Single Source	All TORs and shortlist only TORs and shortlist only All
b. Individuals	>50 <50	Bank guidelines for individual consultants Bank guidelines for individual consultants	All TORs and shortlist only
c. Other Services (1) Projects financed with UFEE sub-loans and grants	 <100	 Commercial practice	

Total value of contracts subject to prior review: US\$3.32 million

Overall Procurement Risk Assessment:

Frequency of procurement supervision missions proposed: One every 12 months
(includes special procurement supervision for post-review/audits)

^{1/} Thresholds generally differ by country and project. Consult "Assessment of Agency's Capacity to Implement Procurement" and contact the Regional Procurement Adviser for guidance.

Annex 6(B): Financial Management and Disbursement Arrangements

URUGUAY: Energy Efficiency Project

Financial Management

1. Summary of the Financial Management Assessment

MIEM, is the designated recipient of the Grant funds and will be the executing entity for the project. MIEM will sign a subsidiary agreement with UTE, to cover the execution of the Utility-based Energy Efficiency Services Component, and the provision of support services to MIEM from UTE for financial management, procurement and reporting. MIEM would also sign a Trusteeship Agreement with a commercial bank to operate the Uruguay Fund for Energy Efficiency (UFEE).

UTE will provide support to MIEM on financial management, according to the provisions of the subsidiary agreement between MIEM and UTE. UTE has appropriate infrastructure and human resources to carry out and manage its fiduciary responsibilities in an orderly and well established manner. The financial management information system in use by UTE is a very complete software based on the registration of operations and transactions. Nevertheless, some arrangements have to be made to provide the Bank with the necessary information for the preparation of Bank account reconciliation and for the monitoring of the project using the financial monitoring reports (FMRs). Some conditionalities have been identified to be fulfilled before effectiveness and an action plan was prepared, assigning responsibilities and an adequate timetable. The project risk is medium based on the existence of medium risk levels in areas such as the coordination of financial management responsibilities between MIEM and UTE, which could affect the performance if it is not properly achieved, the flow of funds management, and counterpart in kind contributions. These risk areas need to be examined and mostly resolved before effectiveness to lower the risk levels.

Project Management Unit

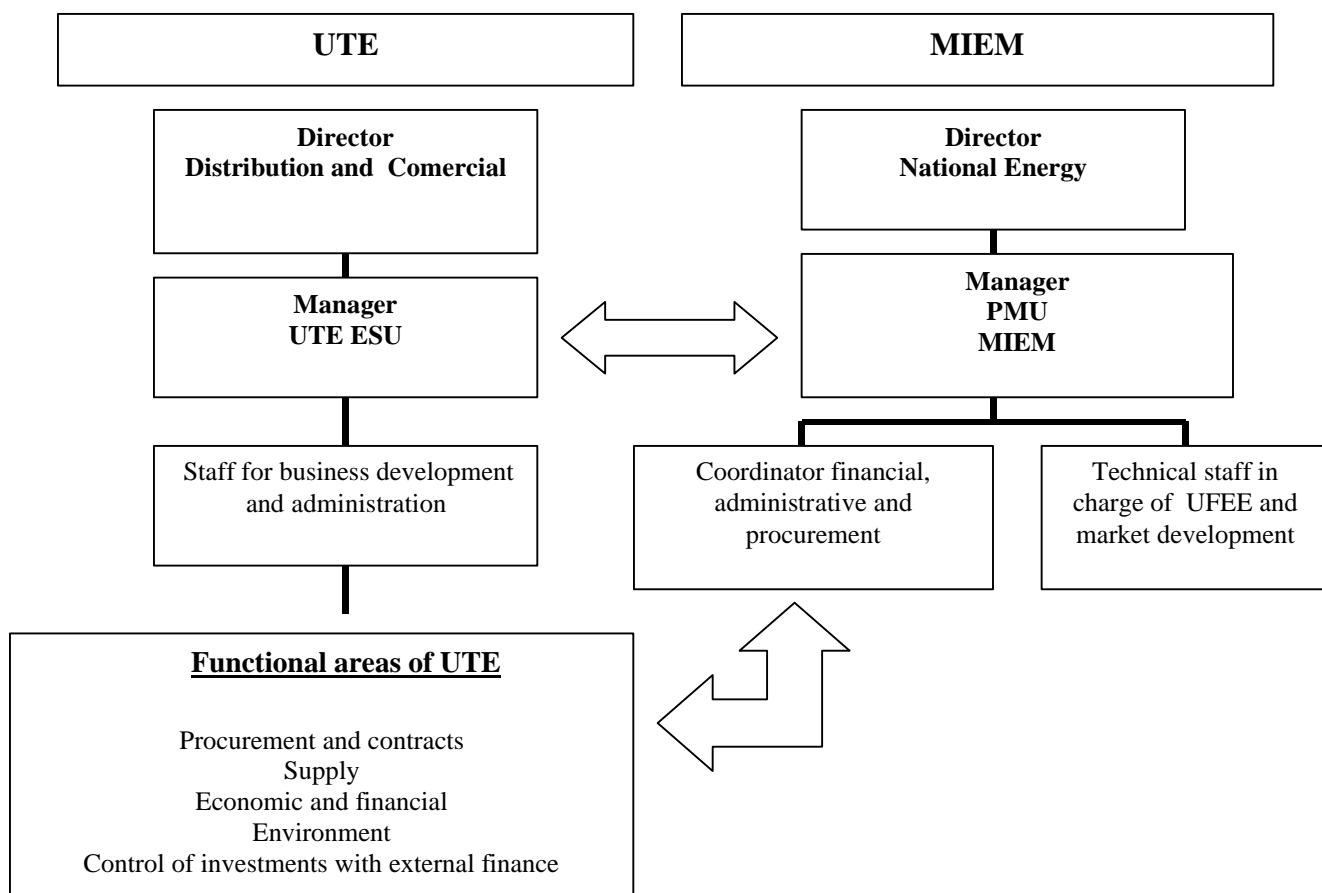
As noted above, MIEM is the executing agency of the project and will have a Project Management Unit. UTE's Utility-based Energy Efficiency Services Component will be executed by the Energy Savings Unit (ESU) under the Distribution and Commercial Department, to be established by effectiveness. UTE financial management, procurement and reporting services will be managed by the ESU, assisted by the specialized departments of UTE.

Staffing

MIEM's Project Management Unit would be responsible for the overall project management and supervision. It would have a full-time administrative coordinator, that would advise the Project Manager on financial management issues, including the support to be provided by UTE, and the activities of the commercial bank that will be managed the UFEE. The coordinator will be contracted before effectiveness, based on TORs and selection to be approved by the World Bank. MIEM's financial and administrative coordinator would work directly with UTE's technical departments, including accounting, and reporting. Please see the chart below for a graphic description.

UTE has the necessary infrastructure and human resources, to carry out its financial and accounting responsibilities, in an orderly and well established manner. It would provide support, as needed, in the procurement, legal and financial management areas which would facilitate Project execution.

Figure A. Organizational Chart



Financial Management Information System

The financial management information system currently used by UTE is a very complete software based on the registration of operations and transactions. The accounting system is based on a “cash based registration” of operations.

The main issues included in the assessment were the following:

1. Disbursement arrangements, replenishment and flow of funds:
2. Reconciliation of bank account with the Bank disbursement information,
3. Preparation of financial statements for sources and uses of funds for each activity , sub-component and component and Financial Monitoring reports FMRs for the project as a whole,
4. External auditing of bank accounts and project accounting,
5. Flexibility in the preparation and use of the chart of accounts for each project,
6. Use of cost centers to distribute indirect costs to individual projects,
7. Tracking counterpart contributions

Reconciliation of bank account with the Bank disbursement information:

MIEM, assisted by UTE, will perform a reconciliation process between their bank account and the resources received from the different sources. MIEM will request the commercial bank to keep separate accounts for each grant or loan (sub-project) in order to verify the resources allocation.

Preparation of Financial Statements for Sources and Uses of Funds for each activity, sub-component and component and Financial Monitoring reports FMRs for the project as a whole:

Financial Statements for Sources and Uses of Funds for each activity will be required in order to have a clear picture of all incomes and expenditures related to individual activity. This would allow the task team to follow-up on the transfers, incomes and expenditures for each activity (including subprojects). The entity responsible for the preparation of the financial statements will be MIEM, assisted by UTE. For the UFEE, the commercial bank will be responsible for the financial statements for the trust fund "Fideicomisario". This statements will be used by MIEM and UTE to follow up on implementation of each activity, sub-component and component, and also to prepare the accounting records for the project as a whole.

Project Financial Monitoring Reports (FMR). A draft of project financial monitoring reports recommended for this project would be suggested and designed by a task team group including the Bank financial management specialist, MIEM and UTE financial and accounting staff. The final report formats need to be completed in response to the new FMR Guidelines prepared by The Bank by effectiveness. The entity responsible to prepare this FMRs will be the MIEM assisted by UTE financial specialists.

The FMRs will include the following reports:

1. Sources and Uses of Funds, for each quarter and cumulative including a forecast for the next three months. The format will reflect the receipts and payments, and the net available cash.
2. Uses of Funds by Project Component, Activity and type of Expenditure based on the project cost description approved for the operation.
3. Physical Progress Report for each quarter, considering the project component, activity and output, comparing the total for the project life, the cumulative to date and the actual as a percentage (%) of the total planned for project life.
4. Special account statement and reconciliation.

Flexibility in the preparation and use of the chart of accounts for each project:

UTE registration system needs to be reviewed in detail prior to project effectiveness. In principle, the preliminary review showed that the system in place provides a flexible and competent accounting environment to process the project information.

Use of cost centers to distribute indirect costs to individual projects:

The use of cost centers is recommended for this project. As this is not a common practice at UTE, and there is no information available by cost center, it would be necessary to make the necessary adjustments to the system to make it possible for the project.

Tracking counterpart contributions:

A set of standard factors for the financial quantification of in-kind contributions and a sound methodology must be defined. The technical specialists in UTE - ESU should be responsible for providing this information using the methodology to be developed on an homogenized manner. The commercial bank should be the responsible for the implementation of the methodology in the field through their accounting specialists using the same templates for all subprojects to be involved in the project.

Conditions

Effectiveness:

1. MIEM administrative coordinator in place, to assist in financial management, under TORs and selection to be approved by World Bank.
2. The development of the financial management system (Including: FMRs, the chart of accounts for project operations, to set up a system to classify the information by project disbursement categories, components and activities, the financial management chapter of the Operational Manual for the project, and in - kind contributions templates and methodology).

Financial Management Action Plan

The following action plan addresses the outstanding issues identified during the assessment:

Action	Responsible Entity	Completion Date
1. Contracting of administrative coordinator	MIEM, approved by WB	Before effectiveness
2. The development of the new FMRs,	UTE/WB	Before effectiveness
3. The development of the Chart of Accounts	UTE	Before effectiveness
4. Operational Manual for the project.	MIEM/UTE	Before effectiveness
5. In kind contributions templates and methodology	UTE/WB	Before effectiveness

Supervision Plan

A financial management supervision mission should be performed before effectiveness and annual subsequent supervision mission are required to monitor the project performance based on the FMRs and the implementation process in the field.

2. Audit Arrangements

There will be one external audit for the project, according to Bank standards and by auditors hired with the Bank's no objection, to be financed by the GEF Grant. They will carry out an annual financial audit of the project as required by OP/BP 10.02. The auditors will conduct interim audits through each year of project implementation.

In addition, internal auditing procedures are performed following UTE financial management manuals. The internal control and auditing system contributes to assure an adequate follow up of the use of funds.

3. Disbursement Arrangements

The project will use FMRs disbursements procedures; disbursements could be made under the traditional Statements of Expenditures (SOEs) and Direct Withdrawal Applications (DWAs) only as an alternative to FMRs disbursements in case the project will request so. In the case of the latter, disbursements will be made on the basis of full documentation for all expenditures made under contracts requiring prior review by the Bank, and contracts whose value will be raised above the prior review limits as a result of amendments. All consolidated SOEs documentation will be maintained by UTE for post-review and audit purposes. Reimbursement requests should be sent to the Bank on a monthly basis.

Replenishment:

The authorized first allocation to the Special Account would be up to US\$ (TBD). In case the project will change from FMRs to SOE's, monthly replenishment of funds will be made on evidence of satisfactory utilization of the previous advance(s) as evidenced by the documentation submitted in support of disbursement applications. Replenishments, up to the Authorized Allocation(s) will be made initially on the basis of Applications for Withdrawals (Form 1903) accompanied with the supporting and other documentation specified in the Disbursement Handbook.

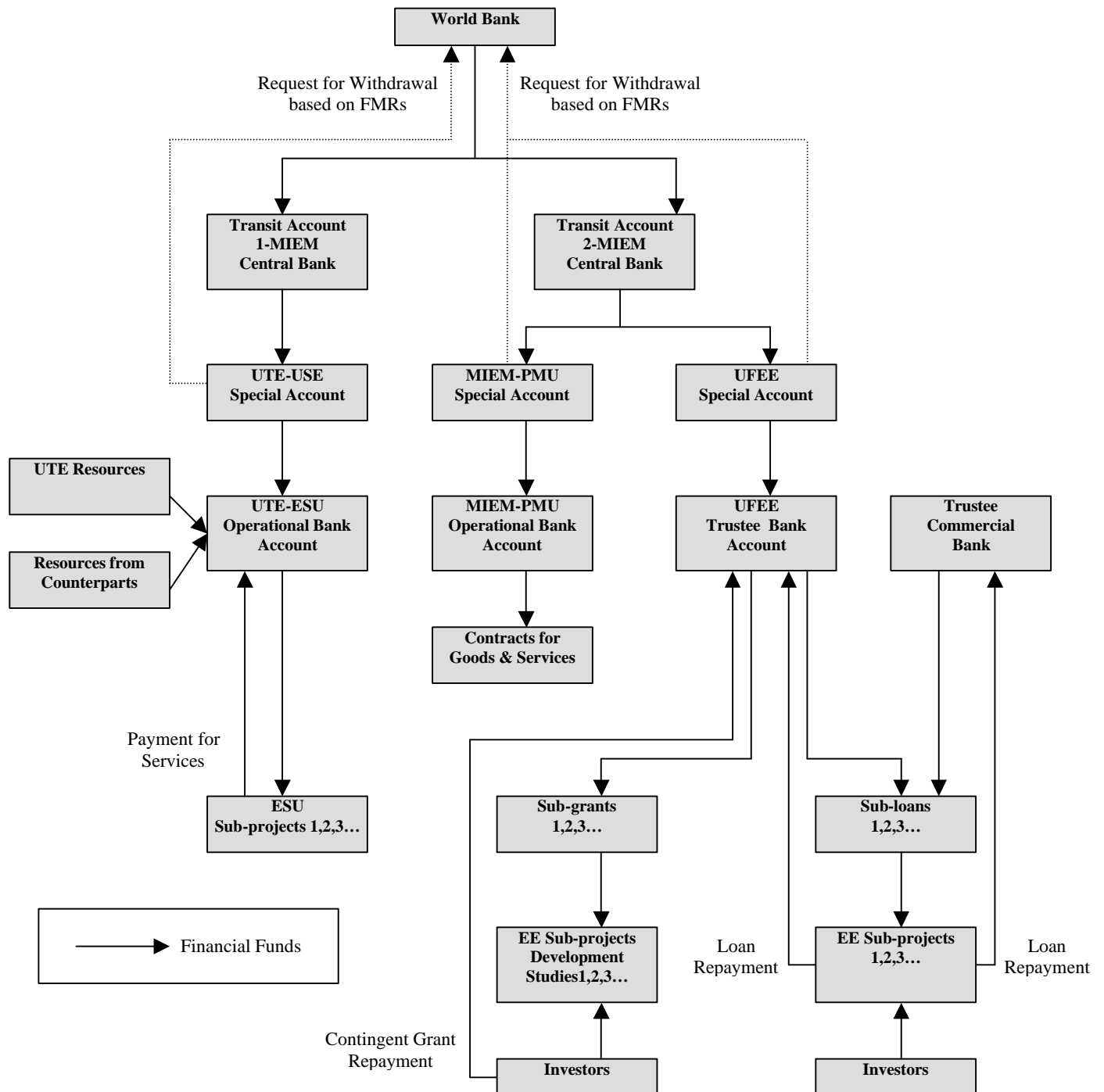
Flow of Funds:

The project will use two transit accounts to be open by MIEM at the Central Bank of Uruguay and three special accounts (as it is define by the general definition of special account used by the WB/Loan Department). One special account will serve sub-components 1.1: Energy Efficiency Market Development and 1.2.a, Fund management. The second special account will serve sub-components 1.2 b and c, the Project Development and Project Finance Facilities operated by UFEE. The third special account will operate for component 2: Utility based Energy Efficiency Services. The special accounts will be opened at a commercial bank. Individual operational bank accounts will operate in a commercial bank account for the following purposes:

- Funds managed by the trust fund on behalf of the MIEM under component 1 ("Fideicomiso"),
- Other funds managed by MIEM for Components 1: Energy Efficiency Market Development and 3: Project Management.
- Funds managed by UTE under Component 2: Utility based Energy Efficiency Services, and
- Funds received from counterpart contributions from other government agencies, municipalities or the private sector, if any for the second component.

Separate bank accounting data will be provided in order to have the capability to follow-up each project activity individually. A figure explaining the flow of funds is presented as follow:

Figure B. Flow of Funds



Allocation of grant proceeds (Table C)

Table C: Allocation of GEF Grant Proceeds*

Expenditure Category	Amount in US\$million	Financing Percentage
1. Goods	1.700	
2.2a-d and 2.3b UTE-ESU energy efficiency projects (Efficient public illumination systems, efficient equipment in residential, commercial and governmental markets, and rebates for Solar Home Systems)	1.370	SHS-US\$125 per system Other-100% of efficient equipment procured internationally and ex-factory, 77% other local
1.1c Laboratory equipment for labeling program	0.330	
2. Energy Efficient Projects Financed by UFEE	2.475	
1.2b Contingent sub-grants for project development	0.500	100% of the sub-grant
1.2c Sub-loans for energy efficiency investment projects	1.975	100% of the sub-loan
3. Consultant Services	2.000	
1.1a Policy and regulatory	0.400	87%
1.1b Training and education	0.100	87%
1.1c Implementation and dissemination of labeling program	0.670	87%
1.1d ESCO support	0.125	87%
2.1a UTE-ESU TA	0.180	87%
2.1e UTE-ESU market studies	0.175	87%
2.3a Program development SHS	0.150	87%
3.1b Monitoring and evaluation	0.200	87%
1.2a Fund Management Services	0.400	87%
3.1a. Incremental operating costs	0.300	87%
Total GEF Financing	6.875	

*Includes contingencies.

Annex 7: Project Processing Schedule
URUGUAY: Energy Efficiency Project

Project Schedule	Planned	Actual
Time taken to prepare the project (months)	42	42
First Bank mission (identification)	06/12/2000	06/12/2000
Appraisal mission departure	12/08/2003	12/08/2003
Negotiations	01/25/2004	03/10/2004
Planned Date of Effectiveness	06/30/2004	07/30/2004

Prepared by:

Susan V. Bogach

Preparation assistance:

Edward Hoyt, Philip Doyle - Econergy , David Glejberman, Stephanie Campbell- Alliance to Save Energy, Iberdrola Ingenieria y Consultoria, Eduardo Hector Leon, Claudio Carpio.

Bank staff who worked on the project included:

Name	Speciality
Susan V. Bogach	Task Team Leader
Nelson de Franco	Lead Power Eng (formerly Task Team Leader)
Juan Carlos Alvarez,	Counsel
Pilar Gonzalez	Counsel
Luis Vaca-Soto	Consultant
Luis Schwarz	Sr. Financial Management Specialist
Emilio Rodriguez	Procurement Consultant
Enzo de Laurentis	Sr. Procurement Specialist
Morag Van Praag	Sr. Financial Officer
Rashid Benmasseoud	Operations Adviser
Jas Singh, Walter Vargara, Charles Feinstein	Peer Reviewers
Fernanda Pacheco	Lang. Program Assistant

Annex 8: Documents in the Project File*
URUGUAY: Energy Efficiency Project

A. Project Implementation Plan

B. Bank Staff Assessments

C. Other

1. *Energy Sector Capital Markets Assessment and Program Design*, Uruguay Energy Efficiency Project, Ecoenergy International, June 2003
2. *Estimate of Emission Reductions*, Ecoenergy International, February 2003
3. *Uruguay Fund for Energy Efficiency Financial Model*, February 2003.

*Including electronic files

Annex 9: Statement of Loans and Credits

URUGUAY: Energy Efficiency Project

16-Apr-2003

Project ID	FY	Purpose	Original Amount in US\$ Millions		Cancel.	Undisb.	Difference between expected and actual disbursements ^a	
			IBRD	IDA			Orig	Frm Rev'd
P077172	2003	UR Structural Adjustment	151.52	0.00	0.00	50.00	-101.52	0.00
P078726	2003	UY Public Services & Social Sectors SAL	150.00	0.00	0.00	151.52	0.00	0.00
P080263	2003	UY SSAL	151.52	0.00	0.00	50.00	-51.52	0.00
P081495	2003	UY Public Services & Social Sectors SSAL	100.00	0.00	0.00	101.02	0.00	0.00
P074543	2002	UY FOOT & MOUTH DISEASE - ERL	18.50	0.00	0.00	6.32	-12.18	0.00
P070937	2002	UY- Basic ED3	42.00	0.00	0.00	39.37	1.96	0.00
P070058	2001	UY PUBLIC SERVICES MODERNIZATION TA	6.00	0.00	0.00	5.60	1.10	0.00
P063383	2000	UY APL OSE MOD&REHAB.	27.00	0.00	0.00	24.73	21.03	0.00
P041994	1999	UY-Basic Ed 2	28.00	0.00	0.00	2.79	2.54	0.00
P049267	1999	UY TRANSPORT II	64.50	0.00	0.00	0.37	0.37	0.00
P039203	1997	UY FOREST PROD.TSP	76.00	0.00	5.00	38.60	43.60	0.00
P008177	1996	UY POWER TRNMSN & DISTR	125.00	0.00	0.00	58.96	58.96	0.00
Total:			940.04	0.00	5.00	529.29	-35.65	0.00

URUGUAY
STATEMENT OF IFC's
Held and Disbursed Portfolio
Jun 30 - 2002
In Millions US Dollars

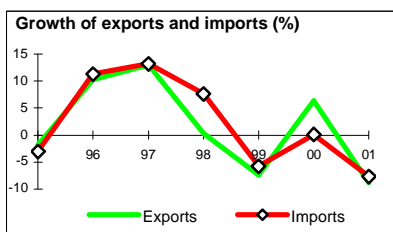
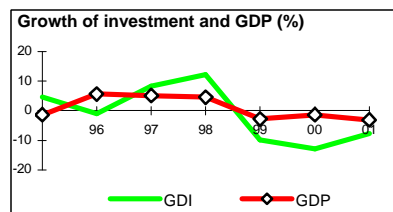
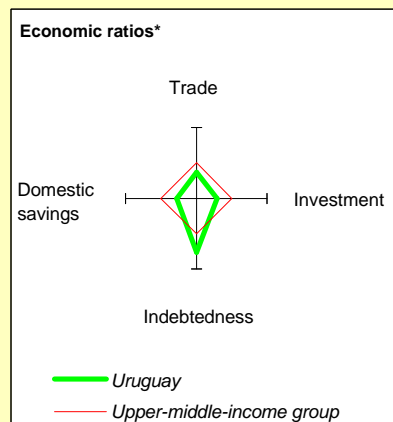
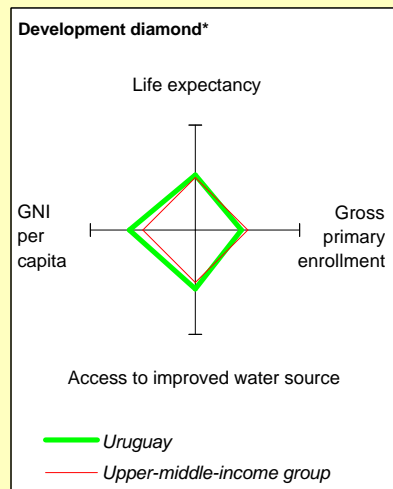
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1985/92	Azucitrus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	Banco Montevideo	0.00	9.00	9.00	0.00	0.00	9.00	9.00	0.00
1995	Consortio Aerop.	1.60	0.00	4.00	1.82	1.60	0.00	4.00	1.82
1991	Granja Moro	1.78	0.75	0.00	0.00	1.78	0.75	0.00	0.00
1980/88/96	Surinvest	3.01	0.00	1.93	0.00	0.00	0.00	1.93	0.00
2001	UMontevideo	5.00	0.00	0.00	0.00	3.30	0.00	0.00	0.00
	Total Portfolio:	11.39	9.75	14.93	1.82	6.68	9.75	14.93	1.82

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
2002	Conaprole	35.00	0.00	0.00	15.00
	Total Pending Commitment:	35.00	0.00	0.00	15.00

Annex 10: Country at a Glance

URUGUAY: Energy Efficiency Project

POVERTY and SOCIAL		Uruguay	Latin America & Carib.	Upper-middle-income
2001				
Population, mid-year (millions)		3.4	524	504
GNI per capita (Atlas method, US\$)		5,630	3,560	4,460
GNI (Atlas method, US\$ billions)		18.9	1,862	2,248
Average annual growth, 1995-01				
Population (%)		0.7	1.5	1.3
Labor force (%)		1.1	2.2	1.8
Most recent estimate (latest year available, 1995-01)				
Poverty (% of population below national poverty line)	
Urban population (% of total population)		92	76	77
Life expectancy at birth (years)		74	70	71
Infant mortality (per 1,000 live births)		14	29	24
Child malnutrition (% of children under 5)		..	9	9
Access to an improved water source (% of population)		98	85	87
Illiteracy (% of population age 15+)		2	11	10
Gross primary enrollment (% of school-age population)		112	130	127
Male		113	131	128
Female		111	128	126
KEY ECONOMIC RATIOS and LONG-TERM TRENDS				
	1981	1991	2000	2001
GDP (US\$ billions)	11.0	11.2	20.1	18.7
Gross domestic investment/GDP	21.4	15.1	14.0	13.4
Exports of goods and services/GDP	15.2	20.7	20.0	18.6
Gross domestic savings/GDP	17.6	18.0	13.0	12.2
Gross national savings/GDP	17.0	16.2	12.9	11.8
Current account balance/GDP	-4.2	0.4	-2.7	-2.5
Interest payments/GDP	2.0	4.2	4.2	5.0
Total debt/GDP	19.7	37.4	40.8	59.3
Total debt service/exports	16.2	33.1	33.6	34.2
Present value of debt/GDP	40.8	..
Present value of debt/exports	183.6	..
	1981-91	1991-01	2000	2001
(average annual growth)				
GDP	1.4	2.6	-1.4	-3.1
GDP per capita	0.8	1.8	-2.2	-3.8
Exports of goods and services	4.4	4.8	6.4	-8.8
STRUCTURE of the ECONOMY				
	1981	1991	2000	2001
(% of GDP)				
Agriculture	11.8	8.1	5.9	6.0
Industry	32.2	34.1	26.0	25.0
Manufacturing	23.5	27.1	16.1	15.6
Services	56.1	57.8	68.1	69.0
Private consumption	68.0	70.1	73.8	74.4
General government consumption	14.4	12.0	13.2	13.4
Imports of goods and services	19.0	17.9	21.0	19.9
	1981-91	1991-01	2000	2001
(average annual growth)				
Agriculture	0.4	1.6	-3.0	-5.1
Industry	0.9	0.6	-2.3	-5.6
Manufacturing	1.4	-0.4	-2.1	-6.2
Services	1.9	3.7	-0.8	-1.8
Private consumption	1.7	3.9	-1.6	-2.7
General government consumption	1.8	2.1	-0.3	-1.3
Gross domestic investment	-2.9	3.0	-13.0	-7.7
Imports of goods and services	2.4	7.1	0.1	-7.7

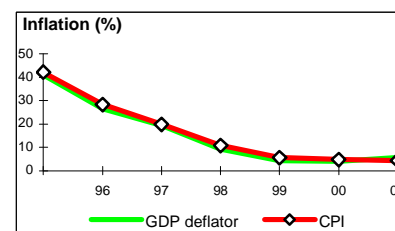


Note: 2001 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

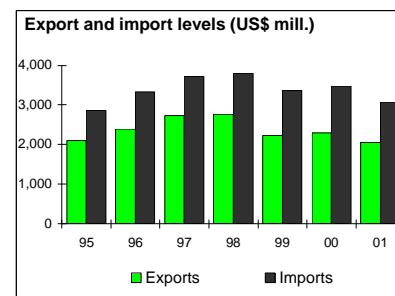
PRICES and GOVERNMENT FINANCE

	1981	1991	2000	2001
Domestic prices				
(% change)				
Consumer prices	0.0	101.1	4.8	4.4
Implicit GDP deflator	27.3	100.8	4.0	5.6
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	32.5	29.4	29.2
Current budget balance	..	4.8	-2.5	-3.3
Overall surplus/deficit	..	1.2	-4.0	-4.1



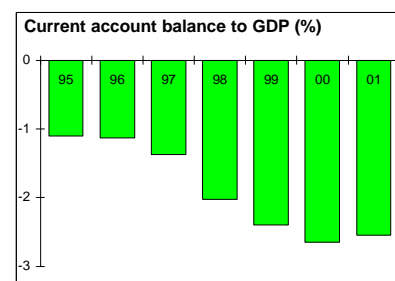
TRADE

	1981	1991	2000	2001
(US\$ millions)				
Total exports (fob)	..	1,605	2,384	2,144
Meat	..	376	701	517
Vegetables	..	207	257	292
Manufactures	..	798	1,057	967
Total imports (cif)	..	1,636	3,311	2,911
Food	..	119	316	279
Fuel and energy	..	232	462	469
Capital goods	..	530	973	824
Export price index (1995=100)	..	93	86	93
Import price index (1995=100)	..	90	85	101
Terms of trade (1995=100)	..	103	102	92



BALANCE of PAYMENTS

	1981	1991	2000	2001
(US\$ millions)				
Exports of goods and services	1,701	2,201	3,658	3,272
Imports of goods and services	2,098	1,966	4,172	3,675
Resource balance	-397	235	-514	-403
Net income	-74	-232	-61	-115
Net current transfers	10	40	43	43
Current account balance	-461	42	-532	-475
Financing items (net)	495	-270	835	993
Changes in net reserves	-34	228	-303	-518



Memo:

Reserves including gold (US\$ millions)	..	976	2,823	3,341
Conversion rate (DEC, local/US\$)	1.08E-2	2.0	12.1	13.3

EXTERNAL DEBT and RESOURCE FLOWS

	1981	1991	2000	2001
(US\$ millions)				
Total debt outstanding and disbursed	2,174	4,189	8,186	11,071
IBRD	70	407	552	544
IDA	0	0	0	0
Total debt service	298	806	1,100	1,099
IBRD	16	70	176	100
IDA	0	0	0	0
Composition of net resource flows				
Official grants	0	7	0	0
Official creditors	-5	141	193	152
Private creditors	358	-138	362	2,023
Foreign direct investment	49	0	285	319
Portfolio equity	0	47	191	744
World Bank program				
Commitments	70	65	108	25
Disbursements	6	81	141	58
Principal repayments	8	42	61	65
Net flows	-2	39	80	-8
Interest payments	7	28	36	42
Net transfers	-9	11	44	-50

