Re-Submission Date: 05/06/2010

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID[1]: 4213 **PROJECT DURATION:40** months
GEF AGENCY PROJECT ID: AR-GXXX
COUNTRY(IES): Argentina
PROJECT TITLE: Sustainable Use of Biogas from Agro Industrial and Solid Waste Applications
GEF AGENCY(IES): IADB,
OTHER EXECUTING PARTNER(S): Secretary of Agriculture (INTA) Secretary of Environment and Sustainable Development, Ministry of Science and Technology
GEF FOCAL AREA (S)[2]: Climate Change
GEF-4 STRATEGIC PROGRAM(s):CC-SP3, CC-SP4
NAME OF PARENT PROGRAM/UMBRELLA PROJECT (if applicable**):N/A**

Milestones	Expected Dates mm/dd/yyyy
Work Program (for FSP)	06/30/2010
CEO Endorsement/Approval	10/15/2010
Agency Approval Date	11/31/2010
Implementation Start	03/01/2011
Mid-term Evaluation (if planned)	
Project Closing Date	03/01/2015

A. PROJECT FRAMEWORK

Project Objective: The general objective of this project is to promote GHG emissions reduction by generation and efficient use of biogas from livestock manure, agro-industrial residual biomass and solid municipal waste. Several biogas uses will be explored such as power generation, combined heat power applications and substitute for fuel for transportation. The specific objective is to support the development of alternative energy sources such as biogas and contribute to use this form of renewable energy as a way to produce power and heat for agro-industrial processes as well as applications for fuel for transportation using biogas. The latter will contribute to achieve a low-carbon agro-industrial sector and contribute to reduce GHG emissions from the agro processing sector in Argentina by the replacement of fossil fuel as the main energy source by biogas, a from of renewable biomass energy.

Project Components	Indicate whether Investment, TA, or STA[b]	Expected Outcomes	Expected Outputs	Indicative GEF Financing[a]		Indicative Co-Financing[a]		Total ($)
				($) a	%	($) b	%	c =a + b
Component 1. Assessment of biogas production and energy use potential, and regulatory framework								**110,000**
(i) Assessment and recommendations of biogas production and energy use potentials	TA	Strengthen Institutional Capacity through: (i)Available information to prioritize and promote technologies and energy use of biogas. •	(i) Assessment of biomass technical availability, optimal geographic areas, environmental and economical feasibility and potential energy use of biogas. • Potential of biogas generation from livestock manure, agroindustrial and municipal waste • Optimal Geographic areas for biogas production • Potential of biogas usage: fuel for self-consumption, on grid power generation; combined heat power applications and other	50,000	91%	5,000	9%	55,000

[1] Project ID number will be assigned by GEFSEC.
[2] Select only those focal areas from which GEF financing is requested.

			non electric uses of energy and production of purified and compressed biogas as a substitute for natural gas for vehicles • Recommendations about feasible technologies by type of biomass					
(ii) Evaluation and adjustments to regulatory framework in order to promote investments in biogas production from biomass residues and its use as renewable energy source.	TA	(ii) Market environment for biogas from residues contributing to the growth in renewable sources of energy: •	(ii) Recommendations of regulatory framework in place: Policies and administrative requirements/procedures for: biogas production usage for fuel for self-consumption, on grid power generation; combined heat power applications and other non electric uses of energy and production of purified and compressed biogas as a substitute for natural gas for vehicles • Criteria and guidelines for energy use of biogas from livestock manure, agroindustrial and municipal waste •	25,000	45%	30,000	55%	55,000
Component 2. Demonstrative projects and Biogas generation and usage								**2,800,000**
(i) Design and capacity building of AD prototypes and landfill assessment	TA	Capacity to design and construct AD prototypes.	(i)Design of anaerobic digesters(AD) prototypes (i)Operational guidelines for AD prototypes and landfill gas recovery: • Operational Manuals and Maintenance Handbooks prepared • Monitoring and evaluation scheme developed • Assessment of possible landfills that could be used for effective landfill gas recovery and usage for other purposes instead of flaring.	50,000	42%	70,000	58%	120,000
(ii)Implementation	INV	(ii) 2900	(ii)Construction and	680,000	69%	300,000	31%	980,000

of Demonstrative projects and Biogas generation and usage		tonsCO_{2eq} /year avoided GHG emissions • 1700 MWh/year for electricity generation • 1800 MWh/year of heat production for combined heat power applications	implementation of at least two (2)biodigesters prototypes for biogas generation Construction / Implementation AD prototypes for biogas generation from: • Livestocks manure • Agro-Industrial waste • Effective recovery of landfill gas Purchase and implementation of equipment for : • Biogas or Self consumption, • on grid power generation; combined heat power applications and other non electric uses of energy • and production of purified and compressed biogas as a substitute for natural gas for vehicles			(Private Sector counterpart resources)		
(iii) Up-Scaling of demonstration projects mentioned in (ii)	INV	(iii) Replication of at least one prototype at a larger scale • 5600 tCO_2 /year of avoided GHG emissions • 2300 MWh/year for electricity generation • 3400 MWh/year of heat for combined heat power applications	(iii) At least 1 large scale AD project designed	1,000,000	59%	700,000 (Private Sector counterpart resources)	41%	1,700,000
Component 3. Design and Implementation of Financing mechanism to promote the up-scaling of biogas projects								**21,090,000**
(i) Design of Financing instrument to facilitate long term sustainability of the project	TA	(i) Financial instrument facilitates long term sustainability of biogas projects and creation of new alternative energy market for the agro	• Financial Barriers identified • Financing opportunities from private sector investors identified • Elegibility criteria for financing and credit conditions established • Technical,	75,000	83%	15,000	17%	90,000

		industrial and solid waste sector	economical and environmental evaluation procedures developed and implemented.					
(ii) Pilot Implementation of Financing instrument designed in (i)	INV	(ii) At least 2 new investments in biogas plants after 4 years of operation of the instrument in place	(ii) At least 2 large scale projects eligible for financing, using the established financial instrument developed in this project	1,000,000	5%	20,000,000	95%	21,000,000
8. Project management				**29,000**	**27%**	**80,000**	**73%**	**109,000**
Total project costs				**2,909,000**	**12%**	**21,200,000**	**88%**	**24,109,000**

[a] List the $ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.
[b] TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, **($)**

Sources of Co-financing	Type of Co-financing	Project (S)
Project Government Contribution	In-kind	80,000
IDB Loan to MINCYT[3]	Loan	20,000,000
GEF Agency (IDB Technical Assistance)	Cash	120,000
Private Sector	Cash/In-kind	1,000,000
Total Co-financing		**21,200,000**

C. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT ($)

	Previous Project Preparation Amount (a)	Project (b)	Total c = a + b	Agency Fee
GEF financing	0	2,909,000	2,909,000	290,900
Co-financing	0	21,200,000	21,200,000	
Total		24,109,000	24,109,000	24,399,900

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)[1]

NOT APPLICABLE

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

[3] IDB Loan to Ministry of Science and Technology (MINCYT). Within this loan, bioenergy, and in particular biogas projects are eligible.

The Republic of Argentina faces high dependency on fossil fuels in its energy matrix (including transport and electricity generation), of which 90% is oil and natural gas. Due to this dependency, power generation accounts for 47% of GHG emissions according to the Country's Emission Inventory, prepared Fundación Bariloche. The agriculture and livestock activities contribute directly to 44% of total GHG emissions, municipal solid waste account for 5% of total emissions, and the remaining 4% corresponds to emissions from industrial processes. Little by little Argentina's livestock production has increased the use of feedlots for cattle. This practice opens an important opportunity for the use of animal waste for biogas production.
On the other hand, waste from agriculture and agro-industrial sector, as well as municipal waste, is an issue that requires attention and prompt action to achieve sustainable mechanisms for reuse, recycle and reduce waste as well as its final disposal. Currently, the energy utilization from the waste, from the sectors mentioned above, is virtually inexistent, therefore this project provides an efficient tool to contribute to minimize both impacts (GHG emissions from agro industrial processes and solid waste treatment).

Taking into account successful experiences that have been developed in Mexico, Brazil and Chile on this subject, it is expected to advance in the development of local capacity, for the treatment of agricultural and agro-industrial residues. This project primarily intends to reduce GHG emissions from waste by achieving an optimal use and recovery of biogas (approximately 50% methane (CH4) and 50% carbon dioxide (CO2)). The Government of Argentina (GoA), through the Secretary of Environment and Sustainable Development and the Secretary of Agriculture (INTA) as the above mentioned countries, want to explore alternatives to make a more efficient use of biogas from waste for different purposes: power generation, combined heat power[4] (CHP) as well as purified and compressed biogas as a substitute for natural gas for transportation. In this way the optimal use of biogas will incorporate local technological developments linked to effective biogas generation, power generation, combined heat power applications and fuel for transportation.

Through the development of biogas production from livestock manure, agro-industrial and municipal waste, aiming to enhance a sustainable closed-loop production system, providing an optimal use of its residues that will contribute with GHG emissions reductions. Biogas could be used for: (i) as fuel for self-consumption in the selected sectors; (ii) power generation and sell power to connection to public electricity grid; (iii) combined heat power applications and other non electric uses of energy and (iv) production of purified and compressed biogas as a substitute for natural gas for vehicles. The objective will be reached by the implementation of GEF funded demonstrative and replicable experiences designed to support the structuring of a biogas market as a substitute of fossil fuels and as a source for electricity generation in Argentina. Additionally, the project includes the design and pilot implementation of a financing instrument that would facilitate the replication of the demonstrative experiences and long-term sustainability of the project.

Project

Component 1. Assessment of biogas potentials and regulatory framework diagnosis.

(i) In order to establish the biogas potential mainly in the province of Buenos Aires, Argentina and its impact on GHG reductions, the following activities would be carried out:

a) Determine different types of biomass available for biogas production, as well as the estimated biogas production capacity and effective usage by each type of biomass in the different sectors (livestock manure, agroindustry, municipal waste, etc.).
b) Based on the estimated amount of biomass, determine the biogas potential . This value corresponds to the amount of biogas that can be generated from the previously established types of biomass, in particular solid waste and livestock manure, without considering restrictions associated with the feasibility of harvesting manure due to the geographical dispersion.
c) Application of technical restrictions on the availability of biomass, mainly related to geographic area availability, which will determine the potential feasibility of biogas.
d) Establish technical aspects for the usage of biogas in power generation, such as biogas composition,

[4] Combined heat power combines power generation and its residual heat generation that could be used as a source for heating and cooling applications among others.

generation efficiency, thermal yields and exhaust gases and particles (environmental impact). Determine the effective energy available for electricity, CHP and thermal energy applications, along with the economic and environmental evaluation as well as an estimation of generation costs and investments.

(ii) This subcomponent will determine the potential uses for biogas and assess the barriers for and effective implementation of large scale project, based on the potential of biogas availability established in subcomponent (i). The assessment will include potential biogas usage for:

a) Power generation for self generation and sales of power to the grid
b) CHP and other non-electric forms of energy usage from biogas
c) Purified and compressed biogas as a substitute for natural gas for transportation

(iii) Based on the results obtained in (i) and (ii) , this subcomponent will finance the following activities:
a) Assessment of the current legal, institutional, regulatory, pricing and technological barriers that limits the introduction of biogas technologies in Argentina, mainly in the Buenos Aires province.
b) Energy policy and regulatory framework required for an effective implementation.
c) Current policy and regulatory framework evaluation and adjustments will be made to develop market mechanisms and encourage investment in this area.
d) Possible tributary and financial incentives required to encourage investments in, for power generation, CHP applications and fuel for transportation.

Component 2. Demonstration projects for biogas generation and uses.
This component will fund demonstration projects for biogas generation as well as uses. For biogas generation the project will:

(i) Design and develop capacity building to biogas developers and users, for the implementation of anaerobic digesters (AD) to process agro industrial waste, mainly livestock manure for biogas production. Technical skills and training requirements will be assessed in order to provide the adequate training and capacity building to operate ADs. There will be a strong emphasis on developing local capacities in order to achieve the enhancement of the production chain for biogas generation and usage. With respect to municipal waste, this subcomponent will assess the possible landfills that could be used for effective landfill gas recovery and usage for other purposes instead of flaring. These landfills will have to be geographically close to each other, and also near the possible end users of the biogas recovered and transformed into other forms of energy, for CHP purposes or as fuel for transportation.

(ii) Implementation of demonstrative projects and biogas generation and usage. In order to fully implement a large scale biogas project, it is important to first implement small scale pilot projects, to reduce operational and maintenance risks and promote public awareness of the bioenergy benefits, so that once the technology is fully operative, the pilot project can be scaled up to large industrial size. The activities financed under this subcomponent are: (a) Biogas production: Once identified the potential of biogas, as well as the different geographical areas and sectors, small, medium and large scale AD prototypes will be constructed, according to the characteristics of each biomass. Private sector counterpart in-kind and cash resources are expected for the construction of these ADs. The project will support the construction of small, medium and large-sized ADs to process livestock manure. In the full document, the number and size of the ADs will be specified, as well as their location. (b) For biogas usage: three alternatives will be explored and implemented as pilot projects: (b.1) Biogas for power generation: Biogas from manure processing applications will be used to generate power for self usage (at an agro industrial facility) and to sell excess power to the grid. This subcomponent will co-finance the purchase of at least two biogas electricity generators, grid connection, supervision and monitoring of on-grid biogas generation system; (b.2) Biogas for CHP applications: As any other fuel used for power generation, biogas has the possibility to not only be used for power generation, but also to provide heat, in the form of vapor lines, heating systems or else cooling systems, for example in slaughter houses or any kind of animal agro processing industry. CHP, or the effective use of residual heat as a consequence of power generation or direct heat (direct combustion of biogas) can substitute other sources of fuels, mainly diesel and wood, providing financial savings and at the same time reducing carbon emissions. This subcomponent will finance at least two CHP or other non-electric pilot project that would use heat from biogas; (b.3) Biogas as sources of fuel for transport: Biogas can be

purified to higher concentrations of methane (70% approximately). These levels can be similar to those of natural gas used as fuel for transportation. This subcomponent will analyze the possibility of using purified biogas as a source of fuel. The project will assess the requirements and viability for biogas purification as well as execute test trails for vehicles using biogas. The selected vehicles will be related to the agro industrial and or the organic solid waste demonstration projects, and would contribute to close even further the loop of sustainable production and reduction of carbon emissions. This subcomponent will finance at least two biogas purifiers and compressors, which would generate a fuel similar to natural gas, commonly used in natural gas fuelled vehicles (usually light duty vehicles using natural gas) . The full document will provide further details of this subcomponent.

(iii) Up-Scaling of demonstration projects mentioned in subcomponent (ii):

The objective of up-scaling the demonstrative projects is to attract agro industrial waste management investors, by showing the technical financial and operational feasibility of larger scale technology which would be more similar to an industrial scale. This sub-component will reduce the uncertainty to invest, as well as the technical and operational capability of the equipment. This subcomponent will leverage funding from the private sector to scale up the pilot projects funded in (ii) a and b. The bulk of the resources will be used to fund at least one large AD system, including CHP applications.

Component 3. Financial Mechanism Design

This component will carry out the following activities: (i) analyze the financial barriers faced by the capture and biogas usage projects; (ii) delineate the characteristics that must be met by the financial instruments that would be necessary to mobilize in order to overcome the access barriers to the financing of such as projects; (iii) design, structure and implement the financial mechanism, such as partial guarantee credit line or participative loans, among others, with greatest potential to reduce the barriers faced by these projects. The Commercial Banks are expected to have an active participation design and implementation process of this financial instrument, as these institutions will have to provide the long term sustainable financing in the conditions required by these projects. This will allow the financial institutions to gradually become familiar with the inherent conditions and risks associated to the promotion of such projects, reducing the aversion that generally show these entities to finance these kinds of innovative projects.

In addition to that, the IDB has approved a loan for the Ministry of Science and Technology of Argentina (MINCYT) that includes a component of US$ 20 million to promote sustainable energy applications. Bioenergy projects, such as the ones described in this project, will be eligible for financing with the IDB Loan. The financial mechanism expected to be designed and implemented through this component will work in a complemented and coordinated manner with this loan to foster and encourage the promotion and development of the capture and biogas usage projects. Therefore, this source of funding is included as additional counterpart resources that could be used to replicate the experiences developed in component 2.

The IDB Loan to MINCYT is actually the first phase of a US$ 150 Million line of credit to the Government of Argentina, in particular MINCYT. Sustainable energy, including bioenergy projects, could be eligible for other IDB project within this line of credit. Therefore the sustainability of the project is satisfactorily guaranteed.

Expected global environmental benefits: the global environmental benefits of this project will be 19700 tons of direct CO2eq emissions avoided through the development of biogas production from the residues of livestock, agro-industrial and municipal sectors, aiming to enhance a sustainable closed-loop production system, and providing an optimal use of its residues. At least 0.523 MtCO2 equivalent of indirect emission reductions are also expected.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:

The Project is aligned with INTA's National Program of Bioenergy that has a vast experience in the subject, and

research support of Universities like *Universidad del Litoral* and *Universidad del Centro de la Provincia de Buenos Aires*, the Secretariat of Agriculture and at international level, the Methane to Markets Initiative, in which Argentina coordinates the Commission of Agriculture. On the same path, the Government of Argentina has started up several measures to resolve his fossil fuel dependency, among them: The "Total Energy Program" (Resolution MINPLAN Nº 459/2007 of the 12 of July of 2007) by means of which stimulates the substitution of the natural gas consumption and/or electrical energy of network by alternative fuels, for the different productive activities or the electrical self-generation. Additionally, the Law 26,190: Regime of National Promotion for the use of renewable sources of energy destined to the production of electricity (promulgated December of 2006) establishes as a main objective to obtain a contribution of the eight percent (8%) of renewable energy sources in the national electrical power consumption, with a term of ten (10) years from its promulgation. The project of biogas from solid residues fits in the development of these measures and contributes to the commitment of Argentina with the Kyoto protocol to decrease or to at least maintain its level of GHG emissions.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:

The proposed Project with its GEF financing is consistent with GEF Strategic Objectives for mitigation of the Climate Change (CC). The proposed project supports combined heat power, self generation and biogas for transportation with biogas from livestock waste using anaerobic digestion technology, as well as landfill gas from municipal waste. In all the forms of utilization of biogas mentioned before, there is reduction of GHG emissions. As such, the Project is supporting the Government of Argentina (GoA) to transform its rural development and solid waste industry onto a lower carbon path. The development of anaerobic digesters, efficient use of biogas for heating and/or cooling, as well as fuel for transportation, as a basis for biomass energy development, will significantly reduce GHG generation.

In line with Strategic Program 3: ***Promoting Market Approaches for Renewable Energy***, GEF financing will promote the supply of on grid renewable electricity, using biogas. With this project, rural agroindustrial facilities, breeding livestock, will be able to sell power to the grid. The project will support facilities within the province of Buenos Aires., however the IDB loan for the promotion of sustainable projects, bioenergy included, will provide the possibility to expand the methodology to other provinces of Argentina.

In line with Strategic Program 4: ***Promoting Sustainable Energy Production from Biomass***, GEF financing will promote the use of biomass (mainly animal manure and organic solid waste) as a sources of renewable energy, for electricity generation, CHP applications and fuel for transportation, hence substituting others forms of fuel, such as diesel, natural gas, among others. The use of biomass will not contribute to deforestation, reduced soil fertility, or increased GHG emissions, on the contrary, the project will promote an optimal use organic waste, which can lead to additional sources of energy, production of natural fertilizers and reduce carbon emissions.

As described in the Climate Change Focal Area Strategy, effective use of biogas, and its potential for power, CHP and transportation is a long-term process. The proposed project will contribute positively to begin this process, and the IDB loan to promote sustainable energy, will further facilitate the continuation of this process. Additional activities, notably follow-up investments, will be required to complete the process. This project will enable the GoA to further establish an appropriate and effective policy and regulatory framework that will contribute to optimal use of biogas as well as climate change mitigation.

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES:

Currently, the possibility of selling power directly to the grid by agro-industrial facilities is not a common practice, therefore, by using GEF funding, in cooperation with the support of the GoA, local agro-industrial entrepreneurs and the IDB, the project will pilot demonstrate the possibility of independent power producers (IPPs) to sell power to the grid, obtained from biogas. In spite of the huge potential for biogas generation, Argentina has not yet fully harnessed its potential and turned it into a mainstream activity. The advantage of the GEF resources are that these funds can be used to show the feasibility of sustainable renewable energy technologies that are not commonly used due to several reasons, such as lack of funding, lack of interest (because it is easier to use proven fuels, i.e. diesel), regulatory barriers, etc.

GEF funding provides an excellent opportunity to carry out demonstration projects as the ones mentioned before, that otherwise would be hard to finance, and reducing substantially the possibility of testing new sustainable energy technologies in developing countries. Furthermore, the project would finance the studies and evaluations necessary to establish a sustainable financial mechanism that would allow for leveraging further investments in biogas renewable energy by the private sector in the country.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

The Energy Division of the IDB through the Sustainable Energy and Climate Change Initiatives (SECCI) has promoted several projects throughout Latin American and the Caribbean (LAC) in sustainable energy, mainly renewable energy, bioenergy and energy efficiency. In Argentina, the IDB, through SECCI and other IDB trust funds is funding technical assistance for solar and wind energy applications. The IDB Energy Division, through SECCI, will also contribute with at least US$ 120,000, to provide technical assistance to address the barriers related to lack of policy and regulation for biogas applications and on-grid bioenergy power generation.

The GoA, through the Secretary of Environment and Sustainable Development and the Secretary of Agriculture, are pursuing the use of renewable energy mainly from biomass and particularly biogas at a larger scale.

The IDB has a strong ongoing energy pipeline as well as projects in execution in Argentina, including renewable energy projects, for over US$ 580 million.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

GEF involvement will provide the necessary support to demonstrate the viability of using biogas generated electricity for self production and selling excess power to the grid. The demonstration effect will be significant in helping to remove identified barriers currently preventing local Governments, agro-businesses and local power companies from implementing these new and promising approaches.

The focus of the proposed GEF support will be estimating the potential and technical, environmental and finance feasibility of biogas production either from agro-industrial, cattle industry and municipal waste management. GEF support also will provide assistance to address the technical barriers to further biogas development through generation of policy recommendations at national level, promoting on-grid biomass energy connections, establishment of standard technical guidelines, and capacity building for improved technical skills. Without GEF financing, the supply of power to the grid from new biogas operations will be limited as companies have insufficient incentives and guidance on initiating the process. GEF financing will also multiply the power generation from biomass by the identified geographic areas and sectors through enhanced collection of manure and waste from small and medium farms and agro-enterprises that would otherwise not be used for renewable energy.

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MITIGATION MEASURES THAT WILL BE TAKEN:

Lack of incentives for agro-industrial and livestock farmers to actively pursue the use of animal for biogas production and improve on-farm emission reductions: Mitigation is built along the components of the project: in Component 1 provide technical assistance to assess the implementable potential and to develop favorable conditions for biogas market. In component 2, developing and scaling up of demonstrative projects, will also contribute to minimize the technical and financial uncertainty. To ensure financial sustainability the project is linked to the IDB loan and includes, in component 3, to design and pilot a financial instrument to promote biogas generation and usage. The design of the financial instrument will include a thorough analysis of the financial barriers to overcome in order to have a successful implementation of the instrument.

Technical and Administrative Barriers for Grid Connection. Argentina has not have experience of on-grid biogas production. GEF support also will provide assistance to address the technical barriers to encourage further biogas development through generation of policy recommendations at national level, promoting on-grid biomass energy connections, establishment of standard technical guidelines, and capacity building for improved technical skills.

Component 1 will assess the policy and regulatory requirements to promote biogas usage as well as the possibility of selling excess power to grid.

Coordination between government institutions. To mitigate this possible risk a project manager (PM) and a Project Execution Unit (PEU) will be established. Inter governmental coordination will be part of the PM and PEU's duties, during the execution of the project.

H. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

The specific GEF funding to overcome the barriers for establishing grid connections as well as the lack of policy and regulation for biogas applications will contribute to jump start a national biogas program. The IDB loan to promote sustainable energy and the participation of the private sector, mainly agro industrial entities, will ensure overall cost-effectiveness of the Project. The project is considered to be a cost-effective intervention for the GEF due to the CO2 emission reduction potential due to avoided decomposition of manure, which emits biogas, electricity generation and heat production for combined heat power applications. The implementation of the proposed GEF project will result in an estimated direct GHG emissions reductions totaling 19,700 tons of CO2 equivalent. This value was obtained from the biogas generation using an assumption of feedlots approximately 6000 cows. The calculation assumed heat and electricity generation, from anaerobic digestion. The excess power sold to the grid used Argentina's CO2 grid emission factor. Using the GEF top-down methodology, indirect emission reductions for the project are 0.523 MtCO2 equivalent. Due the replication possibilities with the IDB line of credit to the GoA, carbon emission reductions as eventually more project could be prepared could very well increase. The full size document will further elaborate on this aspect. More importantly, the project is expected to result in an increase in electricity generation, heat production (therefore substitution of diesel) and avoided GHG emissions from manure decomposition. Using the indirect top down approach, which appear more realistic in terms of emissions reduction, the cost effectiveness of this project is **5.5 US$/tCO2.**According to a review of GEF projects by the World Bank ongoing projects have an average of US$ 4/tCO2e of cost-effectiveness, and US$ 6/tCO2e for projects under preparation. This means that this project is cost-effective as it is below the expected range of costs to similar GEF projects.

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

Through the Energy Division and its SECCI Initiative, the IDB is looking to promote renewable energy and energy efficiency, biofuel development, carbon finance, and adaptation to climate change. As described in part II E above the Bank SECCI initiative involvement provides important benefits to the proposed project.

The proposed Project includes primarily capital investments complemented by technical assistance, which fits closely within the areas of IDB's comparative advantage. Providing financial support for promotion of sustainable energy and climate change mitigation are key areas in IDB's Strategy in LAC. Only in Argentina, the IDB has a strong ongoing energy pipeline as well as projects in execution, including renewable energy projects, for over US$ 580 million, including large wind farms, solar applications, and available research funding for renewable energy With this background the IDB is best partner that the GoA can choose to support the development of sustainable energy program to promote biogas generation and its optimal usage.

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PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):
(Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

NAME	POSITION	MINISTRY	DATE *(Month, day, year)*
Ms. Graciela Conesa	General Coordinator of Programa Social de Bosques- PROSOBO- and GEF focal person in	Secretary of Environment and Sustainable Development	October 1st, 2009

	Argentina		

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
Mr. Ricardo Quiroga IDB-GEF Coordinator Inter-American Development Bank			Mr. Christiaan Gischler Energy Specialist IDB´s Energy Division	(202) 623 3411	christiaang@iadb.org