PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
THE GEF TRUST FUND

Submision Date: 08/27/09

Re-Submission Date: 1/28/2010

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID[1]: **PROJECT DURATION:50**months
GEF AGENCY PROJECT ID: 4093
COUNTRY(IES): Tunisia
PROJECT TITLE: Energy Efficiency Investment Scale-Up
GEF AGENCY(IES): World Bank, (select), (select)
OTHER EXECUTING PARTNER(S):
GEF FOCAL AREA (S)[2]: Climate Change
GEF-4 STRATEGIC PROGRAM(s): (see preparation guidelines section on exactly what to write)
NAME OF PARENT PROGRAM/UMBRELLA PROJECT (if applicable**):**

INDICATIVE CALENDAR*	
Milestones	**Expected Dates mm/dd/yyyy**
Work Program (for FSP)	03/01/2010
CEO Endorsement/Approval	07/01/2010
Agency Approval Date	09/01/2010
Implementation Start	12/01/2010
Mid-term Evaluation (if planned)	02/01/2013
Project Closing Date	02/01/2015

* See guidelines for definition of milestones.

A. PROJECT FRAMEWORK

Project Objective: To improve the energy efficiency by providing technical assistance for scaling-up cogeneration investments, and to seek to tap the vast biomass potential including through financing/co-financing of the first pilot projects.

Project Components	Indicate whether Investment, TA, or STA[b]	Expected Outcomes	Expected Outputs	Indicative GEF Financing[a]		Indicative Co-Financing[a]		Total ($) c =a + b
				($) a	%	($) b	%	
1. Specialized EE loan facility	Investment	Increased EE/cogen investments	EE/cogen implemented through projects, energy savings achieved, reduction in GHG emissions	0	0	110,000,000	100	110,000,000
2. FI technical capacity building, industrial sector financial capacity building, market outreach	TA	Development of new business models for EE/cogen investments, pipeline development	Strong pipeline of over 70 EE/cogen projects	1,410,000	100	0	0	1,410,000
3. Biomass feasibility studies and pilot projects	Investment	Demonstration of feasibility of using biomass for	4-5 pilot projects implemented successfully	500,000	5	9,500,000	95	10,000,000

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

		generation/co-generation						
4. Institutional and capacity building for biomass development	TA	Removal of institutional, regulatory and economic barriers to biomass	Increased use of biomass	300,000	75	100,000	25	400,000
5. Project management				200,000	10	1,800,000	90	2,000,000
Total project costs				A2,410,000		B121,400.000		123,810,000

[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
Project Government Contribution	In-kind /EE grants	33,400,000
GEF Agency(ies)	Hard Loan	55,000,000
Bilateral Aid Agency(ies)	(select)	
Multilateral Agency(ies)	(select)	
Private Sector	(select)/equity/debt	33,000,000
NGO	(select)	
Others	(select)	
Total Co-financing		B121,400,000

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

	Previous Project Preparation Amount (a)[3]	Project (b)	Total c = a + b	Agency Fee
GEF financing		A2,410,000	2,410,000	241,000
Co-financing		B121,400,000	121,400,000	
Total		123,810,000	123,810,000	241,000

--

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

GEF Agency	Focal Area	Country Name/ Global	(in $)		
			Project (a)	Agency Fee (b)[2]	Total c=a+b
World Bank	Climate Change	Tunisia	2,410,000	241,000	2,651,000
(select)	(select)				

[1] No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.
[2] Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

PART II: PROJECT JUSTIFICATION

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

Tunisia has been a pioneer among developing countries in terms of energy management policy, having formulated and implemented a policy for rational use of energy and promotion of renewable energy (RE) as early as 1985. The energy intensity stopped increasing in the 1990s and has since then declined to the lowest level in the MENA region. However, the intensity remains high compared to some other Mediterranean countries such as Greece and Portugal. Moreover, energy expenditures —energy consumption valued at international energy prices— accounted for 12% of

[3] Include project preparation funds that were previously approved but exclude PPGs that are awaiting for approval.

GDP in 2006, which is a high level compared to industrialized countries (they amount to 4% of GDP in Japan and 7% in Greece).

The energy efficiency efforts of the Government of Tunisia (GoT) have also benefited from GEF support over the years particularly as related to market Transformation and Labeling of Refrigerators (UNDP), Experimental Validation of Building Codes and Removal of Barriers to Their Adoption (UNDP) and Development of an Energy Efficiency Program for the Industrial Sector for Tunisia (World Bank).

The previous World Bank GEF project "Development of an Energy Efficiency Program in the Industrial sector" (PEEI) was the first project designed to address barriers to increased financing for energy efficiency in Tunisia. This project tried to address the issue through a package of three instruments: (a) a 10% investment grant program for energy efficiency (EE) projects; (b) a partial guarantee fund; and (3) TA primarily focused on ESCO development. The investment grant component has progressed well with over 100 projects approved for receiving this benefit as of September 2009. To date, only 13% of the approved projects have been fully implemented and have fully received the grant, 24% of projects have reached 50% completion and have received part of the grant. 63% of projects, which have not reached 50% completion, did not get any grant payment yet, but such payment should occur during the next few months. An action plan was prepared during summer 2009 to speed up disbursement, and a one year extension of the grant closing was requested by the Government of Tunisia, which was approved by the Bank on September 9. It is expected that most of the remaining projects in the pipeline will be able to achieve financial closure before the end of 2009 and to reach technical completion during 2010, leading to the full disbursement of the grant component during 2010.

The industry capacity building activities have been successful and have generated a steady pipeline of good EE projects, including the projects that have already been approved for receiving the GEF investment grant, as well as a sizeable amount of new projects. However, fully achieving the country's EE/RE objectives requires the removal of persisting investment barriers and access to new sources of financing. Besides lack of appropriate price signals (energy price subsidies), the barriers to the smooth market development of EE and RE are as follows:

- Regulations regarding cogeneration and the development of wind energy under IPP or self-generation arrangements are still inadequate. The FNME has limited resources and its range of applications is too narrow;
- Many industries are still unaware of the benefits of energy efficiency for competitiveness, and their focus remains on purely productive investment and quality development. In addition, many small enterprises are unfamiliar with basic banking practices, and don't know how to prepare acceptable business plans and credit applications suitable to banks;
- EE investment is often not attractive enough to commercial banks because of small deal sizes, high transaction costs, priority given to productive investment, lack of experience with EE, difficulty in structuring arrangements for preparation, financing and implementation of EE projects, etc. In addition, the level of awareness and the capacity to develop an EE portfolio remains too low in the financial institutions (FIs).

The present project, including the recently approved World Bank line of credit (see below), will scale up the previous work in industry, and will seek to address areas not sufficiently covered by the previous activity —including biomass—, drawing lessons from previous experience. The lessons from the GEF project are that:

- Developing the necessary institutions, regulations, information, education and other prerequisites to scaling up EE investment is a lengthy and time consuming process in Tunisia,
- TA is essential for training and capacity building in areas such as project identification and preparation, including preparation of bankable business plans, as well as training in EE appraisal and financing for FIs;
- Policy, regulations and awareness raising activities are necessary, especially when energy prices do not provide the correct signal.

In order to address the barriers to scaling-up EE/cogeneration investments, this project proposes a technical assistance program mainly targeted at enhancing EE/cogeneration related technical skills in the financial community, and financial and project implementation skills in the industrial community seeking EE/cogeneration financing, to complement the new line of credit which has been set-up with a $55 million loan from the World Bank to three

commercial banks (this project was approved by the Board of the World Bank on June 30, 2009 and was signed by the Republic of Tunisia on July 8; it will start disbursing in early 2010).

In addition, this project will seek to tap the vast biomass potential through specifically designed technical assistance and capacity building, feasibility studies to prepare the development of pilot projects, and financing/co-financing of the first pilot projects. Those pilot projects would mostly be implemented in the poultry droppings sector, which has the highest potential in Tunisia and currently generates significant pollution, within individual farms and production units (they would preferably include cogeneration: this will be assessed during project preparation, based on potential offtake for heat or steam production). They would pave the way for development of 2 industrial size facilities, which would be located in the Sfax and Tunis areas, and would treat approximately half of all humid droppings generated in the country. Besides reducing pollution and odours, processing poultry droppings would significantly reduce GHG emissions: CH4 and N2O that would be generated from aerobic storage of droppings will be captured and, instead of being flared, will be converted into electricity (and possibly heat/steam); capture of CH4/N2O will account for approximately 85% of GHG emissions reduction, and power generation/cogeneration from this renewable resource for an additional 15%.

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

The 11th Development Plan (2007-11) sets the broad directions of energy policy, including gradual reduction in energy subsidies, and calls for a scaling-up of investment in energy efficiency and renewable energy. Given the urgency to intensify energy conservation efforts, the Government has formulated a 4 year Energy Conservation Program (4ECP) for the period 2008-11, which was adopted by the Council of Ministers on January 15, 2008, and presented to the public in a National Conference on Energy Management (NCEM) on February 12, 2008. The objective is to reduce the energy intensity of the Tunisian economy by 3% p.a. over the period and to increase the contribution of renewables to 4% of primary energy demand.

The 4ECP proposes to strengthen further the institutional and legal framework which is already well established. Tunisia has had an energy efficiency agency since 1985, Agence Nationale pour la Maîtrise de l'Energie (ANME). Its missions include implementation of the energy management policy, supporting Research, Development & Demonstration activities, communication, information and training, as well as managing the process of allocating the investment subsidies. An energy efficiency fund (FNME) was created in 2005 to provide investment subsidies for energy efficiency and renewable projects, and is managed by ANME. A legal framework was established for the operation of Energy Service Companies (ESCOs) in 2004, and ESCOs have since then flourished, with seven now in operation in Tunisia.

The 4ECP calls for regulation to encourage cogeneration and self-generation from renewables, by giving third party access to the Société Tunisienne de l'Electricité et du Gaz (STEG) transmission network and setting the rules for buy-back of excess production by STEG. To that purpose, a new law was enacted on 9 February 2009; the law also broadens the audit requirements for industrial facilities, set norms and standards for existing and new buildings, and makes mandatory the formulation of urban transport plans. A decree issued on the same day stipulates the new rules and procedures for eligibility to the FNME investment subsidy.

A vast potential for energy from biomass has been identified and remains largely untapped, in particular linked to the wastes of poultry breeding, but also of bovine breeding and olive oil production. There are about 5,000 poultry breeders in Tunisia, for meat and egg production. This growing sector is currently using 250 GWh of electricity per year, 2% of national demand. It is producing 600,000 tons of droppings per year, of which 400,000 are humid and especially difficult to dispose of (solid droppings can be used as compost and fertilizer). Poultry droppings can be converted into energy through direct combustion or bio-methanation. Several plants are already in use in Western Europe and the US. Bio-methanation is the most suitable process for humid droppings. The methane can be burnt to generate electricity, while solid residues from the process can be used as fertilizer (the way solid droppings are used). Processing 100% of Tunisian humid droppings this way would generate the equivalent of 2% of the present national electricity demand, i.e. it would make the poultry sector self-sufficient regarding power needs. It would also significantly contribute to the country's efforts to reduce GHG emissions (CO2, NH4, N2O) and address global climate change.

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

The interventions under the project are targeted at the industry that falls within the Strategic Priority-2 of the GEF-4 Climate change focal area strategy.

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

Tunisia is a middle-income country which nevertheless is facing economic challenges and budget constraints, and it depends on grant funding. Beyond that, project support with GEF grant resources is justified for three reasons: (1) The grant support leverages bilateral funds; (2) It helps integrate/package the funds, including those of the Government and private sector, and generates a catalytic impetus for energy efficieny; and (3) Along with the GEF funds, international expertise will be provided, that is expected to have a catalytic impact beyond the provision of grant funds.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

A EUR 40 million line of credit for environmental and energy projects was set up in Tunisia in December 2007, together with a grant for technical assistance, by Agence Française de Développement (AFD). This line of credit is broadly focused on environmental projects. The WB $55 million line of credit is more focused on energy efficiency and cogeneration financing. The amount of the two credit lines (approximately $100 million in total) is modest compared to the financing needs of the 4ECP: TND 1.3 billion, i.e. USD 1.1 billion: this shows that there is room for the two credit lines. They actually complement each other well, and can be seen as additional, rather than competing:

- They cover slightly different project types,
- Both are run through commercial banks, but the selected institutions are different: this will give Tunisian industrial companies more choice and opportunities to finance EE projects,
- ANME will host the two project implementation units (PIUs). The two PIUs will share know-how, experience and resources (including staff that will work part time in each one of the two PIUs), hence significant economies of scale and cross-fertilization.

The new GEF grant will be a key complement to the new WB line of credit: it will contribute to better preparation and processing of credit applications, and quicker disbursement of funds. It will not overlap with the existing GEF grant (PEEI), as subprojects under this grant are already identified and their financing is under way. In addition, cogeneration is not covered by the PEEI. While the new GEF grant will be additional to the PEEI, it will build on the experience gained during its implementation, especially by contributing to spreading knowledge and experience on EE/cogeneration within the Tunisian financial community.

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

The GoT has requested the World Bank's assistance to set up the required financing mechanisms and support successful implementation of the 4ECP. The new WB project will provide the funds required to set up dedicated credit lines as listed above and described in the Project Appraisal Document (dated June 3, 2009). The 4ECP sets an action plan that will, among over things, attempt to overcome some barriers. The WB project and proposed associated GEF grant will set up financing mechanisms and technical assistance to ensure successful implementation.

The new WB project consists in lines of credit to FIs, totalling $55 million, to finance industrial energy efficiency subprojects –in addition to the subprojects already supported by the PEEI– and cogeneration subprojects – cogeneration is not covered by the PEEI. The World Bank loans will be lent, with a guarantee from the Republic of Tunisia, to three commercial banks (Amen Bank, Banque de l'Habitat, Banque de Financement des Petites et Moyennes Entreprises), which will on-lend to companies for eligible EE and cogeneration subprojects following their lending policies and procedures. Eligibility of the subprojects will be assessed by ANME according to an Operations Manual which has been developed during project preparation and later agreed. The participating commercial banks will be responsible for loan repayment and assume all financial risk.

The project concept was designed to provide an integrated technical and financial analysis of end-use subprojects to be financed by the selected FIs. To avoid lengthy and cumbersome application processes for subprojects that commercial banks would not be interested in financing, the ANME will work closely with the FIs to pre-screen subprojects for financing. This set-up will also allow the integration of FNME subsidies (FNME is managed by ANME) and other grants and loans from different sources in the financing plan of each subproject, therefore avoiding that subprojects do not reach financial close because of lack of one of the components of the financing plan. The close relationship between ANME and the FIs will facilitate a rapid and strong take off of the overall project, as a strong pipeline of new cogeneration and industrial energy efficiency subprojects has already been identified at ANME.

The potential for cogeneration in Tunisia is largely underdeveloped, as those projects were not, until February 2009, eligible for FNME subsidy. Out of a potential of approximately 250 MW in the industry, the Tunisian cogeneration Task Force identified 116.5 MW as priority: 21.5 MW have been commissioned in 2007 and 2008, additional 22 MW are expected to have been put on line by the end of 2009, and 73 MW are still in the pipeline for development during 2010-2011 (see table below). The most promising sectors are ceramics and non-metallic minerals, and the food industry.

Company	Sector	MW	Commissioning
Sotupapier	Paper	10.0	2007
SNA	Food	1.5	2007
Carthago Gres	Constr. materials	5.0	2008
Tec T'pap	Paper	5.0	2008
El Mazraa	Food	1.5	2009
GIPA	Food	1.0	2009
Stibois Grombalia	Other industries	2.5	2009
Complexe Sidi Salah	Food	3.0	2009
Complexe briqueterie BBM	Constr. materials	5.0	2009
SOMOCER	Constr. materials	4.5	2009
Randa + SMT	Food	4.5	2009
SITEX	Textile	3.5	Engineering study done
Couscousserie Du Sud	Food	3.5	Engineering study done
Briq. Mazdour	Constr. materials	1.0	Engineering study done
Tunisie Ouate	Paper	3.5	Engineering study done
ADV Huile Bir Mcherga	Food	5.0	Engineering study done
Medina	Commercial	1.0	Engineering study done
Sartex	Textile	0.5	Prefeasibility study done
La Rose Blanche	Food	4.4	Prefeasibility study done
Slama Freres	Food	1.2	Prefeasibility study done
UNPA	Food	4.5	Prefeasibility study done
Danone	Food	3.0	Prefeasibility study done
Delice	Food	1.2	Prefeasibility study done
Sotubi	Food	1.0	Prefeasibility study done
Briq. Menzel Hayet	Constr. materials	7.6	Prefeasibility study done
Briq. BCM	Constr. materials	10.0	Prefeasibility study done
Briq. Beni Khiar	Constr. materials	3.5	Prefeasibility study done
SNCPA	Paper	11.0	Prefeasibility study done
Al Kimia	Chemicals	7.6	Prefeasibility study done

The resulting annual energy savings from the whole program would be approximately 80,000 tons of oil equivalent (80 ktoe). This comes from actual data collected by ANME on projects in operation, and from calculations based on normal thermal efficiency of cogeneration equipment used in several industrial sectors: it can be as high as 85% in construction materials, and as low as 65-70% in food processing, depending on the level of heat recuperation; an average efficiency of 75% can be considered reasonable in Tunisia, given the pipeline of potential cogeneration projects. Based on these efficiencies and on Tunisia's power generation mix (over 90% natural gas), a simple calculation shows that with 75% cogeneration efficiency, savings per kW amount to approximately 700 toe/MW.yr, which translates into approximately 2,000 t of avoided CO2 emissions per MW (see table in Annex). The table below gives details about costs and savings for existing and planned projects. Investment cost data show a sharp increase between 2007-2008 and the following period: this is due to the recent cost increase for power equipment in general, and to the fact that the units commissioned in 2007 and 2008 were relatively large scale (hence relatively less expensive than smaller units on a per kW basis).

Year	MW	Energy savings (toe/yr)	Savings per MW (toe/yr)	Cost (TND m)	Cost (USD m)	Cost per kW (USD)	Savings per USD (kgoe/yr)
2007	11.5	7,100	617	7.5	5.8	506	1.22
2008	10.0	6,500	650	7.1	5.7	568	1.14
2009	22.0	15,400	700				
2010-11	73.0	52,000	712	145.4	106.9	1,125	0.63
Total	116.5	81,000	695	160.0	118.4	1,016	0.68

Source: ANME

The existing pipeline of new energy efficiency projects ("contrats-programmes") includes over 200 projects:

Sector	Number of enterprises	Investment (TND m)	Energy savings (toe/yr)	Savings per TND (kgoe/TND.yr)	Savings per USD (kgoe/yr)
Construction materials	51	37.4	48,000	1.28	1.74
Food	54	11.2	12,000	1.07	1.46
Chemicals	12	12.3	14,000	1.14	1.55
Metallurgy	23	3.5	4,000	1.14	1.55
Textile	31	6.5	8,000	1.23	1.67
Other	31	90.3	112,000	1.24	1.69
Total	202	161.0	198,000	1.23	1,67

Source: ANME

It is expected that the World Bank line of credit of $55 million will leverage significant financing from the private sector (commercial debt, equity), leading to total investment of $110 million (including FNME subsidies). About 70% of this investment is expected to go into cogeneration projects (i.e. $77 million, approximately 65 MW or 20 projects), and 30% into EE projects ($33 million, at least 50 projects). Cumulated energy savings of such cogeneration and EE projects would be close to 105,000 toe per year.

GHG emissions reduction can be assessed based on 2.84 t CO2 per ktoe saved in cogeneration (see table in Annex) and 2.28 t CO2 per ktoe saved in energy efficiency, based on past projects followed by ANME (this is in line with the emissions coefficient of natural gas, which is by far the main energy source in the power sector and industry of Tunisia):

Year	Number of contracts	Energy savings (ktoe/yr)	CO2 avoided (kt/yr)	t CO2 per toe
2005	18	25.9	71.2	2.74
2006	63	42.5	113.2	2.67
2	79	98.5	197.5	2.01

0072008	54	32.5	77.5	2.38
2009	56	23.9	49.4	2.07
Total	270	223.3	508.8	2.28

Source: ANME

Based on these data, the project would lead to reductions in GHG emissions of almost 265,000 tons of equivalent CO2:

	Number of projects	MW	Investment (M USD)	Savings per USD (kgoe/yr)	Energy savings (ktoe/yr)	GHG emissions reduction per toe (t CO2)	GHG emissions reduction (kt CO2/yr)
Energy Efficiency	50	-	33	1.67	55	2.28	125
Cogeneration	20	65	77	0.63	49	2.84	139
Total	70	65	110		104		264

Previous experience[4] points to the need for on-going technical support to address emerging barriers, provide ongoing skill enhancement, and counteract behavioural barriers. In the present case, technical assistance will be critical to complement the WB line of credit: (i) to provide support to FIs to evaluate the sub-projects proposed for financing and to develop an EE/cogeneration portfolio, and (ii) to help industrial enterprises, especially smaller companies prepare bankable business plans for their EE/cogeneration subprojects. The main areas where support will complement the lending would be: (a) technical training and capacity building of the commercial banks in the area of energy efficiency and cogeneration; (b) providing support to subproject developers to assist in the feasibility and preparatory studies, mostly on the financial/business plan side, and to assist in subproject implementation; and (c) support for targeted awareness and training efforts to support pipeline development efforts.

Technical assistance could be set up gradually, without compromising the chance of success of the WB line of credit, as a strong pipeline of projects already exist, developed in part through ANME, and ANME has significant capabilities and resources that will allow it to provide some support to FIs for a limited time in the area of sub-project evaluation. However, GEF support is being requested to complement the Bank loan for technical assistance to the financial intermediaries to develop an EE portfolio, and to subproject sponsors to prepare, evaluate and supervise the subprojects proposed for financing: GEF financed technical assistance will be key to accelerate disbursement of the loan, and help develop a sustainable market for EE/cogeneration financing in Tunisia.

In addition, the GoT has requested specific assistance to launch new activities in energy from biomass, through technical assistance, feasibility studies, and preparation, development and financing of pilot plants.

Tunisia currently generates around 600,000 tons of droppings annually. The two full size plants that would be developed based on the experience of the pilot units would treat about half of the country's droppings. Based on preliminary data, the pilot units co-financed under the project would have the following characteristics (emissions

[4] See WEC report "Energy Efficiency Policies around the World".

reductions are based on the assumption of 1 ton equivalent CO2 per ton of droppings through collection of CH4, plus an additional 15% or so through CO2 emissions avoided in power generated with the CH4):

	Total	Per unit
Capital expenditure (USD m)	10	2
Capacity (kt of droppings per year)	65	10-15
Electric capacity (kW)	1,750	350
Power generation (GWh)	10	2
GHG emissions reduction (t eq. CO2/yr)	75	15

Source: Ministry of Environment, Alcor

The pilot plants would reduce GHG emissions by about 75,000 tons of equivalent CO2 per year. The full size facilities would reduce GHG emissions by about 500,000 tons of equivalent CO2 per year: both pilot and commercial size plants would therefore bring significant global environmental benefits. The two full size plants would also produce 200,000 tons of valuable fertilizing substrate, enough to treat over 20,000 ha of land.

The main project components supported by the GEF will be as follows. They will ensure, through technical assistance and capacity building, that the World Bank's line of credit will be disbursed fully and in a timely manner. They will also help design and implement an ambitious biomass action plan. It should be noted that co-mingling of GEF funding with CDM funding is highly unlikely, as no specific CDM related assistance is planned, and most EE/cogeneration subprojects, as well as the pilot biomass projects are likely to be too small to seek carbon finance.

Capacity Building and Market Outreach (US$ 1.5 million): The main areas of support under this component would be: (a) technical training and capacity building of the commercial banks in the area of energy efficiency and cogeneration, including biomass generation/cogeneration. New banks interested in developing EE business line would benefit from start-up support for the creation, organization, staffing, and initial business plan preparation for energy-efficiency lending. This will include development of necessary internal mechanisms, procedures and knowledge base to facilitate FI familiarization with industrial sector and energy efficiency markets and businesses, appraisal of energy efficiency projects, familiarity with government policies, and project structuring and risk management; (b) providing support to subproject developers in the industrial sectors to assist them in the preparation of required financial documents (financial studies and business plans), as well as to assist them during subproject implementation; and (c) support for targeted awareness and training efforts to support pipeline development efforts, outreach activities among industries to ensure healthy project pipeline development, and among commercial banks to stimulate the market for financing energy efficiency projects as well as biomass generation/cogeneration. This component will be additional to the existing PEEI: while important new players (commercial banks) will receive valuable technical assistance, the projects financed through the new World Bank line of credit will essentially be different from the one currently benefiting from PEEI support.

Biomass Feasibility Studies and Pilot Projects (US$ 0.5 million): The main areas of support under this component would be: (a) identification of potential projects for energy production from biomass, especially chicken waste, (b) feasibility studies of the first pilot projects: sizing of the gas production, of electricity production facilities, technical studies (including cogeneration opportunities), economic and financial studies, financial structuring, etc., (c) feasibility studies for use of by-products as fertilizer: technical study, market study, economic and financial analysis and marketing strategy, and (d) participation in the financing of the first projects, possibly through payment of a subsidy beyond the FNME subsidy.

Institutional and Capacity Building for Biomass Development (US$ 0.3 million): This component will support the preparation and implementation of a biomass strategic action plan, in relation with the feasibility studies and pilot project identification. It will cover: (a) studies to overcome institutional, regulatory and organizational barriers, including the formulation of legal measures and incentives, (b) capacity building, and (c) awareness raising and training. Some of the identified barriers will apply for other renewable energies, so part of the recommendations and proposed measures are likely to apply beyond the strict field of biomass. However, biomass has very specific aspects, which do not apply to other forms of renewable energy, especially regarding collection of raw material, which is generally critical for sustainability of biomass projects.

In addition to the above components, GEF funds would also be utilized for supporting project management to the extent of less than 10% of the total costs.

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:

The overall risk of the project is moderate after mitigation. The potential for energy efficiency has been assessed by ANME: (i) all large industrial consumers have undertaken audits, identified EE programs and committed to their implementation in "contrats-programmes" signed with ANME; (ii) the 4ECP includes ambitious targets for EE/RE investment, and (iii) all players have the required technical capabilities to implement the subprojects under consideration.

At this stage, the following risks have been identified:

- Weak commitment to EE investments if energy prices start declining. Lower end-use prices could result from lower oil prices on international markets, which is unlikely to happen in the short term, or from sustained and even possibly increased price subsidies to shield consumers from high international prices. GoT is committed to implement price reform which would result in cost reflective pricing. In addition, sensitivity analyses made during preparation of the World Bank line of credit indicate that the profitability of potential subprojects is not substantially affected by lower levels of energy prices (it remains high in all cases, with short payback periods –typically below three years–, even with substantial changes in energy prices –typically ±50%);
- Slow development of the EE portfolios by the financial intermediaries (FI), leading to slow disbursement of the loans. This issue has been given particular attention during project preparation and FIs are being asked to identify a portfolio of EE subprojects for at least one third of the loan amount intended for that component. Identifying sizeable projects for direct lending with potential for replication will also address the slow disbursement risk at an early stage and provide a solid basis for the FIs to develop their portfolios;
- Low quality of the EE portfolio, not so much in terms of engineering and technology, but of finance and bankability (business plan, risk/profitability analysis, etc.). The risk is significant because of (i) the unfamiliarity of the FIs with energy efficiency technologies and the difficulty for them to monitor EE/RE subprojects, and (ii) the lack of understanding of basic bank financing requirements of many small and medium enterprises, and the subsequently ill-prepared business plans. To address this risk, the Bank has worked with ANME and the FIs to develop strict project eligibility criteria, and an Operations Manual for their appraisal and monitoring during risk assessment and implementation. Training and capacity building will also be provided to participating FIs to ensure that the subprojects, while technically sound, are also economically justified and financially viable;
- Reputational risk. This is negligible since the projects will have beneficial environmental and social effects. There will be no land acquisition nor displacement of populations since all investment is on the existing sites. Environmental assessments might be required for some subprojects if Policy OP4.01 is triggered during project implementation. An environmental Safeguard Framework has been developed and incorporated in the Operations Manuals which include screening procedures to establish what safeguards are triggered and the actions to be taken to comply with Tunisian environmental requirements and World Bank safeguard policies.

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

GEF financed capacity building and technical assistance related to energy efficiency projects will be especially critical, and therefore cost-effective in the current economic situation, where many industries in Tunisia, especially exporting sectors, are hit by the global crisis and tend to revise investment plans, in a context where energy prices, while still high, have decreased from their recent peak: there is a real risk for the World Bank's line of credit not to be disbursed in a proper and timely manner.

Estimates based on ANME's experience and analytical work show that $1 invested in cogeneration in Tunisia generate savings of 0.63 kgoe per year, and that $1 invested in EE generate savings of 1.67 kgoe. This would translate for the World Bank credit line, based on reasonable assumptions for private sector cofinancing and cogeneration/EE distribution, into total savings of approximately 105,000 toe per year. It would in turn translate into GHG emissions reduction of around 265,000 tons of equivalent CO2 per year, meaning that cost effectiveness of GEF funds per CO2 reduced for the non-biomass components is 5.7 $/ton.

Regarding the biomass component, the GEF contribution, although relatively modest in dollar terms ($0.8 million), is regarded by the Tunisian authorities as a key element to actually launch an effective national strategy that will eventually lead, among other things, to significant investments in industrial size poultry droppings treatment facilities (over $30 million for the two identified projects).

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

The World Bank's comparative advantage for the GEF lies with its position as a leading international financial institution with strong experience in investment lending focusing on institution building, infrastructure development and policy reform, across all the focal areas of the GEF (GEF C31.5, May 2007).

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)*
H.E. Mohamed Nouri JOUINI	Minister	Ministry of Development and International Cooperation	June 24, 2009
Najeh DALI	GEF Focal Point Diector-General,	Environment and Quality of Life	May 26, 2009

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
Steve Gorman World Bank		December 14, 2009	Kanta Kumari Rigaud; GEF Regional Coordinator for MNA	202-473-4269	kkumari@worlbank.org