Project Final Evaluation

"2222 - Action Plan for Removing Barriers to the Full Scale Implementation of Wind Power in Mexico (Phase I)

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1. Executive Summary

1.1 Project Summary

Project name:	**Action Plan for Removing Barriers to the Full Scale Implementation of Wind Power in Mexico**			
Project Number GEF:	PIMS 222		*Monto programado (US $)*	*Monto real (US $)*
Project Number UNDP:	0013582	GEF Financing	4'736,000	4'736,000
Country:	México	Otros:	4'860,000	4'860,000
Area:	Latin America	Goverment	2'216,000	2'536,000
Focused Area:	Latin America	UNDP:		
Operation Program:	Climate Change	Total cofinancing:	7'076,000	7'396,000
Implementation Agency:	OP-6 (Renewable Energies)	Project Total Cost:	11'812,000	12'132,000
Other Agencies involved:	Institute for Electric Investigations (IIE)	ProDoc Signature Date (Project Initiation):	6 Nov. 2003	
Type of project:	-----	Closure Date of project:	Propuesta: 31 Dic. 2005	Real: Julio 2010
	Full Size Project (FSP)			

1.2 Brief description of the project

This full size project has been developed for about six and a half years (2004 – 2010). The approximate investment that has been contributed during this period of time is about USD $12'132,000, part of this amount USD $4'7360,000 has been provided by the GEF-UNDP associations, this amount was used in the Strategic Program for the climate change mitigation projects.

The development objective of the Project was defined to "to reduce global CO2 emissions by 4 million tonnes (Mt) per year by promoting the development of a commercial wind energy market in Mexico with a target of 2,000 MW of installed wind power capacity in ten years". As inmmediate goals, the project proposed to eliminate the institutional barriers for the long term wind energy implementation in Mexico; so this would facilitate the installation and operation for three wind generation plants models connected to the National Electrical System in Mexico (SEN Mx. abbrev).

The Project Document (ProDoc) was approved and signed on December 2003. The project implementation was originally referred to last no more than two years. The project was due to be accomplished on July 2010, after seventy nine months from the project approval. The Project components and activities advance and achievement have been reviewed through the UNDP-CO and IIE Monitoring Tools during the Project implementation. These tools include the Project Implementation Report Annual Project Review, the Project implementation Review, the Project

Quarterly Reports and the Annual Operation Programs. The comments and data consistency that are consigned are a testimonial for the project property, thus the validation of the commitments made.
The original established length of the Project was 24 months, and it was extended because of circumstances beyond the control of the IIE's implementation and the UNDP-CO's supervision. Among these circumstances, one of the most representative, was that the territory donation process in the wind development area was too long, and due to this the Wind Technology Center was delayed for three years; also the delivery times for the turbine acquisition were settled in periods of two or more years of the original estimated date. The second stage of the Project includes objectives related to the national wind resource evaluation follow up, the new wind Projects development formulation, the three business models construction and the proper development for the Mexican Energy Market and that way to increase it. This stage will not be continued by the implementing agency because of two reasons: the first one was already contemplated in section C of the Project Document, where it indicated that of the World Bank advanced successfully with the Government funded initiative denominated "Long Term Renewable Energy Exploitation Special Program" (PERGE Mx abbr), it wouldn't be necessary continue with the second stage because the same objectives were contemplated in the PERGE.

On the other hand, on June 2007 the APR, the GEF-UNDP notified through the UNDP-CO to the IIE that they will not continue with the second stage due to the GEF CEO's decision, who was initiating its management at the time, dictated that all second phases of all projects were cancelled. In special cases, the second stages would have opportunity to be developed and managed like new projects. *De facto*, this second stage was contemplated "not to be completed" in GEF-UNDP official documents since 2008.

As a strategy for the appropriation of the Project some promotion and communication goals were established among the actors involved in the project. At this point, the work convening capacity of the IIE, the participants' interest and the support from different actors such as the State Government in Oaxaca achieved the approximate assistance of 1800 people in different seminaries, symposiums, workshops, courses and forums.

The Project has received substantial support by the local co financing with an approximate amount of usd$7.4 million. Different cooperation and exchange alliances have allowed to consolidate a technical assimilation strategy that has consolidated IIE and enforced the local capacities to face the future local human resources and energetic development.

1.3 The Evaluation background and objective

This Project Terminal evaluation was developed as an expressed request by the local UNDP local office in Mexico, as a mandated requirement for the GEF-UNDP projects. The period of time in which this evaluation was carried out was in September 2012, when the wind electric generator was restarted to be settled after some minor adjustments by the technological supplier.

1.4 The Main recommendations, learned lessons and Conclusions

1.4.1 Conclusions

Even when there were different federal, state and municipal public administration changes, not enough communication and cooperation between federal and state departments at the end of 2006 and 2007; and the delayed delivery results, this Project reached successful levels and learned lessons that will serve as a platform for future projects with different results.

The Project has contributed to modify the legal and regulatory environment which has "soften the road" to the long term wind energy in Mexico, with the government staff support and the GOM energetic strategy.

We have to mention at this point about the support given by the SENER, the CRE and the SHCP agencies which promoted the Interconnection Services Agreements as collective sources for the renewable energy or the short term efficiency on the co generative collective systems, 2004; the accelerated depreciation policies for environmentally friendly investments on 2004; the renewable energy generation law and the Energetic Transition Financing on 2008; the climate change Special Program on 2009; the Renewable Energy Generation Special Program on 2009; and the General Regulations for the national electrical system interconnection for generators or concessionaries with renewable energy sources or efficient generation on 2012, among others.

There is no doubt that we have a lot to do, but there was an open opposition or a perceived slowness shown by the three different government levels, that now has changed completely in a few years.

These shown results wouldn't be possible to be completed because of the Project manager leadership and determination, he had the technological knowledge and talent to combine both, and his abilities to understand and address the needs, which always were changing, most of all with all the people involved in the regional environment.

There are some barriers that still are perceived according to develop these projects. The same barriers are a challenge for the energetic development because the public officer's are beginning their management at the end of this year.

In the worst scenario, the impact goals for the Project as it was designed will be reached in two years. This is because at the beginning the natural gas Price of 1000 cubic feet was about usd$4.00 to usd$6.00 on May 2001 and we were mistaken. At this moment when this Final Evaluation Project is written (2012) the Price is usd$2.69 and it may vary in a short term to usd$2.20 or usd$2.18.

This, of course, makes very competitive the electrical energy generation with combined cycle platforms, these use natural gas, their Electricity Production leveled Price is a reference for the Electrical Energy Public Service Law, this reference is used by the CFE to purchase the electricity coming from energy independent producers, and as the mandatory interpretation of the Electrical Energy Public Service Law Report. Added to this, the fact that Mexico is located in the worldwide third place with natural gas resources in mudstones; and really close to the bigger consumption centers with the main importation points of such input from de US.

There were some data that were able to obtain from international financing institutions under the scheme of the Mexican south east wind Project, the internal rates backup were settled in levels between 8 to 15% after tax payments, without considering the carbon positioning. This deserved

that some global investment qualifiers have been granted a BBB investment to the last wind electrical projects in the area which have settled public debt instruments.

At this last point, we will have to wait to know the resulting regulatory change for the climate change General Law that was issued on June; and from which we expect to contribute to deliver more veracity for these projects investment.

This leads to evaluate the Financial Sustainability as Probable.

Financial Sustainability			
4. Probable	3. Moderately Probable	2. Moderately non probable	1. Non probable

For 2015 the Project Document fixed goal to have an installed capacity of electricity production with wind electricity with an equivalent wind generation of 2,000 MW; this may be reached at the end of 2013.

Despite of this huge investment advance on the wind electric generation investment, the applications to obtain the generation permissions with this technology have decreased, so the visualized investments cannot be reached further 2014. This can be explained as a sign to wait until the knowledge of the GOM federal administration which begins at the end of 2012; this would modify the current legal framework.

For this, the socioeconomic sustainability will be qualified as Modestly Probable.

Socioeconomic Sustainability			
4. Probable	3. Moderately Probable	2. Moderately Non probable	1. None probable

Despite of all the progress obtained in the legal and regulatory framework, the appropriation for this generated technology may be weaken if the Electricity Federal Commission do not achieve the socioeconomic issues of the referred prices, with the regional breakdown in the RLSPEE contract, due to the legal contract interpretation to choose because “the long term total economic cost would be less”. This is the main risk of the Project: The Federal electricity Commission appropriation lost, due to the wind energy electricity generation for the next federal administration which begins on December 2012.

So, the Sustainability Institutional Framework qualifies as Moderately Probable.

Insititutional framework sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

About the Environmental topic, we know that there are activities of some organized groups around the animal biodiversity; they tried to stop the wind electric projects development in the most powerful wind area in the country. We have settled different participation agreements among academic institutions, the investors, and the people living in the area associations and the three levels public administration organizations to establish monitoring programs based on condensed methodologies of participation to corroborate the animal biodiversity impact in the area. These monitoring programs are reviewed every five years to define the prevention assertive criteria and slow them if necessary. The first review will take place at the end of 2013.

Due this, the Environmental Sustainability qualifies as Moderate Probable

Environmental sustainabilityl			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

By the year 2020 the private and public wind generation will reach a capacity of 12 to 15 thousand MW if the procedures of the CRE are published by the end of this year or at the beginning of 2013 about the renewable energy; and the GOM public administration management maintains the changes made by the CFE and the SHCP. To this based scenario, this wind electric generation will be equivalent to a reduction of the GG for more than 20 MTCO2 per year.

Viewed as a whole the "dimensions" described in the precedent sections we conclude that the Project sustainability is moderated Probable.

Project Sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

The Project qualifications, its design and result are summarized in the following table:

GEF-UNDP specific elements identified	Assigned qualification by the reached terms results.
Project formulation	SUCCESSFUL
Conception and Design	SUCCESSFUL
National Apropiation	HIGHLY SUCCESSFUL
Involved participation	MODERATELY SUCCESSFUL

Project Implementation	SUCCESSFUL
Implementation development	HIGHLY SUCCESSFUL
Evaluation and Monitoring	MODERATE SUCCESSFUL
Involved Participation	SUCCESSFUL
Results	HIGHLY SUCCESSFUL
Objectives Achievement	HIGHLY SUCCESSFUL
Project Global Qualification	SUCCESSFUL

Due this, the Project achievement results and the visualized impact in a short term may qualify the overall performance as Successful.

1.4.2 The Learned lessons and Recommendations

It was mentioned in regulatory terms that there is a lot to do. Some of the Mexican investors and academics have proposed the need to ensure the "game" rules which may be planned in a long term, especially in a strategically topic for any country: the energy generation and transmission.

Some of the specific points that are necessary to keep working on are:

- The Chamber of Deputies needs to have a peremptory legal term to approve or suggest modifications to the National Energy Strategy. (ENE mx).
- To update the strategically planning of the National Electrical System transmission and distribution, with regional disaggregation and the diffusion need by the CFE and SENER of the official documents to the electrical section planning.
- That the academics, SENER, CFE and important involved organizations agree to calculate a methodology for the generation costs for the electricity generation with the different energy sources and different technologies, as the Electricity Production Level Price with regional disaggregation.
- An estimate to define the electricity transmission cost for the regional fee scheme.

Mexico has chosen to initiate its experiences on the wind energy production technological development in one of the "highest" wind regimen areas for this purpose. This has produced technical difficulties that challenge the best worldwide designers which have taken it to an internalizing knowledge apparently "slow".

These experiences properly exploited, however, may allow that this curves on the wind generation technology development for the electrical energy will be quite short and assertive, in case of

reproduce these projects in slow wind areas. So, these projects that are taking place in Tamaulipas and Baja California may reach excellent results in a short term.
It is noteworthy in this regard, the opportunity that this represents for Mexico, as it has been done in Europe, China and India, explore as an alternative for the small villages with medium economic development, the D*istributed Generation*. The main advantages when the distributed generation is used are:

- Distribution and transmission networks loss reductions.
- The increase on the reliability of the electric power supply,
- Control on the reactive energy and the voltage regulation in the distribution network.
- Greater facility to incorporate generated energy by renewable sources; and
- Capacity Release in the transmission lines that feed the distribution area, in consequence, the increase reliance to reinforce the capacity of the transformation and transmission system.

Implement medium and long term investments as they may be required to generate and transmit the electrical power, need minimal legal and financing certainty levels during the evaluation which may reduce the risk perceptions to "settle" the discount rates for the commercial partners in Mexico. This may allow that many investment projects for Mexico that were considered as non profitable because of the actual risk surcharges now would be taken profitable.

The Lessons learned

The social integration for any Project face different contemplated and none contemplated conditions; at the same time, it has different effects but, also, effects that were not expected. There are some elements identified for the development and design for future projects, this is with the purpose to inherit this experience acquired. These are the lessons learned:

- *The Project design was simple, flexible and logical, and with this was easier to adequate the times and reach the intermediate targets for the development conditions.*
- *Ensure the participation, also in the design, of all the involved in the Project development.*
- *The Project development in a time frame which do not exceed the management periods of the local public administration, it must include an extra time to "alleviate" the deadlines which increase because of the changing regulatory procedures or the applications accumulation to be processed.*
- *Invest in the Itsmo de Tehuantepec area requires to set, in the project design, some susceptible options for the land acquisition for the implementation.*
- *Use the programs and services that are offered by other government agencies.*
- *The lack of Human Resources for the Project development increases its costs.*
- *The components with high technological contents prices and delivery times are subject to economic cycles.*
- *Take advantage of the opened "spaces" because of the opposition and critics for the Project to generate community support.*
- *The opportunities generation for the cooperation networks creation.*
- *Elaborate a document for Better Practices.*

2. Introduction

2.1 Project Background

The idea to explore some wind powerful places in Mexico to produce electricity comes from the 80's decade. In the middle of that decade, some IIE investigators said that the Itsmo de Tehuantepec area had the outstanding characteristics to take advantage of the wind.

On the 90's, in the beginning, it was planned the idea to install a wind electrical generation center in that area. In 1994, the CFE (Electrical Federal Commission) hired a builder for the first center in Mexico, with wind electricity, in the middle of La Venta, a place in Oaxaca. So La Venta I the first wind electricity center was born.

The operative results of such center corroborate what the IIE was anticipating some time ago, the plant factors that were reached in La Venta I were higher than the reported as the highest in the world. Despite of the results, that in theory allow generating the benefits to assist the economic viability for a project, the private investors did not visualize that this was enough to trespass the associated costs to the barriers that formed the current regulatory framework at that time. The same CFE didn't continue with the wind electric generation development in that area for several years.

The current regulatory framework at that moment, contemplate as a basic premise the electrical power generation, conduction, transformation, distribution and catering for the public service provision, this is an exclusive faculty from the Federal Electricity Commission. In the catering category, the private initiative participation, cogeneration and energy independent producer (PIE), were authorized by the 1992 reformation. Only accomplished on 2003, this proposal for "social participation", would represent the electricity production under those modalities just 8% from the national electricity production.

At that time, the national energetic plan scenario, the baseline scenario, contemplated for the second decade in the middle of the XX1 century, that the wind electric generation will increase a Little more of 20 times, 22700%, while the combined cycle technology generation would be a Little less than three times, 271%. This huge difference on growth rates, however, and the national generation with CC technologies will maintain a higher proportion of a hundred times of the wind electrical generation. Check Chart 1.

To this baseline scenario and contemplating what was reported on 1997 in Mexico, concerning to its greenhouse gas inventory (GGI), with a 23% figure participation in the electricity production in the national GGI generation, arise the idea to look for alternative, renewable energy generation sources scheme search.

Chart 1 Prospective comparison of electricity generation technology, scenario 2004.

GENERATION TYPE	Power generation Exploration (GWh/año)		CHANGE (%)
	2003	2013	
Wind power	6	1,422	23,700
Combination Cycle	36,877	155,490	371

Source: SENER data own elaboration (2004), p. 106.

So the Ministry of Environmental Improvement and Natural Resources and the Ministry of Energy decide to pose a collaborative effort to develop a transversal policy not only to the energetic safety elements, also, the development area and the greenhouse gas reduction.

On the other hand, the IIE on its effort to develop a national electricity production programme through the wind generation and searched for international agencies collaboration for the cooperation to the development. Is this way how the IIE got in touch with the GEF through the UNDP.

In the proposed Project development by the IIE, it is contemplated a parallel effort to impulse which assist the reduction of investment and commercialization barriers from the produced electricity with wind generation.

The GEF-UNDP agencies agreed to participate in the IIE Project when it integrate the energetic safety topics, region development, greenhouse gas reduction; and the investment and commercialization barriers reduction for the wind electric power.

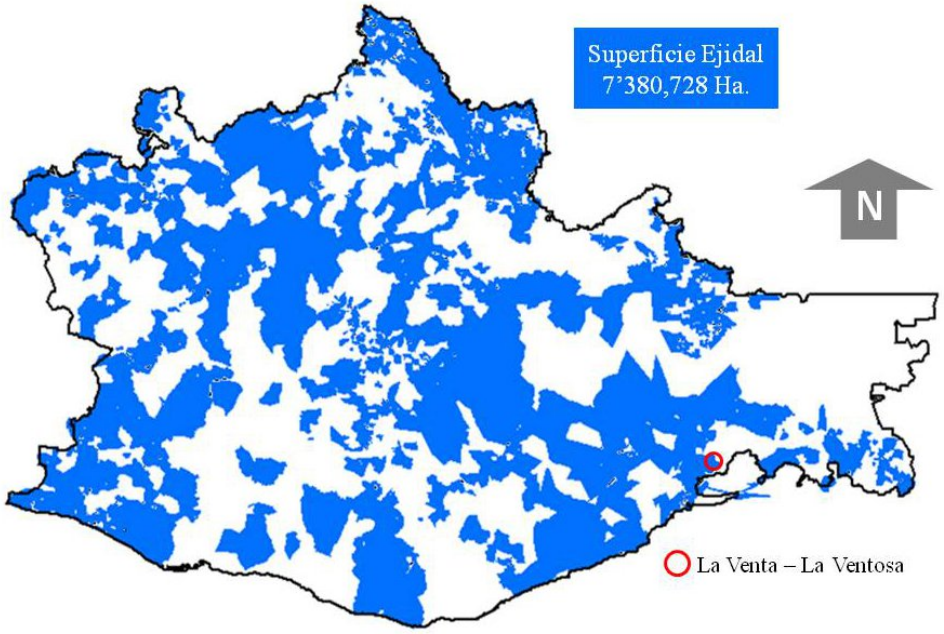
The Project was denominated as "Action plan to eliminate the long term development barriers for the wind energy in Mexico" and it was accepted in the Renewable Energies Operation Program on October 15th, 2002. The Project document (ProDoc) was signed as agreed by all the participants on November 6th, 2003. The Project development objective was defined as: Reduce the Mexico's greenhouse gas annual emission, through the long term commercial wind generators installation and operation. The strategically objective is to reach an installed capacity of 2,000 MW in a term of 10 years which will reduce annually the equivalent of 4 Mt CO_2.

The outlined project in the Document has an assigned total budget of USD$11'812,000 composed by a direct GEF contribution of USD4'736,000 and a Mexican private and public co financing of USD$7'076,000.

2.1.1 Project design modifications.

In general terms the Project was developed reaching the planned goals in the Project Document. The second component and all the connected activities to it, however, had a chronic disparity for different circumstances which were out of reach from the implementing agency, the IIE and the local UNDP office.
After the first 6 months the original planning, after de Project Document was signed, should have accomplished even the land acquisition as the federal, state and local authorizations and permissions obtainment for the Wind Technology Regional Center construction. And, by the 15th month, the basic infrastructure of the Center should be built and operating.

Figure 1.Oaxaca state land ownership.



Source: Own elaboration including FIPP, PA data 2012.

The land ownership distribution in Oaxaca has a centralization called social property, common lands and communal property; this is equivalent to the 77% of the total area. Besides, the 47% of the area is regularized only. The Itsmo de Tehuantepec area is where the CERTE was desired to be built. La distribución de la tenencia de la tierra en el estado de Oaxaca tiene una concentración en la llamada propiedad social, ejidos y propiedad comunal, equivalente a poco más del 77% de la superficie total. Además, sólo está regularizada el 47% de la superficie total. La región del Istmo de Tehuantepec, en dónde se deseaba instalar el CERTE, padece en niveles graves de esta situación, ver Figura 1.

The original option was to remove the installations and land domination of the Forest, Agricultural and Livestock National Institute at Juchitan, Oax., which was not in operation. This was a complicated and long process and it was initiated by the IIE with some good successful expectative. This removal was modified by the federal legislation, however, and the process was more complicated and took a long time; the Oaxaca government moved forward with this process and

that way the process was achieved by GOM, then that property was given to the Itsmo University by the president decision.

Under this circumstance, the IIE and the UNDP-CO initiate approaches exposing the Project strategy. The government offered to donate the land and the only request was that this process would not be under any social property regime.

The land was localized and the donation process was initiated with the government, it was achieved in the first trimester on 2006, twenty-seven months after the Project document was signed. During that time, the UNDP-CO was reporting to the APR the need to postpone the Project execution term to twelve months. This led to the project closing date to December 2006. This could not be accomplished because the land donation was delayed nine months.

The Annual Project Review (APR) in the middle of 2006, when the land property was ensured is planned as a second date for the closing date review on December 31th, 2007. But the participant's absence during the bidding processes for the wind electrical generator buying, which is part of the second component in the process, or the subsequent abandonment of the few participants caused that in the middle of 2007 this was reconsidered in the respective APR, the project closing date to 2008.

For the APR on 2008, the Project closing date is shifted to December 2009, for fourth time, because after the Project bidding process is concluding is define to recruit to Komai company, in the first trimester on 2008, for the wind electric generator design, construction and operation. It is contemplated to start on October, 2009. .

In the middle of 2008, in the same APR is considered to be made a mid-term evaluation to the end of the same year.

On 2009 during the annual review, the wind electric generator delivery advance reaches a 90% and is not reported the completion of the MTE.

The wind electric generator starts operation on July 1st. 2010 and is reported in the APR during that year.

In fact, the closing date can be considered on July 1st., 2010, even when there were three formal activities that were not accomplished: The CERTE opening by the Mexico's President that has not been accomplished, the MTE completion and the Interconnection General Rules official publication to the national concessionaires and generators electrical system with renewable energy sources or efficient generation, that was made on May, 2012.

Therefore, the Project execution took 78 months instead of 24 that were contemplated.

2.1.1.1 Operative Annual Plans

The operative annual plans (POA) include more detailed activities that may allow adapting the original logistic contemplated to reach the fixed goals in the Document Project.

Above all these are the new activities that were included:

The Regulatory Environment:

The IIE Collaboration with the CRE in the Contract model definition for the interconnection contract for electricity generation plants with renewable sources, CIFER.
The IIE Collaboration with the CONAE to make the "Negotiation Guides to develop an Electric Generation Plant which uses Renewable Energy in Mexico".
Official Mexican Standard Project, NOM-S/N-SEMARNAT-2012, in which are established the technical specifications for the environmental protection during the site selection and preparation, wind electric facilities construction, operation and abandonment in low environmental impact areas.
The Collaboration with the Interconnection general rules in the drafting to the national electricity system for generators with renewable energy sources or efficient generation.

The Management to government agencies:
Procure with the Oaxaca state the land donation for the CERTE construction.
Procure with government agencies coming from three different politics institutions.
Re start the procurement and management processes with new government administrations because of changes during the management legal terms in the beginning and ending processes.
With proactive solution offers procure the decisions made by officers for "typical" paperwork.
Monitoring migratory and resident's birds and bats in the CERTE Project area.
Support and participation at V International Symposium for the Wind Corridor Development of the Itsmo de Tehuantepec.

Diffusion:
Formal and informal diffusion activities increment about the wind electric generation benefits to: To raise awareness to the three government levels officers, encourage interest to investors, attract attention and support of academic institutions and people in general, etc. In a formal way the diffusion has reached about 1,800 people assistance.
There was a Symposium about the Birdlife and the wind electric generators operation.

2.1.2 The country development context.

During the seven years that this Project was created, Mexico experienced huge changes in the Energetic Regulatory framework. At the beginning of this execution period, the regulatory barriers were seen as an insurmountable wall because of the permanent contradiction that is common in two of the legal groups and between the mediate positioning in favor to the GEI reduction and a negative practice to modify the regulatory structure and legislation in the energetic, environmental and financial general areas.

At that time, the wind electric generation market was authentically incipient. Actually, even it can be said that the market have reached full maturation, the investment in wind projects have increased considerably, so much so that the proposed goal for 2015 will be reached at the end of 2013 with the wind electricity generation installed capacity.

The success in this matter have been a result of different participants, among them we have to distinguish to the President Calderon support to the renewable energy, the different federal agencies coordination to move forward the regulatory reform proposals. Another huge factor has been the interest given by big electricity consumers to consolidate their position about the Social Responsibility topic, contributing with the electricity production through renewable sources. Companies like Peñoles, Cemex, Femsa, Bimbo, etc., are part of self-supply societies which have invested in the Itsmo de Tehuantepec area with wind electric projects. See Chart 2.

Chart 2. Self-supply societies with investments in the Itsmo de Tehuantepec area.

Company	Self-suply Society	Installed Capacity (MW)	Electricity consumption estimated proportion. (%)
BIMBO	Mexican Wind Developments (DEMEX)	90	100
CEMEX	Eurus	334	30
FEMSA	Renewable Mareña	396	85
PEÑOLES	Wind Force from the Itsmo	80	20

Source: Self-elaboration.

Is needed to be said, in this matter, that the overall approach of SENER, CRE and CFE, done in 2007 during the *open Season*, and which was agreed to develop a mechanism to determine the transmission capacity that the investors would be able to set apart under firm and irrevocable commitments, and whose omission would be penalized with performance guarantees, ease to the CFE justify the distribution and transmission lines investments that would allow to connect the wind generation to SEN. The success obtained was huge during this announcement that was necessary to develop a second stage in that open season.

All the above has permitted that the investor's efforts in this kind of projects were able to be crystallized in international development finance institution credits syndicated with several private bank institutions. See attachment 8.

2.2 Evaluation Purpose.

This Project Final Evaluation has been performed by expressed request by GEF-UNDP under contract to provide services resulting by tendering RFQ-61-2011. The period of time that this evaluation was performed was on September 2012, 26 months after the last component of the project was delivered. The general objective of this Evaluation is analyze the Stage 1 project development, all the achievements, results and reached impacts.

The evaluation structure was developed under five areas:

Evaluation and monitoring about the results and achieved impacts.
Analyze and evaluate the Project results that have obtained during its execution, compare them against of what was planned in the Document project.

Identify the clue elements while the decisions are taken.
Evaluate the efficiency during the processes performed in the Project development as well as the Project partner's commitment and involvement.
Promote the delivering reports about the use of resources.
Identify processes and deliverables with which the Project achieve its commitments to answer and equilibrate the needs of all the people involved, in both its processes on the decisions taken as well as the activities development and the deliverables satisfaction.

Documenting and disseminating the lessons learned.
This will include the results and lessons learned sustainability, analysis about the strategies used and the development arrangements which could be relevant for other projects in both the country and the rest of the world.
Measure the converge level with other ONU projects and the UNDP priorities.
Especially about what was referred in the Cooperation Framework Development of the United Nations.

2.3 Key elements identification

These key elements have been proposed to ponder the achievement of the objectives:

Relevance
The level of connection with national development priorities, regional or sections, and ownership of those involved.

Effectiveness
The ability to achieve the objectives outlined in the project.

Contribution
The project added value or results multiplication to achieve the national or regional development objectives.

Incentive and key success factors
Initiatives, options and comparative and competitive advantages which allow the objective performance, improve their quality, reduce costs and/or ensure sustainability.

Efficiency

The tangible and intangible inputs proportion to achieve all the objectives.

Risk factors
Circumstances, events or omissions which avoid the objective management, reduce its quality, increase their costs or delay its achievement.

Sustainability
The appropriation of the results, of those involved, as well as the measurements which secure its permanence on time.

Impact
Approximate weighting results to social changes of second order.

2.4 Evaluation methodology.

The methodology used for this Project Final Evaluation is structured in accordance with mandates by the GEF-UNDP evaluation and monitoring policies, the final evaluations key objectives and the key elements to weight those objectives that are written in the last point.

This Project Final Evaluation is developed in the next steps:

The documents review and Data Entry

At the cabinet level an investigation was made to collect the data with the purpose to become familiar with the agencies and institution participating time frame, specific objectives, legal framework, evaluation and monitoring practices, previous evaluations, etc. This material has allowed elaborating the three main problems to become the three main objectives and the logical main framework. With this Logical Framework Closer is describing the logical intervention that underlies the theory of change planned. This Logical Framework Closer, however, is the basic analytic tool that designs the questionnaires for the different involved groups.

The visit to the field

There was a visit field included in the EFP to the CERTE and to the central wind electric generation area with the purpose to know, out loud, the opinions, suggestions and relevant comments about the Project development.

When this visit took place, specifically, the following activities were:
The Project manager introduced the Project development general context, the achievements and main activities, the changes on the Project design, problems that took place during the process and the measures and actions to solve them and the mitigation of their consequences.

The relevant information was analyzed about the Project development: information, reports, publications, diffusion material, etc.
There were interviews with technicians from the wind electric generator supplier.
There were interviews with operators and maintenance companies from wind electric generation effective operation.

The interviews with those overriding involved.
There were a series of interviews with those main involved which because of their influence have contributed to the project objectives achievement.
These interviews took place in Mexico, Cuernavaca and Monterrey. The Schedule with the interviewed people is described in the attachment 3.

The additional information collection and Ex – post clarifications
In the report preliminary version drafting there was additional information and some clarifications were made with some members from the Project crew and with those overriding involved.

Preliminary version report
There was a report version distributed among the GEF-UNDP CO members and the Project management to read it, its partial approval and suggestions about content, clarification, modification and/or correction.

The final version report delivery
Suggestions were incorporated for clarification, modification and / or correction made by members of the GEF-UNDP CO and project management.

2.5 The evaluation structure.

This Project Final Evaluation has been structured as the Reference Terms specification, see attachment 1; as well as the UNDP suggested template in the attachment 7 from its Evaluation and Plan Manual.

3. The Project and its development context.

3.1 The Project beginning and termination.

The Project design stage took almost one decade, since the Project plan formal efforts were initiated, programmed and budget definition until the Document Project was signed.

The following list realizes the outstanding facts:

1994	The formal efforts are initiated about the wind electric Project plans.
1997	The IIE initiates the Geographic information System development for the Renewal Energies commissioned by CONAE. (SIGER).
2000	The SENER instructs to the IIE to develop a Pilot Plan to impulse the Renewable Energies Development.
2001	At Cocoyoc, Mor., takes place the international workshop "Best Practices on Renewable Energy: Sharing some Experiences", participating some staff from IEA, REWP, GEF and UNDP.
2002	The GEF registers the complete range Project as "Action Plan to eliminate barriers for the long term wind energy development in Mexico".
2003	The Project document is signed as agreed. The GEF assigns the project code: PIMS 2222.

The Project implementation stage, to be made originally during 24 months was extended along 84 months. The initial budget assigned by GEF-UNDP was not modified.

2003	November: Project implementation formal initiation.
2004	May: The Project inception workshop.
2004	November: The first of 15 anemometric stations engaged is installed.
2005	March: Wind electric Project first document about the Wind Corridor at the Itsmo de Tehuantepec.
2005	March: A document "Improvement to the legal, regulatory and institutional framework proposal and analysis which influence to the wind electric generation development in Mexico" is delivered.
2005	August: Feasibility Study about a Wind electric Center for Baja California Sur (with the CFE collaboration).
2005	October: Wind Forum at the Oaxaca Technological Institute.
2005	November: Participation and support at the International Colloquium V for the Wind Corridor Development at the Istmo de Tehuantepec.

2005	November: Evaluation workshop about wind potential in Zacatecas (Zacatecas Independent University).
2006	March: Environmental Impact manifestation and SEMARNAT authorization.
2006	March: Construction land for the Wind Technology Regional Center (CERTE).
2006	April: Recollection and analysis about worldwide studies made about the birdlife impact, construction activities and wind electric central operations.
2006	June: Project Authorization CERTE construction.
2006	August: CERTE authorization program about the environmental follow up.
2006	August: Management guide complement to develop the electric generation plants in Mexico which use the renewable energies.
2006	September: Birdlife and wind generators symposium.
2006	September: Obtaining Construction License (Juchitán city council).
2006	September: Obtaining Access Project authorization (SCT).
2007	January: Wind Resource Evaluation and basic indicators generation about wind generation self-supply viability (Stakeholder Peñoles Industrial Services).
2007	January: Obtaining interconnection permit in Small producer modality (CRE)
2007	February: The publication and diffusion of "Better practices guide for the wind projects development".
2007	June: Migratory and residents birds and bats monitoring in the CERTE Project influence area.
2007	August: One complete year data file diffusion per each anemometric station.
2007	September: Wind resource punctual map in promising areas with reference stations.
2008	April: The CERTE basic infrastructure construction.
2010	February: Signing of purchase-sale electricity contract with CFE.
2010	February: First wind generation acquisition, installation and operation at CERTE.
2010	July: Obtaining the CERTE commercial operation authorization.
2012	May: Interconnection general rules for the national electric system generators and concessionaires with renewable energy sources and efficient generation.

3.2 The implementation

The Project has attracted a local co financing substantial amount equivalent to USD$7'396,000.

During this Project Final Evaluation processed on September, 2012, some of the Project activities pending to be made were: The formal opening by the president; and the Official Mexican Standard Project publication, , NOM-###-SEMARNAT-2012, in which are established the technical specifications about the environmental protection and the site preparation, construction, operation and abandonment of wind electric installations at low environmental areas.

These activities, specially the second, will continue to be promoted by the IIE, CRE and SENER, even if the GEF-UNDP terminate and close the PIMS-2222 project.

3.3 The Problems that the Project seeks to address

In the Project document were identified the problems addressed and these are defined as:

Institutional and legal framework
The need of adequate the legal framework and create the ad hoc regulations for the renewable energies and particularly the winds, which provide the incentives to develop investment projects.

Guaranteed Price
Determine which ones are the price mechanisms appropriate for Mexico, to encourage the increased supply of wind projects.

The Financial Constraints

What increases the risk surcharges are the commercial experiences absence during the wind electric Project developments in Mexico, joined with the regulatory barriers, become a financial restriction which perpetuates the associated perception to these projects with highly preparation costs and without an implementation guarantee in reasonable timing.

Market Structure and Human Resources
Well trained personnel significant absence in both wind electric technology equipments operation and maintenance.

Technical Barriers and access information
The wind resource available data in Mexico are general, with low space resolution and non sufficient pre-invested studies.
There are no recommended practices, specifications and national techniques for the wind Project developments in Mexico.

Besides, there is a significant absence of knowledge by the energetic sector and state and municipal officials about the potential benefits to implement the wind electric generation.

3.4 The Project development and immediate objectives.

The Project was designed with the idea to remove the key barriers in long term wind energy in Mexico, the established objectives in the design stage are clear and consistent in both the United Nations cooperation global strategy and the own GOM.

The development objective was defined as:

Reduce the Annual Emission of Greenhouse gas in Mexico through the commercial wind generators installation and operation in long term. The strategically objective is to reach an installed capacity of 2000 MW during a 10 year term which annually would reduce the equivalent of 4 Mt CO2.

As long as the Project objective is specified as follows:

Reducing Barriers to market identified wind power in order to:
1) Facilitate the three wind generation plants model operation and installation in Mexico connected to the distribution central network.
2) Create an wind energy sustainable market in Mexico.

The fourth stage I deliverable Project components are:

1st. Component
Institutional Improved legal and regulatory framework for wind energy generation.

2nd. Component
The Establishment of national and regional abilities to support the development of wind energy as viable supply source for the electricity market.

3rd. Component
Wind resources evaluated in the most potential development areas in Mexico and complete feasibility studies for three wind plants.

6th. Component
The relevant information promotion for electricity wind production based in probed financing and institutional mechanisms.

The correspondent description *Activities are included in the attachment 2.*

3.5 The main agencies Involved

The Project interacted with a wide variety of agencies involved including:

Secretaría de Hacienda y Crédito Público,
Secretaría de Energía,
Secretaría de Mejoramiento del Ambiente y Recursos Naturales,

Secretaría de Comunicaciones y Transportes,
Comisión Federal de Electricidad,
Comisión Reguladora de Energía,
Comisión Federal de Mejora Regulatoria,
Comisión Nacional para el Ahorro de Energía,
Comisión Nacional para el Conocimiento y Uso de la Biodiversidad,
Programa de las Naciones Unidas para el Desarrollo,
Fondo para el Medio Ambiente Mundial,
Instituto de Investigaciones Eléctricas,
Diferentes instancias del Gobierno del Estado de Oaxaca de Juárez,
Diferentes instancias del Municipio de Juchitán de Zaragoza,
Diferentes instancias del Municipio de Unión Hidalgo,
Funcionarios de gobiernos estatales con sitios con potencial eólico,
Asociación Mexicana de Energía Eólica
Academia Mexicana de Derecho Ambiental
Desarrolladores de proyectos de generación eoloeléctrica,
Empresas contratistas locales,
Medios de información locales,
Instituciones de enseñanza media y superior locales: Universidad del Istmo, Instituto Tecnológico del Istmo, etc.,
Instituciones de enseñanza superior de otros estados,
Fabricantes de pailería y estructuras,
Desarrolladores inmobiliarios,
Organizaciones no gubernamentales,

There was an interaction with other countries, also:

Agencia Internacional de Energía,	Energy International Agency
Banco Interamericano de Desarrollo,	Inter American Development Bank
Administración de la Información de Energía,	Management of Energy information
Desarrolladores de proyectos de generación eoloeléctrica,	Wind electric generation Project developers
Fabricantes de turbinas de generación eoloeléctrica,	Wind electric generation turbine builders
Administradores de fondos para proyectos,	Project funds managers
Funcionarios gubernamentales de países centroamericanos,	Government officials from Central American countries
Desarrolladores de *resorts*	Resorts' development companies

3.6 The Expected Results

The main expected results at the end of the Project such as the specified with the objective indicators and the Document Project component were quite accurately defined in both, the basic lines and its goals.

As follow are defined the expected results with the specific goals and indicators:

Development objective: Reduce the greenhouse gas anual emission in Mexico.
Indicator: GEI Emission Reductions
Unit: Mt CO_2 Esq. / year
Basic Line: 0
Goal: 4

Project objective: Reduce the barriers for wind energy commercialization
Indicator 1: Feasibility Studies and Contest basis
Unit: Porcentaje (Estudios realizados / Estudios programados)
Basic line: 0
Goal: 100

Indicator 2: Wind production total capacity.
Unit: MW
Basic line: 1.6
Goal 135

Component 1: Improving the legal and regulatory framework for wind energy generation.
Indicator 3: Regulatory framework review
Unit: Percentage (Laws, rules and analyzed processes/ Total laws, rules and processes) s)
Basic line: 0
Goal: 100

Indicator 4: Legal and Regulatory modification proposals
Unit: Percentage (Design modification proposals/Selected modification proposals)
Basic Line: 0
Goal: 100

Indicator 5: Promotional Campaign
Unit: Percentage (not indicated to quantify variables to calculate this indicator)
Basic Line: 0
Goal: 100

Component 2: Regional and national capacities establishment for wind electrical development.

Indicator 6: Site preparation, design and obtained permissions.
Unit: Percentage (not indicated to quantify variables to calculate this indicator)
Basic Line: 0
Goal: 100

Indicator 7: Procurement, Construction and Testing in Vacuum
Unit: Percentage (Volume of completion / Total volume of the work)
Basic Line: 0
Goal: 100

Indicator 8: Technical Institutions included courses in *curriculum*
Unit: Percentage (Included courses / 2 courses per inclusion)
Basic line: 0
Goal: 100

Indicator 9: Workshops given by CERTE
Unit: Percentage (Workshops given / 2 Workshops to be conducted)
Basic Line: 0
Goal: 100

Indicator 10: Manual of best practices
Unit: Percentage (Manual published / 1 Manual to be published)
Basic Line: 0
Goal: 100

Indicator 11: Wind technology comprehension by the main actors.
Unit: Percentage (not indicated to quantify variables to calculate this indicator)
Basic line: 0
Goal: 100

Component 3: Evaluated wind resources and three wind plants feasibility studies.

Indicator 12: Generic Studies which facilitte the wind Project process
Unit: Percentage (Generic Studies made/ 3 generic studies to be made)
Basic Line: 0
Goal: 100

Indicator 13: Specific Studies for La Ventosa
Unit: Percentage (Specified studies made for para La Ventosa/ 4 Specific Studies to be made for La Ventosa)
Basic Line: 0
Goal: 100

Indicator 14: Prospective monitoring
Unit: Percentage (Anemometric Stations in operation / 15 Anemometric Stations)
Basic Line: 0
Goal: 100

Indicator 15: Wind resource evaluation for a year.
Unit: Percentage (Anemometric stations that are in operation during a year / 15 anemometric stations operating during one year)
Basic Line: 0
Goal: 100

Indicator 16: Access to wind resource information
Unit: Percentage (Information about anemometric stations to the public during a year / 15 anemometric stations annual information)
Basic Line: 0
Goal: 100

Indicator 17: Feasibility studies on
Unit: Percentage (Feasibility studies made / 3 feasibility studies to be made)
Basic Line: 0
Goal: 100

Indicator 18: Basis for the contest
Unit: Percentage (Basis for the contest made / 3 Basis for the contest to be made)
Basic Line: 0
Goal: 100

Component 6: Relevant information promotion based on proved financial and institutional mechanisms.
Indicator 19: Promotion about Relevant information
Unit: Percentage (Promotion events made / 8 promotion events to be made)
Basic Line: 0
Goal: 100

4. The Accomplishments

Although when in the mediatic speech have been highlighted the wind electric generation projects importance and need; the facts belie overwhelmingly, what is said. This was the reality of what the Project faced:

4.1 Project formulation

4.1.1 Concept / Design

The Project design was motivated by different initiatives confluence:
On one side the financial cooperation searching, on the other by the IIE to develop an wind technology investigation center.
On the other side because the GOM commitment to reduce the greenhouse gas emissions like the Oaxaca development lags.
At the same time the UNDP that in the United Nations cooperation framework with Mexico has an objective to assist the institutes abilities during the development on the matter of innovation, science and technology, and the natural resources and energy efficient management and integration.
The state of Oaxaca government wishes to develop the wind electric centers investment in the Itsmo to reinforce the employment generation and economic development in the area; and
Among other objectives the UNDP, the World Bank, the SENER and the IIE cooperation synergy is to make load flows and stability in the electric transmission network from the wind electric centers connections to the SEN; and detail the technological and socioeconomic wind electric generation benefits in Mexico.
UNDP participations were incorporated to the Project formulation to the Mexico state level. These resulted insufficient because of the total atypical situation that the Oaxaca state went through during 2004-2006. Enough to remember the electoral journey which result effervescent on August 2004 that took to a public situation to discontent which difficulties the municipal government relationship, issued by an opposition party to both, the outgoing and elected governors and the republic president.
The local political pressure and the management consequent paralysis with the municipal and state government agencies constitute a wall almost unsafe for the land acquisition where the CERTE would be built. This led to differ in the 2nd component during its activity 1, from 18 to 37 months.

In some way this topic was contemplated in the Project design as one of the *assumptions* to the 2nd component: *Regional and national capabilities establishment which support the wind generation development as a viable supply source for the electricity market.*

At the same time and due to a indifferent action sometimes opposing from different CFE local agencies, is inferred that a lack of the problem definition was included to important personnel from this company. Its contribution about the internal procedures framework would allow visualizing an informal dedication barrier that required to be considered. A situation also, that in a way was included in the Project design as supposed in both the Component 1: *Institutional Improved legal and regulatory framework for wind energy generation,* as well as in the Component 3: *Wind resources evaluated in the most potential development areas in Mexico and complete feasibility studies for three wind plants.*

It is concluded that in the Logical Framework Approach that was made by the design crew there were incorporated objectives from different problem visualization perspectives, with what was enriched and posed a wider modification theory and with complementary objectives one another; that would allow visualize consistency in its results chain.

Already mentioned above, the proposed indicators in the Logical Framework Approach are, in general, commensurate with the posed objectives and its definition included in both the basic lines as well as the Project goals. Likewise, the verification methods suggested allow the Project crew establishes the posed objectives evaluation and monitoring with a SUCCESFUL approach to the importance, relevance and transparency balance.

In respect to the established proposed for each objective levels are referred punctually and clear which are the critical risks which could impede that the respective activities and components would not be enough to achieve the results "chaining". There is no doubt that some of the assumptions included in the Project design are a specific contribution about the learned lessons from another UNDP intervention. Assumptions that, while the Mexican democratic transition do not complete its maturation, will remain in effect in most of the interventions which involve the three government levels or the CFE.

The Project design and concept is therefore, SUCCESFUL.

Project Design and Concept.					
6. Highly SUCCESFUL	5. SUCCESFUL	4. Moderately SUCCESFUL	3. Moderately None SUCCESFUL	2. None SUCCESFUL	1. Highly None SUCCESFUL

4.1.2 The National Appropriation

The proposed objectives in the Logical Framework Approach clearly respond to some of the outlined strategies in the Development plan. In respect of the Axis 2: *Competitive and employment generator economy. There are:*
STRATEGY 4.1 Promote state policies that encourage the labor relations productivity and the national economy competitiveness to attract investments and generate formal and qualified employment.
STRATEGY 5.1 Integrate a competitiveness national agenda which involve to the three Union Powers, the three government levels and the private sector in order to generate the reform needed and translated them to tangible results in short and medium terms.
STRATEGY 5.2 Design sector agendas for the competitiveness of economic sectors with high added value and technological content, and precursor sectors, as well as the traditional sectors reconversion to generate better paid jobs.
STRATEGY 5.3 Reduce the costs of businesses opening and operation through a regulatory improvement.

STRATEGY 5.5 Deepen and ease the scientific investigation, technological innovation and adoption to increase the national economy productivity.
STRATEGY 9.2 Link together the development and investigation activities with the rural areas needs.
STRATEGY 9.7 Promote the generation of profitable companies in the rural sector.
STRATEGY 11.3 Cooperate with the state governments to implement policies focused in the rural sector.
STRATEGY 13.1 Encourage intergovernmental coordination mechanisms among the different government levels and the same sectors in the state governments and inside the Federal Administration giving more responsibilities and competitions to the counties and states and also allowing them to develop integral actions.
STRATEGY 13.2 Assist to the states and counties in the institutional abilities enforcement and the public servants human crews education, which will allow a better action in all the government levels.
STRATEGY 13.3 Encourage the competitiveness in all the areas with particular emphasis in the most disadvantaged areas, the small and medium businesses and high impact sectors like the touristic and agricultural.
STRATEGY 13.4 Ensure that there is the needed infrastructure so every Mexican may have the adequate Access to the energy, to the regional, national and international markets and to the communications.
STRATEGY 15.9 Develop the required infrastructure to the electrical power service provision with a high level of reliability, making investments which allow attending the demand requirements in the different segments and encouraging the Project developments under the arrangements that are not public.
STRATEGY 15.12 Diversify the primary sources of generation..
STRATEGY 15.14 Encourage the renewable energy sources and biological fuels generating a legal framework to establish the state faculties to guide its aspects and promoting investments which promote the country potential in this matter.
STRATEGY 15.16 Take advantages of the energetic sector investigation activities strengthening the investigation sector institutes, orientating its programs, among others, to the renewable sources development and energetic efficiency.
STRATEGY 15.17 Strengthening the powers of sector regulatory institutions.

Regarding to Axis *3. Equal opportunities, we have:*

STRATEGY 2.5 Take actions to create employment in zones where the expulsion of people is generated, seeking to convert them in inversion receptors.
STRATEGY 15.1 Constitute the attention to the natives in a strategically transversal objective for the Federal Public Administration.

Axis 4. *Environmental Sustainability, we have:*
STRATEGY 5.1 Impulse clearer and friendly technology instruments with the environment among the productive sectors in the country.
STRATEGY 10.1 To promote the efficiency and clean technologies impulse (including renewable energy) for power generation.
STRATEGY 11.1 To promote the inclusion of aspects of climate change adaptation planning and work of the various sectors of society.

Finally, from Axis *5. Effective democracy and responsible foreign policy, we have:*

STRATEGY 7.4 Coordinate the efforts of the Federal Government in the field of international cooperation for development.

The qualification of the National appropriation is then: Highly SUCCESFUL.

The National Appropiation					
6. Highly SUCCESFUL	5. SUCCESFUL	4. Moderately SUCCESFUL	3. Moderately None SUCCESFUL	2. None SUCCESFUL	1. Highly None SUCCESFUL

4.1.3 Those involved participation during the design stage.

Those involved participation in the Project design held at cabinet level with some remote contributions from regional level involved, that is summarized as:
The SENER participation in general terms is Highly SUCCESFUL.
The Oaxaca government state administration participation was SUCCESFUL.
The municipality administrations are inferred as not included.
The CFE participation was marginal; it was contemplated in fact as the assumptions.
The ONG's participation is inferred as not included.
The technologic suppliers are inferred as indirect and remote.

The qualification of those involved in the design stage is then as moderately SUCCESFUL.

Participation of those involved in the design stage					
6. Highly SUCCESFUL	5. SUCCESFUL	4. Moderately SUCCESFUL	3. Moderately None SUCCESFUL	2. None SUCCESFUL	1. Highly None SUCCESFUL

4.2 The Project Implementation.
4.2.1 The Implementation Development.

It has already commented the implemented strategy by the Project management crew before both key circumstances that differed during the Project development, specifically in the Component 2, *Establishment of national and regional abilities to support the development of wind energy as viable supply source for the electricity market.* And despite of the prevalescent circumstances the established goals were achieved in the design stage.

The qualification for the Implementation Development is Highly SUCCESFUL.

The Implementation Development					
6. Highly SUCCESFUL	5. SUCCESFUL	4. Moderately SUCCESFUL	3. Moderately None SUCCESFUL	2. None SUCCESFUL	1. Highly None SUCCESFUL

4.2.2 The Evaluation and Monitoring

The Project components and activities advance and achievement have been reviewed through the Follow up Tools used by the UNDP-CO and the IIE along all the implementation process. These tools include the Annual Project Review, the Project Implementation Reports, the Quarterly Progress Reports and the Annual Operative Program. The comments and data consistency that are consigned are a Project appropriation testimony and then, from the validity of the commitments made.

Since the Project design was raised in general, a clear idea that the variables would be used to define the result indicators. It was the same with the basic lines, the goals and the verification methods.

The timeliness with which the Follow up tools was reported was Highly SUCCESFUL and the reported data were consistent. In the chart 3 is summarized what was reported in its moment with the tools already mentioned.

The Middle Term Evaluation (MTE), mandated by the GEF[1] in its Evaluation Manual was not made as it was suggested because of an external consulting hiring that audit month by month the project development during its last implementation period; this was a reason redundant and inefficient for the hiring and put in practice a Middle Term Evaluation, what was consulted in time and approved by the GEF. On the other hand the Final Project Evaluation was made after one year in respect of what was recommended by the GEF-UNDP[2].

The qualification for those involved participation is, then, Moderately SUCCESFUL.

Participation in Monitoring and Evaluation Implementation

[1] GEF (2006).
[2] UNDP Evaluation Office (2012), p. 4.

6. Highly SUCCESFUL	5. SUCCESFUL	4. Moderately SUCCESFUL	3. Moderately None SUCCESFUL	2. None SUCCESFUL	1. Highly None SUCCESFUL

4.2.3 The Participation of those involved.

In previous sections it is being already said about the participation topic of those involved during the Project implementation, the same that can be summarized as:
In general terms the participation of the SENER, the CRE and the SHCP is highly SUCCESFUL, Relevant and significant.
The participation of government administrations Oaxaca State were from SUCCESFUL to Moderately SUCCESFUL because there was a takeover.
The participation of municipality administrations was from Moderately SUCCESFUL to moderately none SUCCESFUL because there were two takeovers.
There were different instances both cooperative and sub regional during the participation of the CFE; it was from SUCCESFUL to none SUCCESFUL.
There were different instances during the participation of ONG's; it was from SUCCESFUL to none SUCCESFUL.
The participation of the technologic supplier was highly SUCCESFUL.

Chart 3. Summary of what was reported to the Monitoring Tools

Indicator		Basic Line			Goal 2007		ADVANCE				
UNDP ID	Description	Year	Unit	Valor	Valor	June 2005	June 2006	June 2007	June 2008	June 2009	June 2010
	Emission Reduction of GEI (GG)	2005	Mt CO_2 eq						0.34	0.51	1.57
1	The feasibility Studies and the Contest Basis	2005	%	0	100	40	40	100	100	100	100
2	Wind production capacity	2005	MW	1.6	135	0	0	62	164.8		
3	The review of the regulatory framework	2005	%	0	100	90	100	100	100	100	100
4	The Regulatory and legal modification	2005	%	0	100	45	60	100	100	100	100
5	The Promotional Campaign	2005	%	0	100	15	100	100	100	100	100
6	Site preparation, design and Permit	2005	%	0	100	55	90	100	100	100	100
7	The recruitment, construction and testing of vacuum.	2005	%	0	100	5	20	70	70	90	100
8	2 Courses included in the curricula of Technical Institutes.	2005	%	0	100	0	50	100	100	100	100
9	2 workshops imparted at the CERTE	2005	%	0	100	0	0	100	100	100	100
10	1 Manual of Best Practices	2005	%	0	100	0	80	100	100	100	100
11	Wind technology comprehension improvement by all the principal sectors. (1 Seminar)	2005	%	0	100	0	0	50	100	100	100
12	Generic Studies that ease the wind Project process.	2005	%	0	100	0	100	100	100	100	100
13	Generic Studies for La Ventosa (4)	2005	%	0	100	0	75	100	100	100	100
14	Monitoring prospective anemometric installation of 15 stations	2005	%	0	100	0	147	147	100	100	100
15	One year Wind resource evaluation	2005	%	13	100	0	80	100	100	100	100
16	Wind resource assessment, access to wind resource information	2005	Sitios	0	15	0	9	22	100	100	100
17	Three wind Project models, Feasibility studies.	2005	%	0	100	0	50	100	100	100	100
18	Three wind Project models, Contest Basis.	2005	%	0	100	0	10	100	100	100	100
19	Promotion of relevant information for development of wind generation (symposia, seminars, publications, etc.)	2005	Eventos	0	8	0	21	24	26		

Source: Own elaboration with MT data.

The Project made some informative products for diffusion, the same that were known, consulted and at the same time, distributed by those involved to/with other involved, or at least, interested. Local authorities, state and federal public administration staff, teachers, investigators and higher education institute students were included.
As an additional diffusion route it was enabled an electronic access link in a website http://planwindo.iie.org.mx/iieUNDP.htm, this included electronic links to publications, work documents, forums, information notes, etc. In the same website there was free Access to anemometric information in the wind electric potential sites.

It should be mentioned that the informal conversation interaction with those involved was an element that permitted in the long run to generate enrichment synergies that included experience interchange: in administrative issues, identify the reliable local suppliers, technical solutions, etc. The informal transference of the lessons learned by the same projects is one of the elements that have allowed that the area accept the wind electric investments, reduce the learning curves, etc.

The qualification of the participation of those involved in the implementation is then SUCCESFUL.

The participation of those involved during the implementation					
6. Highly SUCCESFUL	5. SUCCESFUL	4. Moderately SUCCESFUL	3. Moderately None SUCCESFUL	2. None SUCCESFUL	1. Highly None SUCCESFUL

4.2.4 Financial Planning

The Project financial budgets and plans were regularly updated in the Annual Operation Programs with a level of disaggregation that corresponded to the Project AML. In the other follow-up tool, the Annual Project Review, there were consigned overall figures.
The chart 4 summarizes the exercised budget by GEF, itemized per Project component, and the distribution of its disposition in the time. There are observable variations that may be appreciated between of the originally proposed in the Document Project and what was exercised by object, they are comprised in a range under the 10%.

Chart 4. Excercised budget by GEF,
Itemized Components
(thousands USD)

Component	ProDoc	2004 Real	2005 Real	2006 Real	2007 Real	2008 Real	2009 Real	2010 Real	2011 Real	2012 Real	TOTAL
Component 1 *The Improvement of institutions*	551	0	164	131	143	17	0	0	0	0.0	455
Component 2 *Establishment of capacities which support the wind generation*	2,637	54	137	127	888	1,152	184	20	1	0.0	2,563

Component 3 *Evaluation of wind resources*	660	274	198	164	63	0	0	0	0	0.0	699
Component 6 *the promotion of relevant information*	30	4	1	18	18	0.2	0	0	0	0	41.2
The administration of the Project	857	113	157	393	140	88	33	0	0	0	924.0
								TOTAL		4,681.2	

Source: Own elaboration with OAP data

In respect of the composition of the source about the total exercised funds in the Project, the same that are itemized in the Chart 5.

Chart 5. Budget executed by funding source.
(thousands, US Dólares)

PROJECT (US$ millions)								FINANCING
		Donation	Loan	Credit	Own Investment	In kind	Total	
A. GEF	Proposed	4.736					4.736	
	Real	4.736					4.736	
B. Co-Financiamiento:								
UNDP	Proposed							
UN another agency	Proposed							
Government	Proposed					2.216	2.216	
Bilateral Donation	Proposed							
Multilateral Donation	Proposed							
Regional Banks	Proposed							
NGOs	Proposed							
Private initiative	Proposed					4.860	4.860	
Another	Proposed							
Total	Proposed					7.076	7.076	
	Actual cumulative 2004							
	Actual cumulative 2005	0.637						
	Actual cumulative 2006	1.580				3.792	5.372	
	Actual cumulative 2007	2.470				3.792	6.262	
	Actual cumulative 2008						7.370	

	Actual cumulative 2009	4.621				3.890	8.510
	Actual cumulative 2010	4.678				3.890	8.568
	Actual cumulative 2011	4.683				1112.490	1117.173
TOTAL FUNDING					Propuesto		11.812
					Real		1117.173

Source: Self elaboration with APR data

The financing approved by GEF was of 4'736,000, the same that has been exercised along the project implementation period.

The Project has contributed with the GOM strategy to impulse the wind electric generation development in the country. The public and private investments at the end of the Project implementation period begin to take the form as wind projects in La Venta area—La Ventosa, the area that the CERTE is located.

The investment projects reached amounts over a thousand one hundred million dollars, which in contrast of the GEF financing, represent a leverage relation of 235:1. Definitively, this suggests that the GEF contribution has an efficient cost relation that may qualify as Highly SUCCESFUL.

4.3 The Results

4.3.1 The impact.

As follows, and with the purpose to accurately evaluate this category, there is a specific description of each one of the goals and the results obtained in each one of the defined indicators in the Project Document.

Development objective: Reduce the Greenhouse Gas Effect Annual Emission in Mexico.

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
The reduction of GG Emission	Mt CO_2 eq / año	0	1.36	1.35 [3]	99.26 %

The Project objective: Reduce the barriers for the wind power commercialization.

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
Feasibility studies and contest basis.	Percentage	0	100	100	100 %
The total capacity of Wind Production	MW	1.6	135	570 [4]	422%

Component 1: The regulatory and legal framework improvement for the wind power generation.

[3] IEA (2012), p.132.
[4] Idem.

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
The review of Regulatory framework	Percentage	0	100	100	100
The Regulatory and legal framework modification purposes	Percentage	0	100	100	100
The promotional Campaign.	Percentage	0	100	100	100

Component 2: Regional and national capacities establishment for the wind generation development.

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
The Site preparation, design and Permit	Percentage	0	100	100	100
The recruitment, the construction and the vacuum tests	Percentage	0	100	100	100
Curriculum included courses in Technical Institutions	Percentage	0	100	100	100
The imparted workshops at CERTE	Percentage	0	100	100	100
The better practices manual	Percentage	0	100	100	100
The wind technology comprehension by every people involved.	Percentage	0	100	100	100

Component 3: Evaluated wind resources and feasibility studies for three wind plants.

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
The generic studies which ease the wind projects process	Percentage	0	100	100	100
The specific Studies for La Ventosa	Percentage	0	100	100	100
Prospective monitoring	Percentage	0	100	100	100
The one year evaluation of wind resource	Percentage	0	100	100	100

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
The wind resource information Access	Percentage	0	100	100	100
The feasibility studies	Percentage	0	100	100	100
The contest basis.	Percentage	0	100	100	100

Component 6: The relevant information promotion, based on proved financial and institutional mechanisms.

Indicator	Unit	Basic Line	Goal	Real 2011	Fullfillment
The relevant information promotion	Percentage	0	100	100	100

All the Project goals have been reached. The results, however, do not reflect the work done by the project implementation crew. It is needed to be said how the timing has been reduced in some of the authorization processes, more than thirty, to invest in the wind electric generation project. Five years ago this regulatory framework, formal and informal, was unthinkable.

4.3.2 Effectiveness

As it was proposed in the last paragraph, the Project reached all the defined goals in the design stage. In the impact terms it is visualized as follows.:
In a short term: The goal is to reduce the GG emission, in respect of the basic scenario, to 4 Mt CO_2 eq / year, amount achieved with an wind electric generation equipments with an installed capacity of 2 MW, this will be reached in 2013, two years before as proposed.

In a medium term: the huge electricity national consumers, the petrochemical, steel and cement, participate in co generation schemes o in the self-supplier. The wind electric projects are contemplated in a self-supplier scheme and participate in companies of steel and most of all in the cement.

Practically, the cement companies have depleted its interest in these projects. Some other consumers are participating already and the growth opportunity, in a medium term, is visualized just in the potential development that offers other areas in the country. The CERTE roll, in this matter, is of strategic character.

An interesting opportunity is explore as alternative for small towns of medium economic development, the distributed Generation. The main advantages of the distributed Generation are:
Lost reduction in the transmission and distributions networks,
Increase reliability in the electric power supply,
The reactive energy control and the voltage regulation in the distribution network,

Greater facility to incorporate generated energy by renewable sources; and,
Capacity release in the transmission lines which feed the distribution area and, consequently, the increase reliability to reinforce the transmission and transformation capacity on the system.

Once more, the CERTE roll, which counts with distributed generation studies, is of strategic character.

In a long term: the development of more wind projects has an important reference in the competence that sustain with the combined cycle plants generation, which use natural gas. The original consideration is that the Price of 1000 cubic feet of this input would be in a range from 4 to 6 USD, current prices on May 2001; it is actually USD2.69, with a variation range from 2.20 to 3.18 USD in a short term, prices on 2012.

Above, of course, makes really competitive the electric power generation with combined cycle plants, which use natural gas, which the Electricity Production Leveled Price is the used reference by the CFE to contract the purchase electricity from energy independent producers, depending to the common interpretation as mandated in the regulation from the Electric Power Public Service. Besides, the fact that Mexico is located in the third global reserve of natural gas in shales; and really close to huge national energetic consumption centers with the main importation points of that input from the USA.

All of which, in this moment, allows to estimate a scenario with less growth rates in the wind elctric investment, from 2014-2016, unless the legal scheme crystallizes with the figure *Cap and Trade*[5], whose regulatory framework is not yet defined in Mexico.

4.3.3 Efficiency

Such as it was already commented in the last paragraph, the leveraging fund that was achieved is in extreme outstanding, 235:1.

In respect of the efficiency with which the GEF fund was used, it is appreciated that the implemented activities correspond in accordance of what was in the budget. In despite of the processes delay, some of them reflect the serious acquisitions procedure and the clear purpose to equilibrate the competitiveness in the price with the quality products delivery.

4.3.4 The global environmental benefits.

The calculation methodology of the equivalent CO_2 emissions reduction, proposed in the Project Document from the POISE 2000-2009[6], contemplates an equivalence of 0.766 Kg CO_2 per KWh of produce electric power. Considering this equivalence number, which corresponds to the national

[5] En este mecanismo se reconocen las externalidades negativas de la generación eléctrica a partir de combustibles fósiles, estableciendo un límite máximo de producción con ese esquema y "negociando", con incentivos fiscales, regulación, etc. la producción a partir de fuentes renovables.

[6] UNDP e IIE (2003), p. 9.

average, it could be said that the GG emission reduction goal for 2011, in respect of the based scenario, has been reached.

Taking into account three factors, however:
The electric power consumption is given first in the closest consumption points from the generation connection point.
Most of the electricity generation centers, in the southeastern consumption from SEN, are hydroelectrically and combined cycle technologies.
The main wind electric generation projects in Mexico, in this stage, are in the southeast.

A *roughly* analysis of what has been said proposed that the real GG emissions reduction equivalence in respect of the based scenario in the southeast projects, is in the range of 0.5 a 0.6 Kg CO_2eq. by KWh[7]. Where it would be concluded, in the facts that the GG emissions reduction reached in 2011 equals to 0.97 ↓MtCO_2/year. However, and even under this consideration, the impact goals proposed for 2015 in the GG emission reductions will be reached ahead of current trends in the short term. Sin embargo, y aún bajo esta consideración, las metas de impacto planteadas para el 2015, en la reducción de emisiones de GEI, serán alcanzadas con antelación de seguir la tendencia actual en el corto plazo.

4.3.5 The contribution to the development capacity.

The Project has been highly successful contributing to develop the regional and local appropriation. A good part of the Project activities were design and increased by a "denoted" demand for the benefits diffusion, acceptance of the project and, why not say it, a channel of dialogue between the parties, etc. There is no doubt that the CERTE construction pretended a number of important repercussions in the results chain for the AML in the area; but, with this success, we conclude that it could not be dimensioned what has been deprecated in the mood and expectative from all the involved.

4.3.6 Sustainability

The Project implementation has among its guidelines to encourage the *Sustainability* about the GG reduction through the wind electric generation national appropriation. This objective has four dimensions, clearly established by the GEF, and include the related aspects with the financing, socioeconomic, institutional framework and environment.

4.3.6.1 Financial Sustainability

This dimension was evaluated contemplating, in a general manner, two elements: in one side the technology assimilation and the human resources development; and on the other, the economic viability of future projects.

In respect of the first point it can be concluded that the collaboration perspectives, local and international, with which the CERTE counts in this moment allow us to provide that even the technology assimilation as the human resources formation have a solid platform which allow ensure the development of these projects with less technical setbacks. It is worth noting in this point, that

[7] En los informes que realiza la CFE para reportar la operación del parque eólico La Venta II al UNFCCC, el factor utilizado es de 0.6257 Kg CO_2 eq por KWh.

are still to be needed Project developers, electrical and electronic engineers who participate in the development of this kind of projects. .

About the future Project viability there were some financial runs with the obtained data from different investors, consigned in the Chart 6.

Chart 6.Investment Assumptions wind power projects.

CONCEPT	VALUE	
The Investment cost	1,500	USD/KW
Generation Capacity	2,000	KW
Plant Factor	39.2%	
Lifetime	30	years
Maintenance costs	0.006	USD/KW
Operation Costs (includes land lease)	0.005	USD/KW
Technological renovation cost	112,500	USD
Year of the update	10	
Equity participation	20%	
Debt	80%	
Term	12	years
Interest rate	7.50%	
Profit participation	10%	
Inciome tax (ISR)	29%	
Build time	2	años
Time for full operation	0.6	años
Sale Price	0.0610	USD/KWh
Short term total cost CFE ($/KWH), South east January 2012	0.1257	USD/KWh

The obtained results are summarized as follows, in terms of the project Internal rate return, after tax payments:

Change in amount of investment	-15%	-10%	-5%	0%	5%	10%	15%
TIR	22.20%	21.06%	20.01%	19.10%	18.18%	17.37%	16.61%

From the previous data the TIR sensivity that is appreciated is practically-1, in respect of the investment amount change. Then, per each percentage point that increase the investment the TIR will reduce, in proportion, a percentage point as well.

Change in the Electricity Sales Price	-15%	-10%	-5%	0%	5%	10%	15%
TIR	15.46%	16.75%	17.92%	19.10%	20.18%	21.28%	22.36%

In respect of the change in the electricity sales Price, the viability sensitivity, measured as TIR, is a Little more but positive, in the case of the Investment amount.

Delay in projects, years	0	1	2	3	4
TIR	19.10%	13.25%	9.04%	5.53%	2.78%

Finally, it is appreciated that the delay in the Project execution has a significant impact in the TIR. Easily to sense subject, if it is taken in account that when a Project do not produce, there will be no income but there will be obligations to pay.

It is worth to mention that if the CFE would by the electricity to the self-supply societies, an equivalent of 70% from its *Short term total cost,* reported to the south east area on January 2012, the TIR would be 28.3%.

However, the above data, some financial institutions have reported that the TIR for these projects in the area, are between 8 and 15%. This, analyzed in a Ex post manner, may be explained fundamentally by the projects common denominator that have been implemented until this date: Delay in the project execution and the operation costs increment. In this last category, during the financial runs proposed made there was considered a 25% overrun with respect of the international average.
It is worth noting at this point that the national bank participation has increased in the funding of these projects. There is no doubt that the incentive has been the fact that the foreign financial institutions have participated with attractive and innovative schemes for the invertors. In the attachment 6 is included a list of all the financial institutes, national and international, that have participated with the loans for the wind generation projects.

Then, the *Financial Sustainability* is evaluated as Probable.

Financial Sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

4.3.6.2 The Socioeconomic Sustainability

The GOM federal administration that is about to finish its term, has fully materialized its decision to impulse the GG reduction in a national level. The established incentives have clear orientation signs to the market, the same that in a global level have had as a result a faster and stable national appropriation.
The answer that some of the state governments have given to this initiative have contributed so the national investors visualize the opportunity to reinforce their regional presence in Social Responsibility terms. Enough to mention, in this regard, that the CRE has wind electric generation projects registered until August 30th, 2012, as follows:

Wind Electric Generation Projects	32	
Nominal Capacity Authorized	3,410	MW
Energy Production Authorized	11,684	GWh
Investment	$6,685.6	USD (Millions)

The investment companies list in wind electric generation projects, with permit given, is shown in the Attachment 7.

Despite of this positive response of the wind electric generation Project investment, the applications to obtain the generations permits with this technology have decreased, in a such manner that are not displayed the investments with implementation beyond 2014. This can be explained as a sign to wait until know if the GOM federal administration, which initiates at the end of 2012, will modify the current legal framework.

Then, the Socioeconomic Sustainability is qualified as Moderately Probable.

Socioeconomic Sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

4.3.6.3 The institutional framework Sustainability.

However all the advance made in the legal and regulatory framework, the appropriation of this generation technology may be weakened if the CFE do not incorporate the socioeconomic aspects of the reference prices, with regional disaggregation as it is mandated in the RLSPEE, to its interpretation from the legal mandate to choose that the "total economic cost in a long term be less". This is precisely, the main Project risk: the CFE appropriation loss, in respect to the wind electric generation for the next federal administration that initiates on December 2012.

So, the Institutional Framework Sustainability is qualified as Moderately Probable.

Institutional Framework Sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

4.3.6.4 The Environmental Sustainability

The wind electric generators operation has taken, like European and North American countries, that some groups warning of the risks increment of birds and bats extinct danger.

In the beginning of Project implementation, the IIE, made seminars to inform to conservation groups, local authorities, academics, etc. In part this contributes to be mitigated the opinion to prohibiting the wind electric generation operation, this extreme position was gaining some followers.

This topic, like many others similar, generates polarized positions. The GOM federal authorities in charge of the ecological topic have permitted these project operations with the commitment from the companies, to implement causalities monitoring in species groups, birds and bats. Some groups have pressured to this monitoring be extended in periods from 15-20 years, but the authorities have circumscribed it to 15 days evaluations, in the results function, to establish new guidelines.

4.3.6.4.1 The birds

In respect to wind projects in the Oaxaca area, during the last public diffusion report about the migratory and resident birds, are mention the number of species found for the different bird categories:

SEASONAL	Number of Species
Resident (all the year)	101
Wintering birds	92
Transients	21
Summer Resident	4
Vagabonds	6

From all the identified species, just 18 are catalogued as protected species[8]:

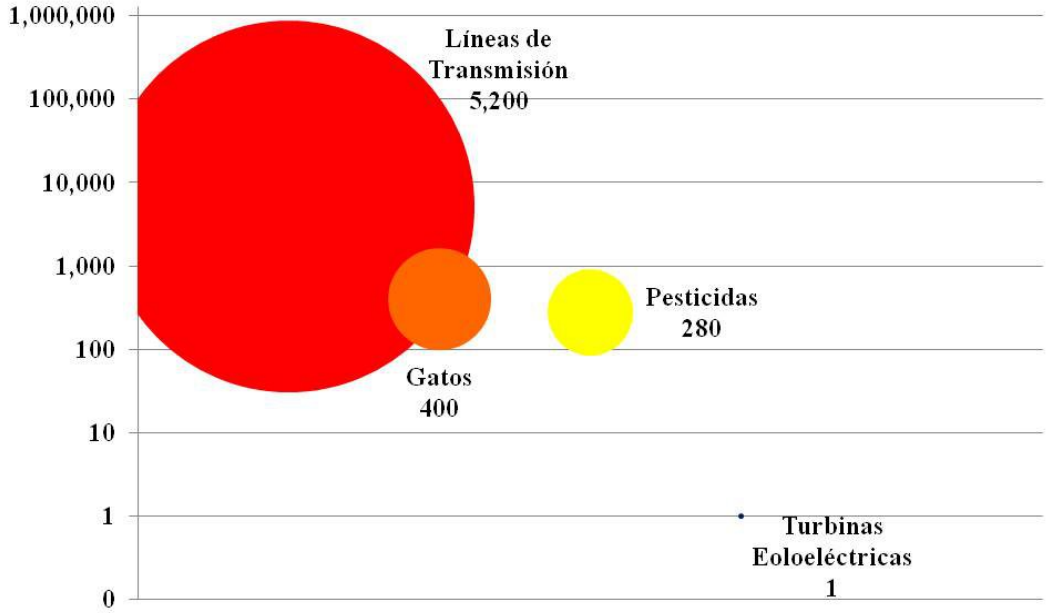
CATEGORY NOM-059-2010	Number of species
Endangered species (P)	1
Threatened (A)	3
Special Protection (Pr)	14 (11 species are predatory)

From the observations made, it is noted that "more of the 99% birds that were observed correspond to 4 species", any of the catalogued under the category *P*, *A* ó *Pr*. In respect of the migratory prey birds: "they commonly fly more than 300 meters high and the collision risks are very low", though is recommended a posterior monitoring to corroborate that what has been seen are part of the normal flight pattern.

When the "Project potential impact" was defined just one species is identified: *Aimophila sumichrasti*, the itsmo oaxacan sparrow. But the menace to this species is not about the flight collision potential, is against the wind turbines blades. The menace has several sources, among of them are the anthropogenic activities, being the main their habitat loss.

Figure 2. The Birds' fatalities proportional distribution

[8] Conforme a la NOM-059-SEMARNAT-2010.



Transmission lines 5,200. Cats 400, Pesticides 280, Wind electric turbines blades 1

Source: Self Elaboration with Awea data.

To this respect it is worth to observe that as revealed in the last promoted congresses by conservationist research and energy generators, the birds' fatalities nearby the wind generation p arks have a similar distribution as is shown in the figure 2.

By itself, the chart is self-explanatory. Per each bird registered fatality in a wind park, the pesticides kill 280 birds, the transmission lines, 5200: and the cats, 400. In this distributional analysis there is not included the collision fatalities, the car collision fatalities, communication towers, etc. which all of them represent approximately 3380 fatalities.

The pesticides action on the birds is not totally studied. But there is evidence that most of the pesticides used in Latin America affect the birds 'central nervous system making them fail, eventually, their respiratory system until they died. The pesticides also, have negative effects on the nesting/hatching success rate.

From all the previous studies that were made in the Oaxaca area, concerning with the birds' fatalities registered in wind parks, in any of the cases is mentioned the toxicology study made into the bodies to determine the pesticide level. Simply, the fatalities were attributed to the wind turbine blade collisions.

The wind electric generation area is plagued with municipal waste dumps. In the same proliferates harmful fauna as rats, cats and dogs. These species include in their daily diet, specially the cats, the birds consumption. Unfortunately, there is no data about the area but, if we consider what has been studied in the north of the country by the *Parques de vida Silvestre de Nuevo Leon* organization, where it has been demonstrated the reduction of some bird species by the cats and the dogs hunting, domestic and wild; it can be said that is the same in the rest of the country and Oaxaca is not an exception.

This phenomenon of illegal hunting, feline and canine, has been taken, in other parts of the world, to promote campaigns about the bird conservation, inviting to keep the referred pets confined. The wind electric parks objectors in Oaxaca and, occasionally, in other parts of the country, have not mentioned any about this topic.

From above it is concluded that there is no evidence in the wind parks in Mexico, which takes to conclude that its operation puts them at risk of extinction to the different birds species, residents and migratory. The ecological authorities and the investing companies, however, have decided maintain their birdlife monitoring programs.

4.3.6.4.2 Bats

There is not a wide variety of studies in Mexico about the relationship between the wind parks operation and the bats wind turbine blade collisions. They are just inferred as causality and the extreme number mentioned are the "killing of 6000 bats in a year" by the Wind Park at La Venta II[9]. These data, invented or fake, are used as a "social" pressure element for pecuniary purposes.

Is until 2007, in an established agreement among SEMARNAT, the CFE and the INE, where is defined a *Wildlife Monitoring Manual (Birds and Chiropteran),* the same that was put in practice since 2008, specifically to the La Venta II park.

In the reports that makes the CFE to UNFCCC, with topics which include the wildlife fatalities monitoring (Birds and Chiropteran) at the La Venta II wind park operation, shown in the Chart 7, it can be appreciated that the parametrical data are 1.15 bat fatalities and 0.35 bird fatalities, both are annualized by NW of the wind electric generation Installed Capacity.

Chart 7. The annual wildlife Fatality (Birds and Chiropteran)
During the operation at La Venta II wind park.

	BATS		BIRDS	
PERIOD	COLLISIONS	IDENTIFIED SPECIES	COLLISIONS	IDENTIFIED SPECIES
2007 - 2008[10]	89	11	43	20
2008 - 2009	145	26	32	16
2009 - 2010	54	16	12	8
PROMEDIO	96	17.7	29	14.7
PARAMETRIC (Fatality/MW year)[11]	1.15		0.35	

Source: Self elaboration with consulted data at http://cdm.unfccc.int/Projects/DB/AENOR1168204945.7/view

[9] Go to http://movil.noticiasnet.mx/oaxaca/general/agropecuarias/118733-exigen-huaves-al-banco-desarrollo-cancelar-credito-para-parque-e

[10] Was not referred methodology applied for this period.

[11] La capacidad nominal de generación de La Venta II es 83.3 MW.

Analyzing the study made at the US, in which are synthesized the monitoring reports of almost fifty installations, in different moments among 1998-2008, there are parametric data: 7.3 bat fatalities and 2.8 birds' fatalities, annualized by NW with wind electric generation capacity.

Even when contrast both groups of parametric data is obtained what has been reported in Mexico equivalents between 13 to 16% of what was reported in the US, we cannot make a conclusion. It should be noted that the monitoring made in Mexico, the same in another wind areas in the world, the community representatives participate, as well as, ecologic authorities, none government organizations, local authorities, etc.

However, there are still some groups that struggle to stop the wind parks operation during the high season of the birdlife migration, and at nights in the rain season to "protect" to the bats.

The agreed monitoring programs stipulate to review the results every five years to define the assertive prevention and mitigation criteria if necessary. The first peer review will take place at end of 2013.

For all these reasons, the environmental sustainability is qualified as Moderately Probable.

Environmental Sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

Viewed as a whole the "dimenssions" described in the previous paragraphs, it can be conclude that the Project Sustainability is Moderately probable.

The Project Sustainability			
4. Probable	3. Moderately Probable	2. Moderately None probable	1. None probable

4.3.7 The Reproducibility

During the implementation the municipal and state authorities from other areas in the country and also in other Central American countries, have expressed their interest to reproduce the Project strategies and activities with the purpose to reduce the GG emission through the provision of incentives to produce wind electric power. To "crystallize" this kind of projects is necessary to consider the following success factors:

The success factors

To develop a regional center of investigation in wind electric power requires not only the technologic knowledge, it is also required a commitment that goes beyond of the labor. Add leadership and passion to spread it to the other crew members to share the same expectative and aspirations.
Contribute to reduce the barriers for the wind electric power implementation in Mexico, has required a decisive commitment and support from the different government agencies; the job done to this respect has paid off and there is still a lot to do.

To know which the regulatory and legal framework is in both, the informal process and the formal, in especial the regional, which allows define the involved, their needs and potential. Only that way it can be made an objectives approach whose logical "chain", the AML, allows ensuring the impact results.
A no minor topic is to impulse the diagnostic in wind potential areas. For such effect is recommended to establish a technical rule that specify the technical characteristics of the anemometric stations that keep pertinent information.

4.3.8 Sinergies with other projects.

This Project financed by the GEF has contributed with the GOM efforts to impulse the regional development and reduce the GG emission through the wind generation Project investment.

Additionally, the Project is contributing with the GEF objectives which has been implementing with the GOM through projects with other agencies like the Development Interamerican Bank and the World Bank.

Among the projects that the BID is administrating in Mexico, there is the *Wind Technologies Development and Promotion in Mexico,* ME-X1011, which counts with a contribution from GEF of 5 million dollars and a national co-financing of 33.6 million dollars. The Project, aproved in May 2012, has as a purpose to develop and certified the Mexican Wind Machine, the same that it is supposed to operate in the wind regime Class IA, which is the typical, found in the Itsmo de Tehuantepec area. This development will allow covering, at least, 20% of the equipments which are estimated to come into operation in Mexico to cover the electricity demand in the Distributed Generation modality.

The Project will be developed by the IIE as the implementing agency. This assignation sustain among other points, described in the Project document, by the granted experience by the IIE in the Distributed Generation, the need to develop the local market of wind electric generation manufacturing, the IIE ability to execute this kind of projects, sustained mainly in its project participation part of this Final Evaluation.

The World Bank, on its part, is administrated with GEF funds in Mexico dedicated to the renewable sources energy development. Out among other projects is the *Long term renewable Energy development Project.* This Project identified as P077717, has as the purpose to support Mexico to stimulate and accelerate the renewable sources energy market commercialization to reduce the GG emission.
The Project is contemplated in two stages: In the first is constituted the Technical Assistance for the development about a system stimulation model which contemplates different sensitivity variables centered in it, public policies development, technical regulations establishment, impulse of a generation Project by an Independent producer and the UNDP complementary activities coordination. In this point is noticed, the complementarily monitoring and the lessons learned internalization that the Project could have in this Final Evaluation. All of it that is going to be used as a "catalyze" in the second stage of the Project, which include to give a monetary incentive to the Independent Producer for the contest wind Project, by KWh delivered by SEN.

The document Project, as well, notices the IIE participation as a key actor to the Project implementation and development.

In summary, the development of this Project has complementarities with other GEF projects developed in Mexico and its lessons have been incorporated, also, to the design and the

implementation correction of other projects. All this will take to Mexico to GG emission reduction levels which will place it as leader among all the integrated countries as no-members in the Attachment I of the Framework Convention for the United Nations climate change.

5. Conclussions

The Project, in spite of the federal, state and municipal public administration changes, the reduced communication and cooperation among the federal agencies that the country lived at the end of 2006 and the beginning of 2007; the delay in the delivery results, reached SUCCESFUL performance levels and lessons learned that will serve as platform to structure the future projects with more assertiveness.

Its contribution to identify the main “bottlenecks” from the regulatory and legal framework, allowed to “exploring” the opportunity areas with which the modification initiatives were impulse and designed to that regulatory and legal framework.

5.1 Direct Results

Are noticed as direct results, attributable to the Project execution, the following:
The implementation of alternative solutions to the attainment of the Project key products: the land donation, technologic supplier’s development, collaboration agreements with wind parks operators and technicians, technological collaboration agreements with academic institutions, etc.
Effective mitigation of risk to stop growth of the wind power generation projects by an alleged threat of extinction of wildlife, birds and chiropteran wildlife, resident and migratory in the Ithsmus of Tehuantepec area.
The IIE positioning and enforcement as an actor and important referent in the national agenda development to energetic topics, in special the ones referred to the power generation technologies use through renewable sources.

Complementarily, with the project "cascade" of GEF in Mexico to reduce GHG generation through environmentally friendly power generation.

5.2 Indirect Results

At the same time, the Project has contributed, contributing as an indirect way to the decided action of the SENER, The CRE and the SHCP to:

Reduce the authorization times in the wind electric projects. This was achieved promoting the contract models of the Interconnection Service for collective sources of renewable energy or efficient cogeneration collective systems in short term, 2004;
Count with a depreciation policy accelerated for friendly environmental investments, 2004;
To Impulse the renewable Energies Exploitation Law and the Energetic Transition Finance, 2008; established some mitigation laws, in respect of the based scenario for the energy production, in the Special climate change program, 2009;
Established the Special Renewable Energies Exploitation Program goals, 2009;
Define the national electric system interconnection general rules for generators or concessionaries with efficient generation or renewable energy sources, 2012;
With the CRE collaboration define the Interconnection Contract Model for electricity generation plants with renewable sources, CIFER;
With the CONAE collaboration, make the “Management Guide to implement an electric Generation Plant which uses renewable Energy in Mexico”;
Constitute the Mexican Official Regulation Project, NOM-S/N-SEMARNAT-2012, in which will be established the technical specifications for the environment protection during the site selection

and preparation, construction, operation or wind electricity facilities abandonment in low environmental impact areas;
The Interconnection general rules drafting to the national electric systems for generators and concessionaries with renewable energy or efficient generation resources, etc.

No doubt that there is still a lot to do, but the open opposition or slowness that existed in different fronts of the three government levels; federal, state and municipal, have changed completely in a few years. Reduce these barriers is a task that is part of the energetic development challenge with the public officials that will begin their management at the end of this year.

The impact goals of the Project as it was designed, in the worst scenario, will be reached with a delay of a couple of years. We will have to wait to know the resultant regulatory framework of the climate change General Law, issued on the past June.

The fixed goal for the 2015, however, to count with an installed electricity production capacity with wind generation equivalent to almost 2,000 MW; will be reached at the end of 2013.

The Project qualifications, its design and results are summarized in the next chart:

Specific elements identified by GEF-UNDP	Asssigned qualification in terms on the results achieved
The Project Formulation	SUCCESFUL
Concept and Design	SUCCESFUL
National Appropriation	HIGHLY SUCCESFUL
Those involved Participation	MODERATELY SUCCESFUL
Project Implementation	SUCCESFUL
Implementation Development	HIGHLY SUCCESFUL
Monitoring and Evaluation	MODERATELY SUCCESFUL
Those Involved Participation	SUCCESFUL
Results	HIGHLY SUCCESFUL
The objectives Achievement	HIGHLY SUCCESFUL
The Project Global Qualification	SUCCESFUL

Then, the results achieved by the Project, with the impact that is visualized in a short term, allow us to qualify the overall performance as SUCCESFUL.

6. The Lessons Learned

The social inclusion in any Project faces even expected conditions as well as the no contemplated; at the same time, it has expected effects but, also, not expected. Here are summarized these elements with the purpose of incorporate this experience in the future projects design and implementation. The approximation used is the generally accepted in the United Kingdom public organizations.

6.1 The fulfillment insertion objectives of the Project.

The design of the Project was simple, logic and flexible, which facilitated the suitability of time and the immediate goals achievement to the conditions that circumscribed the implementation. The success in a Project, greatly, is ensured since its design. The knowledge, the experience, and the peer agreement, of those who design the Project, allowed to contribute a development scheme with strategically direction, with specific and clear goals, this facilitated its implementation.

Ensure, since the design, the participation of all the involved in the Project implementation. Every Project has a risk that any of the involved in the implementation skip their participation, and this could increase the costs and the expected times for execution; or even, impede the project success.

The Project implementation suffered a proactive participation, in a regional level, from the CFE, which led to delays in one of the projective objectives: the CERTE to SEN interconnection..

The implementation of a Project in a time frame which exceeds the management periods from the local public administration must include an extra period of time to "mitigate" the deadlines that are increased because of the regulatory procedures of change or the accumulation of applications to process. About future interventions, is recommended that when the implementation development of a Project is in the middle of a federal, state or municipal administration change will be included an extra time margin which allows to mitigate the laxity impact that comes with these processes, being for delay in the application course, procedures of change, etc.

To invest in the Itsmo de Tehuantepec requires constituting, in the Project design, some options about the acquisition of susceptible lands for the implementation. The lack of instruments which allow to define the tenancy, legal and technical, of the land, in the state of Oaxaca, proven by the complaint of the investors and the wind project developers in the Itsmo de Tehuantepec area, and potentially could be repeated in other parts of the country, was a real headache for the project implementation. This uncertainty has contributed, with other regulatory elements, for all the wind electric investment projects in the Itsmo, at the moment, have incurred in lags in its boot that goes from one until four years.

Particularly, the Project implementation had a one year lag because there were not contemplated different options for the land acquisition. In a way that, when the wished option was lost it was necessary to dedicate time for searching, process an acquisition of the new land alternative.

Use the services and programs offered by other government agencies. In respect of the last point, was observed that the Procuraduria Agraria, counts with a Program "Fomento a la Inversión en la

Propiedad Rural" (FIPP)[12], its purpose is to "go along with" not only with the land holders also the investors, all along of a process which structure is based on the common elements search for the development, to find the association ways which allow, so the land holders do not translate the domination of their lands, and the investors productive union.
From the last nineteen authorized projects in the Itsmo area, just five applied for the FIPP services. It is worth to mention that three of these projects were the same members from the agricultural nucleus who applied for the PA intervention.

The lack of Human resources for the implementation of a Project increases the cost of it. It has been typical that some of the people in the area express that the wind projects do not generate employment for the area; and, on the other hand the investors emphasize that they have had to bring people from other areas of the country. In a strict sense they are talking about the same problem: There is a lack of Human Resources in the area.

The problem is common in many areas of the country. The best prepared people, the ones that may be integrated to the production chains secondary and tertiary, search for opportunities in areas where they can take advantage of their capacity and, that way develop their potential.

The wind projects require in their employment staff, mostly, college graduates in mechanical engineer, electric and systems. In the Project implementation it was necessary, because the absence of candidates in the area, to take people from the center of the country. This involved costs not contemplated in the Project design.

The components with high technological content have prices and times subject to economic cycles. In the Project developments, and in special the stages that goes from the basic engineering development to the construction stage, it is necessary to identify those elements that require a periodical monitoring, to ensure that the costs, quality and delivery times be maintained in the planned range. There are going to b especial cases, also, which require maintaining updated information in respect of the macroeconomic environment scenarios, co*mmodities* and *specialties* prices, exchange rates, etc.

The saturation of manufacturing applications of wind electric generation in the world market, led to the implementation of the wind electric generation had a delay for more than a year.

6.2 Extension of Project impacts.

Take advantage of the "spaces" that are opened by the oppositions and detractors action for the community support generation. All Project implementation will have opposition. There is opposition because is perceived a potential affectation, real or fake, for particular or collective interests. Always those opposition expressions are manifested, especially in massive diffusion

[12] La lección, para la PA y otras instancias gubernamentales, es que requieren incrementar la difusión de sus programas y su presencia en foros de inversión y de promoción económica regional, entre otros.

forums as radio programs, television, council meetings, local public administration accountability events, etc., there is a great opportunity to transmit the direct and indirect benefits of the project insertion, facilitate the sustain debate in data "rough" and open the ways to the constructive social negotiation

When the chance was given to introduce the purpose of this Project, received the community acceptance and appropriation. It is worth to mention that the inner relation that has been generated with the regional scholar community, not just with the higher education institutions but also with the elementary and middle age schools, have contributed that the community accept better the wind electric investment projects. This has eased the way to new investments.

The opportunity generation for the cooperation networks creation.
In the projects implementation tend to be present unique situations and no contemplated, simply because there is not previous similar experience with other projects. So, the Project implementation had to face situations that the CFE had not contemplated, and when "the road was open" have motivated to other developers to consult, formal and informal, as it was made by the project crew to solve the procedures, solve the technical problems, etc. All this have contributed to some technicians and wind electric park operation companies center in the CERTE the ability to call for the diffusion of technical and no technical topics searching for common solutions.

6.3 Status Modification

Take advantage of the acquired lessons and from other projects for the new Project design. This is a Perogrullo truth that, frequently and unfortunately, is forgotten to apply. In the design Project for the *Mexican Wind Machine,* the IIE undeniably has contemplated some of the lessons learned so that in its implementation will have fewer uncertainties.

The Best Practices document elaboration. When there is a certainty that a Project will be reproduce in different occasions, it is mandatory to elaborate a document that constitute which were the Best Practices; that is to say, which decisions allow to influence in the circumstances and which elements ensure the efficiency and quality of the objective that led to the success of the project. The document concept and design must be guide considering that this will be a guide, frequently consulted, for the new wind electric projects investors or academics interested in the topic.

7. Recommendations

It has been commented that, in regulatory terms, there is still a lot to do. Some of the investors and academics in Mexico have contributed to the need to ensure the clear "game" rules, which allow to plan in a long term, especially in a strategically topic for any country: The energy generation and transmission..

Some of the specific points in which are necessary to keep working on are:

That the strategic plan of the transmission and distribution in the National Electric System is updated, with regional disaggregation, and is diffused by the CFE or SENER.
That the academics, SENER, CFE and all the important people involved agree in a methodology to calculate both the electricity generation costs with the different energy sources and the different technologies, as well as the Electricity Production Leveled Price with regional disaggregation.
That the calculation defining the charge per transmission is maintained in the regional fee scheme

Lines above was explained how in the medium term the wind electric investments will be affected by the electricity generation competence with combined cycle technologies, which consume natural gal. However, it is necessary that Mexico, as Europe, China and India have done, explore the alternative, for small towns of medium economic development, of the Distributed Generation.
The main advantages of the distributed generation are:
Loss reduction in the transmission and distribution networks,
The increase on the reliability of the electric power supply,
Reactive energy control and voltage regulation in the distribution network,
Ease the incorporation of renewable sources generated energy; and
Capacity release in the transmission lines which feed the distribution area and,
Consequently, increase on the reliability to reinforce the capacity of the transformation and transmission system.

Finally it is recommended to elaborate a document which updates the Better Practices in Mexico for the electric power production Project development with wind generation which emphasize these learned lessons and include, like in other countries, a "prontuario" which describe in a simple way the processes, procedures and terms that involves a Project process of this nature.

Would be convenient that this document of Better Practices, as well as other agencies in Mexico do with resources like mines or forest, include as minimal elements: the breakdown, with matrix analysis tools, the identification of wind potential areas; juridical certainty in land ownership; the proximity of consumption areas (housing, industrial, etc,); as well as the capacity and generation prospective, electric power transmission and consumption, etc.

8. Anex

Anexo 1 Terms of Reference

23 de agosto de 2011

Solicitud de Cotización para Servicios de Consultoría Externa.
Concurso: RFQ-61-2011

Fecha límite para recepción de ofertas:
A más tardar a las 23:59[1] horas del 4 de septiembre de 2011.

-Posición: Evaluación Final del Proyecto "Plan de acción para eliminar barreras para la implementación en gran escala de la energía eólica en México".

-Proyecto: 00013582: "Plan de acción para eliminar barreras para la implementación en gran escala de la energía eólica en México".

Objetivo: El objetivo general de la Evaluación Final, es la de analizar la implementación del proyecto, revisar logros en cumplir con su objetivo y sus resultados esperados. Esta evaluación establecerá la relevancia, ejecución y éxito del mismo, incluyendo la sostenibilidad de los resultados. Esta evaluación también recopilará y analizará lecciones específicas y buenas prácticas respecto a las estrategias utilizadas y los arreglos de implementación, que pueden ser relevantes para otros proyectos en el país y en otros países del mundo

-Dirigida a: Personas Morales (organizaciones) con experiencia en evaluación final de proyectos.

Favor de enviar su propuesta **debidamente firmada** en formato electrónico (pdf, tiff, etc.) al correo electrónico rm@undp.org con copia para licitaciones@undp.org con el título: **Oferta RFQ-61-2011.** También puede entregar la documentación en sobre cerrado, en horario de 9 am a 17 horas en: Montes Urales 440, piso 1, área de registro. Colonia Lomas de Chapultepec. 11000. México, DF.

Cualquier duda respecto a la presente convocatoria deberá enviarse a los correos electrónicos señalados a más tardar **el 30 de agosto de 2011.** Las respuestas o modificaciones, se publicarán en la página Web del PNUD a más tardar **el 31 de agosto de 2011.**

A. ANTECEDENTES

La política de monitoreo y evaluación (M&E) de PNUD/GEF

La política de monitoreo y evaluación (M&E) de proyectos del PNUD /GEF tiene cuatro objetivos:

1) Monitorear y evaluar resultados e impactos;

[1] Toda referencia horaria, se hace con base en el **Tiempo Oficial del Noroeste** de los Estados Unidos Mexicanos, de acuerdo al Centro Nacional de Metrología: http://www.cenam.mx/hora_oficial/

2) Proporcionar elementos para la toma de decisiones y la realización de enmiendas y mejoras necesarias;

3) Promover la responsabilidad en el uso de los recursos;

4) Documentar, retroalimentar y difundir las lecciones aprendidas.

Para asegurar la efectividad del M&E de los proyectos, se utiliza un conjunto de herramientas aplicables en forma continua durante la vida del proyecto, por ejemplo: monitoreo periódico de indicadores; revisiones de medio término; informes de auditorías y evaluaciones finales.

Objetivos del Proyecto

El documento de apoyo al proyecto (Prodoc) 00013582 denominado "Plan de acción para eliminar barreras para la implementación a gran escala de energía eólica en México", fue firmado en noviembre de 2003 por el Instituto de Investigaciones Eléctricas (IIE), por el Representante Residente del PNUD, y por el Director General de Cooperación Técnica y Científica de la Secretaría de Relaciones Exteriores, con una aportación del GEF PNUD-GEF por US $ 4,736,000.

El proyecto inició sus actividades el 1º de enero de 2004, estimando una duración inicial de dos años para la fase I. Sin embargo, de acuerdo con la revisión sustantiva del mes de noviembre de 2008, se amplió la duración del proyecto a diciembre de 2010, debido a múltiples contratiempos relacionados con largos tiempos de respuesta y/o dificultades administrativas en materia de trámites oficiales para la construcción y puesta en operación del Centro Regional de Tecnología Eólica (CERTE).

Este proyecto tiene como propósito, reducir los principales obstáculos que influyen en el desarrollo de la generación eololéctrica en México y contribuir a facilitar un mercado sustentable de energía eólica en México.

Dentro de los objetivos específicos del proyecto se encuentran: mejorar el marco institucional, legal y regulador de referencia para la generación de energía eoloeléctrica en México, aumentar las capacidades nacionales y regionales establecidas para dar soporte al desarrollo del viento como una fuente viable de suministro de energía dentro del mercado nacional, evaluar el recurso eólico en sitios prometedores del país, realizar estudios de viabilidad para tres plantas de energía eólica; así como promocionar la información relevante del desarrollo de energía eoloeléctrica en México.

Se espera que al final del proyecto haya un gran avance en las condiciones necesarias para el desarrollo eoloeléctrico en México, como resultado de las acciones emprendidas durante su implementación en conjunto con las acciones de otros actores nacionales e internacionales.

Los resultados esperados son los siguientes:

1.- Análisis y propuesta de mejoras al marco legal, regulador e institucional que influye en la generación eoloeléctrica en México.

2.- Desarrollo de capacidades para la producción de energía eólica dentro del mercado energético nacional.

3.- Evaluación del recurso eólico en sitios prometedores de México a través de la instalación de estaciones anemométricas.

4.- Llevar a cabo una serie de actividades encaminadas a la promoción del desarrollo eoloeléctrico y de sus beneficios potenciales.

5.- Involucrar actividades relacionadas con la operación de la unidad de coordinación.

OBJETIVOS DE LA EVALUACIÓN

La Evaluación Final (EF) es un requisito para los proyectos del PNUD y el FMAM y por lo tanto es iniciada por la Oficina de País del PNUD México. Esta evaluación se llevará a cabo de acuerdo a las guías, reglas y procedimientos del PNUD y del FMAM.

El objetivo general de esta Evaluación Final es la de analizar de manera objetiva la implementación del proyecto y los logros, resultados, impactos alcanzados (Fase 1). Esta evaluación establecerá la relevancia, ejecución y éxito del proyecto, incluyendo la sostenibilidad de los resultados y recopilará y analizará lecciones específicas y buenas prácticas respecto a las estrategias utilizadas y los arreglos de implementación, que pueden ser relevantes para otros proyectos en el país y en otros países del mundo.

Los principales actores de esta evaluación son:

- Secretaría de Energía (SENER), Es la institución encargada de establecer las políticas relacionadas con la energía en el país. La Subsecretaría de Planeación Energética y Desarrollo Tecnológico se encarga de la formulación e implementación del Programa Especial para el Aprovechamiento de las Energías Renovables.

- Comisión Federal de Electricidad (CFE). Es el organismo público federal encargado de generar, transmitir y distribuir la energía eléctrica en México. La Unidad de Nuevas Fuentes de Energía se encarga de formular y proponer los proyectos relativos al aprovechamiento de las fuentes no convencionales de energía.

- Comisión Reguladora de Energía, (CRE) Tiene la misión de regular de manera transparente, imparcial y eficiente las industrias del gas, de los refinados, derivados de hidrocarburos y de electricidad, generando certidumbre que aliente la inversión productiva, fomentando una sana competencia, propiciando una adecuada cobertura y atendiendo a la confiabilidad, calidad y seguridad en el suministro y la prestación de los servicios, a precios competitivos, en beneficio de los usuarios

- Gobierno del Estado de Oaxaca. Secretaría de Economía. Dirección de Energías Renovables. Se encarga del desarrollo de proyectos de energías renovables en el estado de Oaxaca.

- Instituto de Investigaciones Eléctricas (IIE). Es el organismo público federal encargado de promover y apoyar la innovación mediante la investigación aplicada y el desarrollo

tecnológico con alto valor agregado para aumentar la competitividad de la industria eléctrica y otras industrias con necesidades afines..

• SEER (Servicios en Energías Renovables). Es una empresa mexicana que está desarrollando un proyecto eoloeléctrico de 160 MW en el estado de Tamaulipas. Se realizaron estudios que dieron origen a la formulación del proyecto.

• Servicios Industriales Peñoles. Es una empresa que está desarrollando un proyecto eólico en el Istmo de Tehuantepec. Se realizaron estudios que contribuyeron a la la toma de decisiones del proyecto.

• Eléctrica del valle de México.- Es una empresa que desarrolló un proyecto eólico en el Istmo de Tehuantepec y que tiene experiencias muy amplias – desde hace más de 20 años – en el desarrollo de proyectos eólicos en México – y las barreras al respecto.

• Eoliatec de México.- Es una empresa que está desarrollando proyectos eólicos en México y que tiene experiencias muy amplias con relación a las barreras para el desarrollo eoloeléctrico en México.

Favor referirse a la Sección 7 para más detalles respecto al alcance de esta evaluación.

B. RESPONSABILIDADES.

Se espera que el equipo de evaluación entregue los siguientes productos:

1. Informe pre-eliminar de la evaluación.
2. Informe final preparado por el líder del equipo consultor con los insumos del equipo consultor.

El informe de evaluación contendrá las secciones descritas en el formato del reporte de evaluación detallado en la sección 7 de estos términos de referencia.

El Reporte de Evaluación debe ser enviado electrónicamente a la Oficina de País del PNUD (CO según sus siglas en inglés), a la Oficina Regional de Coordinación del PNUD-FMAM (RCU, según sus siglas en inglés) y al equipo del proyecto en un plazo no mayor a las 2 semanas luego de finalizada la misión. Las partes revisarán el documento y entregarán observaciones y/o comentarios al equipo de proyecto en un plazo no mayor a 1 mes luego de entregado el reporte. El/los evaluador/es considerarán los comentarios para incluirlos en un reporte final que debe ser entregado a más tardar 1 semana luego de entregados los comentarios. En caso que haya discrepancias entre las impresiones y conclusiones del equipo evaluador y las partes mencionadas arriba se debe incluir un anexo al final del documento explicando estas discrepancias. La UNDP-GEF- RCU y la UNDP-CO.

METODOLOGIA DE LA EVALUACION

La evaluación se llevará a cabo de manera participativa, ya que el propósito principal de la evaluación es mejorar los proyectos. Por lo tanto, todos los participantes deben entender e identificarse por completo con los informes de evaluación.

La evaluación iniciará con una revisión de la documentación básica clave del proyecto, siendo las principales fuentes escritas de información para la evaluación, las que se describen en el Anexo2.

También se debe contemplar entrevistas presenciales y virtuales con todos los involucrados, incluyendo personal clave que ha colaborado y/o participado en algún momento en el desarrollo y ejecución del proyecto. Se debe llevar a cabo una visita de campo al CERTE, con el fin de observar directamente algunas de las actividades del proyecto.

Se solicita que el equipo evaluador presente la metodología que propone para la realización de evaluación, la misma que será discutida previamente para crear un balance entre la información escrita, entrevistas y visita de campo.

Cualquier cambio en la metodología que se apruebe debe estar en línea con los criterios internacionales, normas y estándares para los profesionales adoptadas por el Grupo de Evaluación de las Naciones Unidas y debe ser avalado por la Oficina de País del PNUD antes de ser implementado.

i) Revisión de documentos. La lista de documentos a revisar está incluida en el Anexo 1. Todos los documentos serán entregados al equipo evaluador por la Oficina de País del PNUD y por el Equipo del Proyecto. El equipo del proyecto y la Oficina de País del PNUD prepararán una nota de cada documento que describa la importancia relativa del mismo y las secciones claves donde el evaluador debe poner especial atención.

ii) Fuentes de información. El/los evaluador/es deben consultar todas las fuentes relevantes de información que incluyen, entre otras: La política de evaluación del PNUD y el FMAM, el documento de proyecto, minutas y decisiones del comité directivo, presupuesto del proyecto, planes de trabajo, reportes de progreso trimestrales, reportes anuales (PIRs), archivos del proyecto, Guía de Gestión de Proyectos PNUD, legislación nacional relevante al proyecto y cualquier otro material que pueda ser de utilidad. El líder del proyecto realizará una presentación con las principales lecciones y logros del proyecto.

- Funcionario que designe la Dirección de Electricidad de la Comisión Reguladora de Energía
- Funcionario que designe la Subsecretaría de Planeación Energética y Desarrollo Tecnológico de la SENER
- Ing. Roberto Cadenas Tovar / Comisión Federal de Electricidad
- Lic. Ricardo Díaz Oropeza / SEER S.A, de C.V.
- Ing. Víctor Tamayo / Eléctrica del Valle de México
- Ing. Oscar Galindo / EOLIATEC de México
- Lic. Claudia Grayeb Bayata, Directora General Adjunta para América del Norte, Asia Pacífico y el Caribe, SHCP
- Evaluar con la Comisión Reguladora de Energía (CRE) el apoyo que brindó el proyecto con respecto a estudios para otorgar crédito por capacidad.
- Evaluar con la SENER la representatividad de información sobre la medición del potencial eólico.
- Evaluar el desarrollo de capacidades técnicas en la región del CERTE (posibilidad de hablar con técnicos capacitados).

iv) Visita a campo y al Proyecto.
- Instituto de Investigaciones Eléctricas (IIE), Cuernavaca Morelos
- Centro Regional de Tecnología Eólica (CERTE), Juchitán, Oaxaca (máximo 3 días)

EQUIPO DE EVALUACIÓN

El equipo de evaluación se conforma por dos consultores (uno internacional y otro nacional). El perfil de los consultores deberá apegarse a profesionales con un amplio rango de destrezas y conocimientos,– experiencias analítica y de evaluación de proyectos, habilidades en aspectos técnicos relacionados con energía renovable, asuntos ambientales, y de la vinculación de todo esto con el ciclo de políticas públicas del sector energético/ambiental. Los evaluadores deberán también tener un conocimiento en las estrategias y políticas de FMAN.

El equipo mínimo requerido para la evaluación consistirá en un Coordinador del Equipo que evalúe los logros y un consultor técnico que evalúe la implementación. Los consultores podrían ser internacionales y/o nacionales y podrán pertenecer o no a la misma organización. El soporte administrativo y logístico que se requiera será brindado por el Proyecto.

El consultor en evaluación de logros será el líder del equipo y el responsable de presentar el informe de evaluación. Como tal, el líder coordinará con el otro miembro del equipo para definir la metodología de trabajo y el cronograma de sus insumos para el informe y de las revisiones finales. La contratación de estos consultores será financiada por el presupuesto del proyecto.

1.1 Coordinador del Equipo Internacional (Team Leader): Será responsable de la evaluación de los resultados del proyecto, estará a cargo de la evaluación global y preparará el informe final.

El consultor estará a cargo de:

- Evaluar el diseño del proyecto, cumplimiento del diseño en la ejecución del proyecto y su avance hacia los objetivos establecidos.
- Evaluar técnica y económicamente los resultados del proyecto.
- Evaluar aspectos de sustentabilidad, apropiación, monitoreo y evaluación, eficiencia, consecución de impactos, sostenibilidad financiera y capacidad institucional, entre otros.
- Evaluar la capacidad de ejecución de las distintas instancias del proyecto, revisando detenidamente la capacidad de llevar a cabo sus responsabilidades específicas.
- Evaluar cómo se relacionan entre sí las diferentes instancias, siempre manteniendo un definición clara de los roles y funciones específicos.
- Compilar y editar los insumos del equipo de evolución y preparar conjuntamente los informes finales.

Perfil Requerido

- El evaluador deben estar calificado en áreas de ingeniería, ciencias; mínimo con post-grado o maestría en disciplinas relacionadas con energía y medio ambiente, planificación y/o gerenciamiento de proyectos.
- Tener amplia experiencia (de al menos 10 años) en temas relacionados con energía, de preferencia en energía eólica.
- Mínimo cinco años de experiencia en la supervisión/ coordinación/gerencia de proyectos de infraestructura y desarrollo, y habilidad para coordinar actividades que involucran instituciones gubernamentales, gobiernos e instituciones locales, organismos multilaterales de desarrollo, ONGs y subcontratistas/consultores profesionales.
- Se dará preferencia a consultores con conocimientos de monitoreo, seguimiento y evaluación de proyectos aplicados por el FMAM y/o PNUD.
- Dominar la metodología del marco lógico y tener conocimiento sobre organizaciones gubernamentales, privadas y no gubernamentales relacionadas con el sector de energía renovable.
- Dominio del español y del idioma inglés.

4.2 Consultor técnico nacional: Será responsable de la evaluación de la gestión del proyecto

El consultor estará a cargo de:

- Evaluar aspectos institucionales y de gobernabilidad del Proyecto.
- Evaluar los arreglos gerenciales de los aspectos humanos y financieros.
- Evaluar la responsabilidad en el uso de los recursos del proyecto.

- Evaluar el cumplimiento de las normas y procedimientos del sistema administrativo, financiero y reportes del proyecto, verificando que estén conformes con las reglas financieras y regulaciones del PNUD y FMAM.
- Además puede aportar insumos relevantes a la evaluación del desempeño y de los logros.
- Recopilar documentación básica, preparar reuniones, organizar entrevistas, identificar individuos claves, ayudar con la planificación y logística, entre otros.

Perfil Requerido

- El evaluador debe estar calificados en disciplinas relacionadas con administración economía, administración y gerencia de proyectos.
- Tener amplia experiencia (de al menos 10 años) en administración, gerencia y reportes de proyectos similares en cuanto a temática, magnitud y complejidad.
- Tener conocimiento de las reglas financieras y regulaciones de UNDP y/o del FMAM.
- El evaluador deberá tener experiencia analítica y de evaluación de proyectos; dominar la metodología del marco lógico y tener conocimiento de manejo adaptativo de proyectos.
- Será deseable que el evaluador tenga habilidades en aspectos técnicos relacionados con energía renovable, en asuntos ambientales, así como experiencia con asuntos de desarrollo social y económico, vinculado con el ciclo de políticas públicas del sector ambiental.
- Dominio del idioma Español y suficiencia del Idioma Inglés.

Como parte de su propuesta técnica, los miembros del equipo de consultores deberán incluir su curricula vitae demostrando los elementos señalados en los puntos antes mencionados. Si en forma posterior al proceso de selección existiera un cambio en algún miembro del equipo, este deberá solicitarse por escrito al comité de selección incluyendo el currículum correspondiente, mismo que deberá cubrir al menos las mismas capacidades y experiencia de aquel a quien sustituye.

El Comité se reserva el derecho de aceptar o rechazar esta solicitud y el consultor líder del equipo deberá encontrar un sustituto adecuado que cumpla con el perfil, sin que ello altere el calendario previsto y sin costo adicional para el proyecto o sus miembros. Si esta situación no fuese resuelta en su oportunidad, el Comité dictaminará el procedimiento a seguir y las sanciones a aplicar.

4.3Principios y Premisas Éticas de la evaluación

La evaluación se llevará a cabo de acuerdo a los principios y estándares éticos establecidos a continuación:

• Anonimato y confidencialidad.- La evaluación debe respetar el derecho de las personas a proporcionar información asegurando su anonimato y confidencialidad.

- Responsabilidad.- Cualquier desacuerdo o diferencia de opinión que pudiera surgir entre EL CONSULTOR o entre estos y los responsables del Proyecto, en relación con las conclusiones y/o recomendaciones, debe ser mencionada en el informe. Cualquier afirmación debe ser sostenida por el equipo o dejar constancia del desacuerdo sobre ella.

- Integridad.- El evaluador tendrá la responsabilidad de poner de manifiesto cuestiones no mencionadas específicamente en el los TOR, si ello fuera necesario para obtener un análisis más completo de la intervención.

- Independencia.- El consultor deberá garantizar su independencia de la intervención evaluada, no estando vinculado con su gestión o con cualquier elemento que la compone.

- Incidencias.- En el supuesto de la aparición de problemas durante la realización del trabajo de campo o en cualquier otra fase de la evaluación, éstos deberán ser comunicados inmediatamente al Área de Desarrollo Sostenible y a la Gerencia del Proyecto. De no ser así, la existencia de dichos problemas en ningún caso podrá ser utilizada para justificar la no obtención de los resultados establecidos por los contratantes en los presentes términos de referencia.

- Convalidación de la información.- Corresponde al equipo evaluador garantizar la veracidad de la información recopilada para la elaboración de los informes, y en última instancia será responsable de la información presentada en el Informe de evaluación.

- Entrega de los Informes.- En caso de retraso en la entrega de los informes o en el supuesto en que la calidad de los informes entregados sea manifiestamente inferior a lo pactado, serán aplicables las penalizaciones previstas en los presentes términos de referencia.

ARREGLOS PARA IMPLEMENTAR LA EVALUACIÓN

La evaluación ha sido solicitada por el PNUD, liderada por la Oficina del PNUD México, como Agencia de Implementación del proyecto. La Oficina del PNUD México tiene la responsabilidad asegurar una buena coordinación de la evaluación, así como también de darle apoyo necesario al equipo evaluador junto con la oportuna entrega de pagos del contrato.

El equipo de evaluación recibirá un breve resumen oral de la Oficina de País y de la RCU, a través de una tele-conferencia, al inicio de su misión. Se espera que el equipo entregue también un resumen oral de los resultados y conclusiones preliminares de la misión de evaluación al CO y la RCU. En caso de ser necesario otras discusiones con el CO y la RCU respecto a la misión y el proyecto se pueden coordinar mientras la evaluación se lleva a cabo. Se recomienda invitar a participar en el proceso de evaluación y de aprobación de reportes al GEF OFP.

Modalidades de pago y especificaciones: Los evaluadores serán contratados directamente con dinero del presupuesto del proyecto. El pago será de 50% al momento de la entrega del primer borrador a la Unidad Coordinadora de Proyecto y al PNUD-CO, PNUD-FMAM-RCU. El restante

50% será pagado una vez que el reporte final haya sido finalizado y aprobado por el proyecto, el PNUD-CO, Agencia Ejecutora (IIE), el PNUD-FMAM-RCU y el GEF OFP.

La calidad del reporte final será evaluada por el PNUD-CO, Agencia Ejecutora (IIE) y el PNUD-FMAM-RCU. Si la calidad no cumple con los estándares o requisitos del PNUD-FMAM, se solicitará a los evaluadores que reescriban o revisen (según sea necesario) el documento antes del pago de la última cuota.

Estos términos de referencia son basados en las políticas y procedimientos del PNUD-FMAM y han sido consensuados, al igual que la agenda de la misión, entre el PNUD-CO, el PNUD-GEF-RCU y el equipo del proyecto. El reporte final debe haber sido aceptado y aprobado por el PNUD antes de ser utilizado de manera pública. Para esto, el PNUD-CO y el PNUD-GEF-RCU deberán de manera formal aprobar el reporte (ver Anexo 5).

Actividades principales y plazos

Los reportes deberán ser entregados en Idioma Español y debe incluir el resumen ejecutivo en español e inglés.

Organización de la Evaluación

La evaluación estará dividida en cuatro partes: (i) la etapa de preparación para la misión la cual incluirá la revisión de toda la documentación relevante proporcionada; (ii) la etapa de visita de campo y entrevistas con las contrapartes y actores clave, incluyendo el PNUD); (iii) presentación de hallazgos y observaciones a los actores de los proyectos para discusión de los mismos; (iv) la etapa de redacción del informe de evaluación, incluyendo presentación del informe en forma borrador para comentarios y retro-alimentación, y (v) entrega del informe final de evaluación.

Para la evaluación, el Proyecto brindará el apoyo para concretar las entrevistas con los actores principales, arreglar la visita de campo, y asegurar la logística para el equipo de evaluación. Además existirá una reunión de inicio con PNUD, IIE y personal del proyecto en la que se discutirán los detalles de la Evaluación.

El plazo para la presentación del borrador final del informe de evaluación ante el PNUD (Oficina Nacional y Unidad Regional), y las contrapartes gubernamentales del proyecto no deberá superar tres semanas después de haber concluido la misión de evaluación. Se dará un plazo de 3 semanas para la revisión del borrador y la remisión de comentarios al evaluador. Después de este plazo la evaluación tendrá 2 semanas para incorporar aquellos cambios e información que considere pertinente sin comprometer el carácter objetivo e independiente de la evaluación En el caso en el cual surjan discrepancias entre los comentarios y los resultados de la evaluación y las partes arriba mencionadas, estas se podrán explicar en un anexo adjunto al informe final.

En el Cuadro siguiente, se indican las intervenciones del Consultor durante la consultoría. El equipo de trabajo y la Unidad de Gestión del Proyecto se pondrán de acuerdo sobre las fechas exactas.

La duración total de la evaluación a ser cotizada será de 23 días laborales de acuerdo al siguiente plan:

Preparación para la misión: (7 días, incluye tiempo de viaje)

- Revisión de todo la documentación y material disponible del proyecto, con especial atención en los resultados y productos del proyecto (PIRs, reportes de TPR, evaluación de medio término y otras evaluaciones, etc.);
- Familiarizarse con la situación de desarrollo general del país (a través de revisar los CCA, UNDAF y otros reportes del país).
- Preparar la misión de manera detallada, incluyendo metodología, en coordinación con el PNUD-CO y el equipo del proyecto.
- Tener una teleconferencia con el Asesor Regional del PNUD-FMAM

Misión: (7 días)

- Reunión con el IIE y PNUD-CO;
- Reuniones con actores nacionales relevantes
- Visita a las oficinas del proyecto
- Visita de campo (CERTE)
- Observación y revisión de las actividades finalizadas y en curso (creación de capacidades, concientización / educación, actividades de demostración de uso sostenible, desarrollo comunitario, etc.)
- Entrevistas presenciales y/o virtuales con beneficiarios y actores clave, incluyendo representantes de la autoridad local, autoridad local ambiental, comunidades, etc.

Reporte Borrador (6 días):.

- Reunión de cierre con PNUD-CO, IIE y el PNUD-FMAM-RCU
- Borrador del reporte de evaluación del proyecto en el formato adecuado (presentación en Powerpoint y síntesis).
- Concluir el reporte final y entregarlo para comentarios. Las partes entregarán comentarios en un plazo no mayor a un 15 días.

Reporte Final (3 días)

- Incorporación y ajustes de los comentarios del PNUD, IIE y PNUD-FMAM-RCU.
- Entrega final del reporte de evaluación

ALCANCE DE LA EVALUACIÓN FINAL DE LOS PROYECTOS GEF[2]Y ASUNTOS ESPECIFICOS A SER CUBIERTOS

El alcance de una EF dependerá del tipo de proyecto, tamaño, área focal, y contexto de país. En todos los casos, la EF debe examinar y evaluar apropiadamente las perspectivas de varias partes interesadas. En la mayoría de los casos, una EF incluirá visitas al campo para constatar los logros del proyecto y entrevistas a las partes interesadas que sean clave a nivel nacional y local donde corresponda. También analiza el uso de recursos GEF y co-financiamiento en el contexto más amplio del país.

En general se espera que las evaluaciones en el GEF exploren los siguientes cinco importantes criterios:

- **Relevancia.** La medida en la cual la actividad es apropiada para las prioridades de desarrollo y políticas organizacionales locales y nacionales, incluyendo cambios a través del tiempo.
- **Efectividad.** La medida en la cual un objetivo ha sido logrado o que tan probable sea lograrlo.
- **Eficiencia.** La medida en la cual los resultados han sido entregados con los recursos más económicos posibles; también llamado efectividad de costos o eficacia.
- **Resultados.** Lo positivo y negativo, lo previsto y lo imprevisto, cambios y efectos producidos por una intervención de desarrollo. En términos GEF, los resultados incluyen productos directos del proyecto, resultados a corto y mediano plazo, y el impacto a más largo plazo incluyendo beneficios ambientales globales, efectos de réplica y otros efectos locales.
- **Sostenibilidad.** La habilidad probable de una intervención de continuar entregando beneficios por un periodo extendido de tiempo después de su término. Lo proyectos necesitan ser ambientalmente, financieramente y socialmente sostenibles.

Lo siguiente debe ser cubierto en el reporte de EF:

Información general sobre la evaluación.

El reporte de (EF) proveerá información sobre cuando se llevó a cabo la evaluación; los lugares visitados; quien estuvo involucrado; las preguntas clave; y la metodología utilizada. Más detalles son proporcionados en la plantilla de los Términos de Referencia (**TdR**) en el Anexo 2.

Evaluación de los resultados del proyecto.

Las EFs evaluarán como mínimo el logro de productos y resultados y proveerán mediciones para los resultados. Esto, busca determinar la medida en la cual los resultados del proyecto fueron alcanzados, o se espera que se alcancen, y evaluar si el proyecto ha llevado a cualquier otra consecuencia positiva o negativa. A la vez que se evalúan los resultados de un proyecto las EFs buscarán determinar la medida de los logros y deficiencias en lograr el objetivo del proyecto como está establecido en el documento del proyecto y también indicar si hubo algún

[2] Idem.

cambio y si estos cambios fueron aprobados y alcanzados. Si el proyecto no estableció una línea base (condiciones iníciales), el evaluador en conjunto con el equipo de proyecto debe buscar calcular las condiciones iniciales (línea base) para que los logros y resultados puedan ser apropiadamente establecidos. Como en la mayoría de los proyectos GEF se puede esperar el logro de los resultados antes del cierre del proyecto, la evaluación de los resultados del proyecto debe ser una prioridad. Los resultados son el efecto a corto o mediano plazo probable o alcanzado de los productos de una intervención. Ejemplos de resultados pueden incluir, pero no están restringidos a fortalecimiento de capacidades institucionales, conciencia pública más alta (cuando conduzca cambios de comportamiento), y transformación de marcos de políticas y mercados. **Para los Proyectos GEF 4 se requiere**, y para los proyectos GEF 3 se recomienda, que los evaluadores cuantifiquen los resultados del proyecto utilizando indicadores y Herramientas de Seguimiento *(Tracking Tools)* relevantes.

Para determinar el nivel de logros de los resultados del proyecto y objetivo, los siguientes tres criterios serán evaluados en la EF:

- **Relevancia**: ¿Fueron los resultados del proyecto consistentes con las áreas focales/estrategias del programa operacional y prioridades de país? Los evaluadores deben medir también la medida en la cual los resultados especificados en el documento del proyecto son realmente resultados y no productos o insumos.
- **Efectividad**: ¿Son los resultados del proyecto proporcionales a los resultados esperados (como están descritos en el documento de proyecto) y a los problemas que el proyecto pretendía abordar (ej.: objetivos de proyecto originales o modificados)? En caso de que los resultados originales o modificados sean solo productos/insumos, entonces evaluar los evaluadores deben medir si hubo algún resultado real del proyecto, y si lo hubo, entonces, si los mismos son proporcionales con las expectativas realistas de estos proyectos.
- **Eficiencia**: ¿Fue el proyecto costo efectivo? ¿Fue el proyecto la opción de menor costo? ¿Fue la implementación del proyecto retrasada, y si lo fue, afectó esto la efectividad de costo? Cuando sea posible, el evaluador debe comparar también la relación costo-tiempo vs. resultados del proyecto con otros proyectos similares.

La evaluación de relevancia, efectividad y eficiencia debe ser tan objetiva como sea posible e incluir suficiente y convincente evidencia empírica. Idealmente el sistema de monitoreo del proyecto debe entregar información cuantificable que nos lleve a una evaluación robusta de la efectividad y eficiencia del proyecto. Como los proyectos tienen diferentes objetivos, los resultados evaluados no son comparables y no pueden ser acumulados. Para monitorear la fortaleza del portafolio, los resultados del proyecto serán clasificados de la siguiente manera:

Altamente Satisfactorio (AS): El proyecto no tuvo deficiencias en el logro de sus objetivos, en términos de relevancia, efectividad o eficiencia.
Satisfactorio (S): El proyecto tuvo deficiencias menores en el logro de sus objetivos, en términos de relevancia, efectividad o eficiencia.
Moderadamente Satisfactorio (MS): El proyecto tuvo deficiencias moderados en el logro de sus objetivos, en términos de relevancia, efectividad o eficiencia.
Moderadamente Insatisfactorio (MI): El proyecto tuvo deficiencias significativas en el logro de sus objetivos, en términos de relevancia, efectividad y eficiencia.

Insatisfactorio (I): El proyecto tuvo deficiencias mayores en el logro de sus objetivos, en términos de relevancia, efectividad y eficiencia.
Altamente Insatisfactorio (AI): El proyecto tuvo deficiencias severas en el logro de sus objetivos, en términos de relevancia, efectividad y eficiencia.

Los evaluadores también evaluarán impactos positivos y negativos actuales (o anticipados) ó efectos emergentes a largo plazo del proyecto. Dada la naturaleza de largo plazo de los impactos, puede que no sea posible para los evaluadores identificar o evaluar completamente los impactos. De todas maneras los evaluadores indicarán los pasos tomados para evaluar los impactos del proyecto, especialmente los impactos en poblaciones locales, medio ambiente local (ej.: aumento en el número de individuos de una especie en peligro de extinción, mejoría en la calidad del agua, incremento en la cantidad de peces, reducción de las emisiones de gas invernadero) y cuando sea posible indicar como las conclusiones respecto a los impactos serán reportados al GEF en el futuro.

Evaluación de sostenibilidad de los resultados del proyecto

La EF evaluará, como mínimo, la "probabilidad de sostenibilidad de resultados al finalizar el proyecto, y proveer una clasificación para esto." La evaluación de la sostenibilidad le dará atención especial al análisis de los riesgos que probablemente afecten la persistencia de los resultados del proyecto. La evaluación de sostenibilidad también debería explicar como otros factores contextuales importantes que no son resultados del proyecto afectarán la sostenibilidad. Más detalles sobre la evaluación de la sostenibilidad se proveen en el Anexo 2.

Rol catalizador

La evaluación final también describirá cualquier efecto catalítico o de replicación del proyecto. Si no se identifica ningún efecto, la evaluación describirá las acciones catalíticas o de replicación que el proyecto ha realizado.

Evaluación de los sistemas de monitoreo y evaluación

La EF valorará si el proyecto cumplió los requerimientos del diseño de proyecto de Monitoreo y Evaluación (M&E) y la aplicación del plan de M&E del proyecto. Los proyectos GEF tienen que presupuestar adecuadamente para la ejecución del plan de M&E, y proveer recursos adecuados para la implementación del plan de M&E. También se espera que los administradores de proyecto utilicen la información generada por el sistema de M&E durante la implementación del proyecto para mejorar y adaptar el proyecto. Debido a la larga duración de muchos proyectos GEF, también se exhorta a los proyectos a incluir planes de monitoreo a largo plazo para medir resultados (como resultados medio ambientales) después del término del proyecto. Se espera que el reporte de EF incluya evaluaciones separadas de los logros y deficiencias de estos dos tipos de sistemas de M&E.

Consideraciones generales del reporte

- Formato: Times New Roman – 11; espaciado simple; tabla de contenido automatizada; número de páginas (centrado abajo); se sugiere el uso de gráficos y fotografías, cuando sea relevante
- Largo: Máximo 50 páginas en total, excluyendo anexos

- Fechas de entrega: Primer borrador en un plazo no mayor a dos semanas luego de finalizada la misión

Temas especiales a considerar

- Incluir motivos por los cuales la duración propia del proyecto fue mucho más extensa de lo inicialmente contemplado.
- Incluir los motivos por los cuales se eliminó la segunda fase del proyecto.
- Que queden claros los alcances del proyecto, la trascendencia de los productos alcanzados y la necesidad de continuar trabajando en este tema.

Estructura del reporte final

i. **Resumen ejecutivo**
- Breve descripción del proyecto
- Contexto y propósito de la evaluación Análisis de barreras
- Institucionalidad
- Evaluación de la realidad del país y su relación con las condiciones planteadas en el proyecto originalmente
- Co-financiamiento
- Conclusiones, recomendaciones principales y lecciones aprendidas, en especial aquellas relacionadas con la institucionalidad y empoderamiento del proyecto.
- Tabla que resuma las calificaciones obtenidas en esta evaluación

ii. **Introducción**
- Propósito de la evaluación
- Cuestiones claves tratadas (no limitiativo)
  - Institucionalidad
  - Empoderamiento
  - Contexto local
  - Pertinencia de la estrategia y marco lógico y su relación con el plan operativo y de acción actual
- Metodología de la evaluación.
- Estructura de la evaluación

iii. **El proyecto y su contexto de desarrollo**
- Comienzo y duración del proyecto
- Problemas que el proyecto pretende abordar
- Objetivos inmediatos y de desarrollo del proyecto
- Actores incluyendo (i) como estos han incidido en la implementación de las actividades previstas y los logros esperados; y (ii) acciones y/o medidas correctivas emprendidas para remediar aquellos problemas que afectaron la implementación y los avances del proyecto
- Resultados esperados

iv. Resultados y conclusiones

Adicional a la evaluación de efectividad y eficiencia descrita arriba se debe entregar un análisis descriptivo. Todos los criterios marcados con **(*)** deben ser calificados utilizando las siguientes divisiones de categorías: Altamente Satisfactorio (AS), Satisfactorio (S), Moderadamente Satisfactorio (MS), Moderadamente Insatisfactorio (MI), Insatisfactorio (I), Altamente Insatisfactorio (AI). Favor ver Anexo 2 para la explicación de la terminología GEF.

a. Formulación del proyecto

La sección debe comenzar describiendo el contexto del problema que el proyecto está tratando. Debe describir qué tan eficientes fueron el diseño y como se conceptualizó el proyecto para enfrentar la problemática, haciendo énfasis en la consistencia y lógica de la estrategia del proyecto y su marco lógico. Esta sección debe responder preguntas como *¿qué tan bien formulado estuvo el proyecto? ¿Las modificaciones que se hicieron durante su ejecución, resultaron en mejores productos y (potencialmente) mayores impactos?* Esta sección de incluir lo siguiente:

- Conceptualización/diseño **(*)**:La evaluación deberá analizar los procesos, consultas, etc…mediante los cuales se definió "la problemática" que aborda el proyecto; incluyendo como se identificaron las amenazas existentes, sus causas subyacentes y las soluciones propuestas. De igual manera la evaluación dará su opinión sobre la estrategia seleccionada por el proyecto - en su diseño original – y si esta abordó conceptualmente las causas y las amenazas principales identificadas en el área del proyecto. La evaluación también analizará la matriz de marco lógico elaborada para determinar la coherencia y la lógica entre los resultados propuestos y la medida en la cual estos conllevan a los objetivos establecidos por el proyecto.
  De igual manera, la evaluación analizará si la experiencia de otras iniciativas relevantes fueron incorporadas en la formulación del proyecto para mejorar su alcance y efectividad. Finalmente, la evaluación analizará los arreglos institucionales propuestos por el proyecto en su diseño inicial, cuan prácticos y viables han sido y las medidas adaptativas que se han llevado a cabo para lograr unos arreglos institucionales más efectivos para la implementación y la gerencia del proyecto. Así mismo, será conveniente evaluar la dimensión financiera y temporal del proyecto.
- La apropiación nacional: Se debe evaluar si la idea inicial del proyecto se originó en planes de desarrollo locales, nacionales o sectoriales y si el proyecto responde a los intereses nacionales en cuanto al medio ambiente y el desarrollo.
- Consistencia del Proyecto con Prioridades Nacionales y/o con Planes de Estado,La evaluación determinara el grado de pertinencia, coherencia y relevancia que el proyecto ha tenido desde su origen y durante su evolución con planes y estrategias nacionales, sectoriales y/o de desarrollo regional, así como en la política ambiental y de desarrollo.

- Participación de actores **(*)**: Se debe evaluar si existió diseminación de información, consulta y participación de actores en el diseño del proyecto. La evaluación analizara los procesos de consulta y la participación de los involucrados en la implementación

del proyecto, incluyendo medidas o mecanismos establecidos para difundir información sobre el proyecto

- Replicabilidad: Determinar la manera en que las lecciones y las experiencias generadas por el proyecto fueron o pueden ser replicadas o ampliadas en el diseño e implementación de otros proyectos (esto también se relaciona a las prácticas llevadas a cabo durante la implementación).
- Mecanismos o estrategias para fomentar la réplica de mejores prácticas. La evaluación analizará las medidas y/o mecanismos mediante los cuales las lecciones o experiencias exitosas del proyecto se han difundido y han sido aplicadas por otros actores, proyectos y programas. De no haber llegado todavía a esta etapa, la evaluación determinara la estrategia actual del proyecto para lograr este propósito y como mejorarlo de ser necesario.

- Otros aspectos: (R) La evaluación analizará, de ser aplicable, las alianzas establecidas entre el proyecto y otras iniciativas relevantes para maximizar sinergias y aprovechar recursos (financieros y humanos, etc).

Implementación del Proyecto

- Aproximaciones sobre la ejecución (R). Este acápite debe incluir análisis de los siguientes aspectos:

  - Estrategia empleada para la ejecución del proyecto
  - El uso del marco lógico como herramienta de gerencia/manejo durante la ejecución del proyecto y los cambios realizados a este como respuesta a cambios contextuales y/o en base a la retroalimentación de procesos de monitoreo y evaluación internos, etc.
  - Cómo cambios considerables en la línea de base programática del proyecto (e.g. regulaciones tarifarias, reformas legales y constitucionales) han incidido en la implementación y los avances del mismo.
  - Análisis de la capacidad de adaptación del proyecto a los diversos cambios contextuales ocurriendo durante su periodo de arranque y cómo estos fueron reflejados en los Planes Operativos Anuales (Plan de Trabajo Anual) o en cambios en los arreglos institucionales o de coordinación para mejorar la ejecución y efectividad del proyecto.
  - Las relaciones operativas y/o de trabajo entre las instituciones involucradas en el proyecto y otras, y cómo estas relaciones han contribuido a la ejecución y los objetivos del proyecto.
  - Las capacidades asociadas al proyecto y su incidencia en el desarrollo y desempeño del proyecto.
  - Impacto generado por los cambios de visión de los diversos directores y coordinadores que ha tenido el proyecto.
  - Abordaje de los aspectos sociales de base, que son necesarios para la ejecución del proyecto, y enfatizar el alcance del mismo.
  - Participación local, gubernamental y comunitaria, en las actividades del proyecto.

- El uso y establecimiento en el proyecto de tecnologías de información electrónica para apoyar la ejecución, la participación y la supervisión, así como otras actividades del proyecto para fomentar la difusión de información sobre el proyecto.
- Evaluar las políticas emergentes de desarrollo en la zona por parte del Ejecutivo Nacional (e.g. Decreto de Emergencia) y otros actores (ej. Inscripción del Archipiélago en la lista de Patrimonios en Peligro) y cómo se ha venido posicionando el proyecto para maximizar sinergias y complementariedades.
- Co-financiamiento: análisis de los nuevos actores, y programas operando en las Islas Galápagos y las oportunidades que ofrecen para co-financiamiento.

- **Monitoreo y Evaluación (M&E) (*)**:Se debe incluir un análisis sobre la estrategia de monitoreo y evaluación adoptada por el proyecto para medir su eficacia, eficiencia, y la consecución de sus resultados en forma anual durante su fase de implementación. La capacidad de auto-evaluación por parte del proyecto deberá ser analizada al igual que los mecanismos, insumos (Planes Operativos, Reportes financieros (delivery rates, etc) utilizados como herramientas confiables para medir su éxito y desempeño en forma progresiva.

- **La Participación de los Actores (*)**: Análisis de los mecanismos existentes para la difusión de la información sobre el proyecto durante su implementación y el grado de participación de los involucrados en la gerencia, o toma de decisiones del proyecto, acentuando lo siguiente:

  - La producción y la difusión de la información generada por el proyecto.
  - Conocimiento e internalización por parte de las instituciones y la comunidad asociada.
  - Participación de los involucrados (especialmente a nivel local) en la ejecución y toma de decisiones del proyecto y un análisis de las fortalezas y debilidades de los mecanismos adoptados por el proyecto en lo que se refiere a la participación de actores locales y usuarios de recursos naturales.
  - El establecimiento de alianzas y relaciones de colaboración establecidas o propiciadas por el proyecto con entidades locales, nacionales e internacionales y los efectos que han tenido en la ejecución y el desempeño del proyecto.
  - Vinculación de instituciones gubernamentales y no gubernamentales en la ejecución del proyecto y el papel de estas en la ejecución.

- **Planificación Financiera:** Se debe incluir un análisis de:
  a. Los costos reales del proyecto por objetivo, resultados y actividades.
  b. El costo-eficiencia de los resultados. ¿Fue el proyecto costo-eficiente?
  c. El manejo financiero (incluyendo aspectos de desembolsos)
  d. Co-financiamiento del proyecto en base a lo establecido originalmente y lo real hasta la fecha, detallando las barreras y los cambios contextuales que han incidido en los compromisos de co-financiamiento incluyendo

recursos adicionales movilizados (en cash o en especie) de diversos actores.

e. Potencial de co-financiamiento basado en inversiones y programas existente y aquellos por realizarse, incluyendo recomendaciones sobre cómo aprovechar esta coyuntura.
f. El co-financiamiento (ver el Anexo 3 para indicaciones sobre el informe de co-financiamiento. Esta tabla debe ser completada y entregada en el documento de evaluación).

Modalidades de la ejecución e Implementación: Esto debe considerar la eficacia de la contraparte del PNUD y de la participación de la Unidad de Coordinación del proyecto en la selección, el reclutamiento, la asignación de expertos, consultores y miembros nacionales del personal de las contrapartes y en la definición de tareas y responsabilidades. La cantidad, calidad y puntualidad de los ingresos (insumos) para el proyecto con respecto a las responsabilidades de ejecución. Promulgación de legislación y disposiciones presupuestarias y grado en que éstos pudieron haber afectado la puesta en práctica y la sostenibilidad del proyecto. La calidad y puntualidad de los aportes del PNUD y del Gobierno, de ser el caso, de otras contrapartes responsables de proporcionar recursos al proyecto y el grado en que esto ha afectado la implementación del proyecto. Esta sección debe buscar responder a las siguientes preguntas: *¿Operó de manera eficiente y efectiva la modalidad de implementación y ejecución del proyecto? ¿Ocurrió una comunicación efectiva con actores críticos para la respuesta a las necesidades de la implementación? ¿Fueron razonables los costos de administración?*

Resultados

Análisis de los Resultados logrados por el proyecto hasta la fecha: Que incluye

- Evaluación cuantitativa, cualitativa y analítica de los resultados del proyecto.
- Evaluación del cumplimiento del proyecto construido vs. diseño del proyecto.
- Una evaluación de los esfuerzos por comunicar los resultados del proyecto, cobertura de prensa generada.
- Una evaluación de cómo el proyecto fue útil para satisfacer los objetivos institucionales de los socios.
- Desarrollo de capacidades y fortalecimiento institucional contraparte
- Nivel de desempeño técnico del proyecto incluyendo cantidad de energía eólica producida, aporte de la energía eólica en el sistema (tasas de penetración), estabilidad del sistema

Logro de productos/resultados y objetivos (*): Esta evaluación final busca determinar el logro alcanzado en cuanto al objetivo y resultado del proyecto y si ha habido algún impacto positivo o negativo. Para esto es importante determinar los logros y fracasos del proyecto en alcanzar su objetivo y resultados. Si el proyecto no estableció una línea base (condición inicial), los evaluadores, junto con el equipo del proyecto, deben intentar determinarla con el uso de metodologías especiales para poder establecer correctamente logros, resultados e impactos.

Este análisis se debe llevar a cabo en base a los indicadores específicos del proyecto. Esta sección también debe incluir una evaluación de lo siguiente:

- Sostenibilidad: Grado en el cual los beneficios del proyecto continuarán, dentro o fuera del dominio del mismo, después de que se haya finalizado su implementación. Los factores relevantes incluyen por ejemplo: desarrollo de una estrategia de sostenibilidad, establecimiento de instrumentos y mecanismos financieros y/o económicos para asegurar la sostenibilidad financiera de los logros del proyecto, grado de integración del proyecto en las instituciones relevantes, a nivel local y nacional, y apropiación de sus objetivos por actores locales, etc..

- El análisis de sostenibilidad debe también explicar de que manera otros factores contextuales que no sean resultados del proyecto afectarán la sostenibilidad. Este análisis se debe hacer en base a las siguientes cuatro dimensiones de sostenibilidad. Además estas dimensiones deben ser calificadas con las categorías que se describen en el pie de página[3]:

  - Recursos Financieros: ¿Hay algún riesgo financiero que podría afectar la sostenibilidad de la iniciativa? ¿Cual es la probabilidad que no existan recursos financieros para sostener los resultados del proyecto una vez que el apoyo del GEF haya finalizado? (los recursos pueden ser de variadas fuentes como: sector público y privado, actividades generadoras de recursos, y tendencias que indican que en un futuro podría existir financiamiento adecuado para sostener los resultados del proyecto).

  - Socio-Política: ¿Hay algún riesgo social o político que pueda perjudicar la continuidad de los resultados del proyecto? ¿Hay algún riesgo que el apropiamiento de los actores sea insuficiente para asegurar la continuidad de los beneficios y resultados del proyecto? ¿Se muestran los actores clave del proyecto interesados en que los beneficios del mismo continúen? ¿Se ha logrado concienciar al público y actores para que continúen apoyando el objetivo del proyecto en el largo plazo?

  - Marco institucional y gobernabilidad: ¿Ejerce el marco institucional y la gobernabilidad algún riesgo para la permanencia de los beneficios del proyecto? También se debe considerar si los sistemas para la rendición de cuentas y transparencia, así como la capacidad (expertise) son adecuados y están disponibles para continuar con la iniciativa.

  - Ambiental: ¿Hay algún riego ambiental o actividades en el área del proyecto que puedan disminuir el futuro flujo de los beneficios ambientales del proyecto? La evaluación final debe evaluar si algunas actividades del proyecto pueden ejercen algún tipo de amenaza a la sostenibilidad de los resultados del

[3] Probable (P): No hay riesgos que afecten esta dimensión de sostenibilidad
Moderadamente probable (MP): hay riesgos moderados que pueden afectar esta dimensión de sostenibilidad
Moderadamente Improbable (MI): Hay riesgos significativos que afectan esta dimensión de sostenibilidad
Improbable (I): Hay riesgos severos que afectan esta dimensión de sostenibilidad.

proyecto. Por ejemplo, la construcción de una represa en un área protegida podría inundar una amplia zona y por tanto neutralizar los beneficios a la biodiversidad lograda por el proyecto.

Contribución a mejorar las habilidades de personal nacional/local.

- Arreglos y Modalidades institucionales para la implementación del proyecto. Análisis de los arreglos institucionales propuestos y su grado de efectividad y practicalidad, incluyendo recomendaciones para aumentar su eficiencia. Este análisis también analizará las barreras administrativas y como solventarlas en forma practica en consistente con los requisitos operativos del PNUD.

v. Conclusiones y recomendaciones

Esta sección debe entregar los principales puntos o conclusiones de la evaluación y entregar recomendaciones específicas. Las recomendaciones deben ser específicas indicando hacia quién/quienes van dirigidas. Favor completar las columnas relevantes de la tabla del Anexo 4 con las principales recomendaciones. Esta sección debe contener:

- Comentarios finales o síntesis respecto a la relevancia, efectividad, eficiencia, resultados y sostenibilidad del proyecto;
- Comentarios finales respecto a logro de los resultados y objetivo del proyecto;
- Acciones correctivas para el diseño, la implementación, el monitoreo y la evaluación del proyecto;
- Acciones de seguimiento para reforzar los beneficios iniciales del proyecto;
- Propuestas para futuras directrices que refuercen el logro de los objetivos principales;
- Se debería incluir lo relacionado con el Fortalecimiento Institucional
- Se debería incluir el tratamiento del sector energético en su globalidad y no circunscribirse al sector eléctrico.

vi. Lecciones aprendidas

Los evaluadores deberán presentar lecciones y recomendaciones en todos los aspectos del proyecto que consideren relevante. Se le solicita a los evaluadores prestar especial atención a analizar las lecciones proponiendo recomendaciones en aspectos relacionados a factores que contribuyen o dificultan: el logro del objetivo y resultados del proyecto, la sostenibilidad de los beneficios del proyecto, innovación, efecto catalítico y de réplica, así como el monitoreo y la evaluación del proyecto. A continuación se presentan algunas preguntas a considerar:

- ¿Hay algo que valga la pena mencionar que sea especial o crítico que aprendimos durante la implementación del proyecto este año que sea importante compartir con otros proyectos para que ellos puedan evitar este error o utilizar esta oportunidad?"
- ¿Qué haría distinto si empezara el proyecto de nuevo?
- ¿Cómo contribuye este proyecto a la transferencia de tecnología?
- ¿De qué manera el proyecto ha contribuido a la transferencia de tecnología?

- ¿En qué medida este proyecto del PNUD-GEF ha sido relevante para los esfuerzos nacionales o locales de reducción de la pobreza/ gobernabilidad democrática/ fortalecimiento las capacidades para la prevención y recuperación de crisis / igualdad de género y empoderamiento de las mujeres? Favor explicar
- ¿Ha generado el proyecto beneficios globales ambientales junto con contribuir al logro de las prioridades nacionales de manejo ambiental y desarrollo sostenible?

vii. Anexos al reporte de evaluación

- Términos de referencia de la evaluación
- Agenda e itinerario
- Lista de personas entrevistadas
- Resumen de las visitas de campo
- Lista de documentos revisados
- Cuestionarios utilizados y resumen de resultados
- Comentarios de los actores (sólo en caso de existir discrepancias con los hallazgos y conclusiones de la evaluación)
- Formulario de revisión y aprobación del RCU y la CO
- Cualquier otra información que se considere necesaria

7. ANEXOS

Anexo 1: Lista de documentos a revisar por los evaluadores
Anexo 2. Explicación de la Terminología de GEF
Anexo 3: Planificación Financiera – Co- Financiamiento
Anexo 4: Tabla de Respuestas de Gestión

C. EVALUACIÓN DE PROPUESTAS.

La persona que aplique al puesto será evaluada en dos fases: una técnica y una económica. La fase técnica se compone de la revisión de documentación y una entrevista a la persona que cumpla con el puntaje mínimo en la revisión de documentos.

Evaluación de la documentación.		Puntaje máximo*	Candidato(a)		
			A	B	C
1	Metodología propuesta. La organización/ equipo explica claramente el procedimiento que seguirá. Es coherente con lo requerido.	100*			
2	La organización/equipo propone un equipo de trabajo conformado por expertos en temas relacionados con energía, con experiencia en proyectos similares. Experiencia en temas de energías renovables (50 puntos) Experiencia en temas de energía eólica específicamente (50 puntos)	100*			
3	Demuestra un sólido Track Record en Evaluaciones de proyecto de complejidad similar, preferiblemente del GEF.	100*			
4	El consultor internacional (Team Leader) tiene la experiencia y el conocimiento técnico en la supervisión/coordinación/gerencia de proyectos de infraestructura y desarrollo y habilidad para coordinar actividades que involucran instituciones de diferente índole.	100*			
5	El consultor nacional tiene la experiencia y el conocimiento técnico en evaluación de proyectos y deseablemente también en la supervisión/coordinación/gerencia de proyectos de infraestructura y desarrollo y habilidad para coordinar actividades que involucran instituciones de diferente índole.	100*			
Total de puntos en fase técnica.		**500**			

*El puntaje máximo será calculado conforme a la siguiente tabla:

Criterio	Evidencia	Porcentaje aplicable
Excelente	La propuesta presentada tiene un excelente soporte técnico para el criterio evaluado, que permite afirmar que la persona licitante cumple y excede con lo requerido.	100 %
Bueno	La propuesta presentada tiene buen soporte técnico para el criterio evaluado, que permite afirmar que la persona licitante cumple o excede con lo requerido.	90 %
Satisfactorio	La propuesta presentada contiene el suficiente soporte técnico para el criterio evaluado, que permite afirmar que la persona licitante cumple con lo requerido.	70 %
Pobre	La propuesta presenta escaso soporte técnico para el criterio evaluado, que permite afirmar que la persona licitante podría cumplir con lo requerido.	40 %
Muy pobre	La propuesta presenta muy escaso soporte técnico para el criterio evaluado, que permite afirmar que la persona licitante no cumple con lo requerido.	10 %
No presenta	La información no fue proporcionada para evaluar el criterio evaluado.	0 %

Todo licitante que obtenga al menos el 80% de los puntos de la evaluación técnica, pasará a la evaluación económica; se adjudicará el contrato al licitante que oferte el menor precio.

El PNUD se reserva el derecho de aceptar o rechazar cualquier oferta, y de anular el proceso licitatorio así como de rechazar todas las propuestas en cualquier momento de anterioridad a la adjudicación del contrato, sin incurrir con ello en ninguna responsabilidad con relación a la persona licitante que se viera así afectado, y sin tener la obligación de informar los motivos de dicha acción.

NOTA: Una vez que se cuente con la calificación de todas las solicitudes se establecerá un orden de prioridad, definido por el puntaje alcanzado. Con base en el orden de prioridad resultante de la calificación a que se refiere el párrafo anterior, se autorizará la ejecución de los diferentes conceptos de apoyo, asignando los recursos en función de la disponibilidad presupuestaria.

Anexo 2 Definición de objetivos de proyecto, componentes y actividades

Objetivo de Desarrollo

Reducir la Emisión anual de Gases de Efectos Invernadero (GEI) de México, a través de la instalación y operación de generadores eólicos comerciales a gran escala. El Objetivo estratégico es alcanzar una capacidad instalada de 2000 MW, en un plazo de 10 años, que reducirían anualmente 4 Mt CO2 equivalente.

Objetivos inmediatos, componentes y actividades

Se omiten los componentes y actividades comprendidos en la Fase 2.

Objetivo inmediato 1

Reducir las Barreras identificadas para la comercialización de energía eólica con el objeto de:

1) Facilitar la instalación y operación de tres modelos de plantas de generación eólica en México conectadas a la red central de distribución.
2) Crear un mercado sustentable de energía eólica en México.

Componente 1
Mejora institucional del marco legal y regulatorio para la generación eólica de energía.

Actividad 1.1
Revisión del marco institucional legal y regulatorio.

Actividad 1.2
Propuestas de enmienda o mejora del marco institucional legal y regulatorio.

Actividad 1.3
Campaña promocional.

Actividad 1.4
Monitoreo y Evaluación de los productos y actividades.

Componente 2
Establecimiento de capacidades nacionales y regionales que apoyen el desarrollo de la generación eólica como fuente de suministro viable para el mercado de la electricidad.

Actividad 2.1
Proceso de Autorización.

Actividad 2.2
Subcontratos para la construcción del CeRTE.

Actividad 2.3
Construcción y arranque del CeRTE.

Actividad 2.4
Inclusión de cursos en la programación de las Instituciones Técnicas.

Actividad 2.5
Primeros Talleres en el CeRTE.

Actividad 2.6
Manual de Mejores Prácticas.

Actividad 2.7
Mejora de la comprensión de la Tecnologia de Generación Eólica, de parte de los actores principales.

Actividad 2.8
Monitoreo y Evaluación de los Componentes y Actividades.

Actividad 2.9
Entrenamiento en operación y mantenimiento de plantas de generación eólica.

Actividad 2.10
Disponibilidad de Datos de desempeño de las turbinas eólicas.

Componente 3
Recursos eólicos evaluados en las zonas de mayor potencial de desarrollo comercial en México, y estudios completos de factibilidad para 3 plantas eólicas.

Actividad 3.1
Estudios Genéricos para facilitar el procesamiento de proyectos eólicos.

Actividad 3.2
Instalación de estaciones anemométricas de referencia para la Evaluación del recurso energético eólico.

Actividad 3.3
Evaluación, de un año, del recurso energético eólico.

Actividad 3.4
Estudios de Factibilidad para tres proyectos modelo de generación eólica.

Actividad 3.5
Bases de Concurso para proyectos modelo.

Actividad 3.6
Estudios genéricos para La Ventosa.

Actividad 3.7
Accesibilidad a recursos de información eólica.

Actividad 3.8
Monitoreo y Evaluación de Componentes y Actividades.

Componente 6
Promoción de la información relevante para la generación eólica de lectricidad basados en mecanismos institucionales y financieros probados.

Actividad 6.1
Apoyo a actividades promocionales de vinculación.

Actividad 6.2
Monitoreo y evaluación de Componentes y Actividades.

Actividad 6.4
Manual de Mejores Prácticas y Guías para la Implementación Comercial de Proyectos de generación eólica en México.

Anexo 3 Escalas de Valoración

Conforme a la recomendación del FMAM, el PNUD evalúa la Relevancia, Eficacia y Eficiencia de los proyectos acorde con la siguiente Escala de Calificación[13]:

Altamente Insatisfactoria (AI):	El Proyecto presentó severas deficiencias.
Insatisfactoria (I):	El desarrollo del proyecto presentó deficiencias mayores.
Marginalmente Insatisfactoria (MI):	El Proyecto presentó deficiencias significativas.
Marginalmente Satisfactoria (MS):	El Proyecto presentó deficiencias moderadas.
Satisfactoria (S):	El Proyecto presentó deficiencias menores.
Altamente Satisfactoria (AS):	Sin deficiencias.

Y, tocante a la Sustentabilidad, la Escala de Calificación[14] es como sigue:

Improbable (I)	Riesgo severo de que los Resultados del proyecto así como sus productos clave no serán sustentables.
Moderadamente Improbable (MI)	Riesgos substanciales de que los Resultados clave no se realizarán concluido el proyecto; sin embargo, algunos Resultados y actividades se lograrán.
Moderadamente Probable (MP)	Riesgos moderados, pero con expectativas de que al menos algunos resultados serán sustentables.
Probable (P)	Riesgos para la Sustentabilidad prácticamente despreciables, con Resultados clave esperados en el futuro previsible.

[13] UNDP Evaluation Office (2012), p. 25.
[14] Idem, p. 22.

Anexo 4 Itinerario y Personas Entrevistadas

Fecha	**Reunión**	**Lugar**
27 Agosto 2012	13:00 – 14:30 Entrevista con Mtra. Verónica Irastorza, Subsecretaria de Planeación Energética y Desarrollo Tecnológico, SENER; Ing. Julio Valle; Gerente de Energías Renovables, SENER	México, D.F.
28 Agosto 2012	10:30 Reunión virtual con: Verania Chao, Gerente del Programa PNUD-CO; María José Mesén, Punto Focal PNUD-CO para el proyecto; Analisa Munich, Punto Focal FMAM para América Latina; Ing. Alejandra Lugo, Gerente de Administración del Proyecto, IIE; e, Ing. Marco Borja, Gerente de Proyecto	Cuernavaca
3 Septiembre 2012	13:00 Junta de Inicio con funcionarios PNUD-CO Verania Chao, Gerente del Programa PNUD-CO; María José Mesén, Gerente de Programa desarrollo Sustentable, PNUD-CO; Francisco Hernández S., Seguimiento Administrativo PNUD-CO	México
10 Septiembre 2012	15:00 – 19:30 Desplazamiento a Juchitán Conversación con Ing. Marco Borja para detallar elementos sobre el origen, la definición y desarrollo general del proyecto	Huatulco-Juchitán
11 Septiembre 2012	9:00 – 11:00 Visita al CERTE 11:00 – 12:00 Reunión con proveedores de la turbina de generación del CERTE, Ings. Hozomi y Yukoku, de la empresa japonesa Komaihaltec, Ltd. 12:30 – 14:30 Visita a Parques Eólicos de la Región La Venta – La Ventosa	Juchitán

Fecha	Reunión	Lugar
	15:00 – 16:30 Reunión con gerentes de operación y mantenimiento de Eléctrica del Valle de México	
12 Septiembre 2012	9:00 – 19:00 Entrevista con Ing. Marco Borja, Gerente de proyecto IIE.	Juchitán
13 Septiembre 2012	10:00 -14:00 Traslado a Huatulco Comentarios sobre perspectivas en el corto plazo del CERTE.	Juchitán-Huatulco
18 Septiembre 2012	13:00 – 15:00 Entrevista con Arq. José Ramón de Legarreta, Director del Programa de Fomento a la Inversión en la Propiedad Rural (FIP)	México, D.F.
24 Septiembre 2012	9:30 – 12:00 Entrevista con Dr. Alejandro Peraza, Director General de Electricidad y Energías Renovables, Comisión Reguladora de Energía 13:30- 15:00 Entrevista con Ing. Alejandro Carrión, Jefe Proyectos Eólicos, Subdirección de Construcción Proyectos Termoeléctricos	México, D.F.

Anexo 5 Lista de Documentos Revisados

Borja, M., Jaramillo, O. y Mimiaga, F. ***Primer Documento del Proyecto Eoloeléctrico del Corredor Eólico del Istmo de Tehuantepec***. México.

Climate Investment Funds (2009). ***Clean Technology Fund Investment Plan for Mexico***. Washington, 2009.

CONUEE, CRE y GTZ (2010). ***Estudio sobre la Cogeneración en el Sector Industrial en México***. México.

EWEA (2009). ***The Economics of Wind Energy***. Brussels.

FMAM (2010). ***Política de Seguiiento y Evaluación del FMAM, 2010***. Washington.

GTZ y SENER (2009). ***Energías Renovables para el Desarrollo Sustentable en México***. México.

GWEC (2010). ***Global Wind Energy Outlook 2010***. Brussels.

IIE (2005). ***Taller de Ruta Tecnológica de la Energía Eólica en México para los Próximos 25 años, Informe de Resultados***. Cuernavaca.

SENER (2009). ***Programa Especial para el Aprovechamiento de Energías Renovables***. México.

SENER (2012). ***Estrategia Nacional de Energía 2012-2026***. México.

UNDP (2002). ***Second country cooperation framework for Mexico (2002-2005)***. Executive Board of the United Nations Development Programme and of the United Nations Population Fund. New York.

UNDP (2010). ***Manual para realizar una Evaluación de necesidades en materia de tecnología para el cambio climático***. New York.

UNEP, AFD e IMCO (2012). ***Programa Especial de Cambio Climático para el período 2012-2020 con acciones adicionales y análisis de potencial***. New York.

USAID (2009). ***Análisis Comparativo del Marco Eléctrico Legal y Regulatorio de EE.UU. y México para la promoción de la Energía Eólica***. Washington.

World Bank (2012). ***State and Trends of the Carbon Market 2012***. Washington.

World Economic Forum (2011). ***Scaling up Renewables, Developing Renewable Energy Capacity – Addressing Regulatory and Infrastructure Challenges in Emerging Markets***. Geneva.

Anexo 6 Instituciones financieras participantes

En el financiamiento reciente de los proyectos de generación eoloeléctrica en México han participado las siguientes instituciones:

- Bancomext, México
- Banorte, México
- Banco Interamericano de Desarrollo
- Banco Mundial
- Banobras, México
- BBVA Bancomer, México y España
- Crédite Agricole and Investment Bank, Francia
- Espirito Santo Bank, Portugal
- HSBC, México
- Kredit Fonden Eksport, Dinamarca
- La Caixa, España
- Macquire Capital
- Mitsubishi, Japón
- Proparco, Francia
- Nafinsa, México
- PGGM, Holanda
- Santander, México y España

Anexo 7 Permisos otorgados para desarrollo de Proyectos de Generación Eoloeléctrica

PERMISIONARIOS (al 30 de Agosto de 2012)	**CAPACIDAD AUTORIZADA** (MW)
FUERZA EÓLICA DEL ISTMO, S.A. DE C.V.	80.0
ELÉCTRICA DEL VALLE DE MÉXICO, S. DE R.L. DE C.V.	67.5
PARQUES ECOLÓGICOS DE MÉXICO, S.A. DE C.V.	99.5
EOLIATEC DEL ISTMO, S.A.P.I. DE C.V.	164.0
EURUS, S. A. P. I. DE C.V.	300.0
BII NEE STIPA ENERGÍA EÓLICA, S.A. DE C.V.	26.4
INSTITUTO DE INVESTIGACIONES ELÉCTRICAS	5.0
EOLIATEC DEL PACÍFICO, S. A. P. I. DE C. V.	160.0
EÓLICA SANTA CATARINA, S. DE R. L. DE C. V.	22.0
FUERZA Y ENERGÍA BII HIOXO, S. A. DE C. V.	234.0
ENERGÍA ALTERNA ISTMEÑA, S. DE R. L. DE C. V.	215.7
DESARROLLOS EÓLICOS MEXICANOS DE OAXACA 1, S. A. DE C. V.	90.0
ENERGÍAS AMBIENTALES DE OAXACA, S. A. DE C. V.	102.0
ENERGÍAS RENOVABLES VENTA III, S. A. DE C. V.	102.9
MUNICIPIO DE MEXICALI	10.0
CE OAXACA DOS, S. DE R. L. DE C. V.	102.0
CE OAXACA CUATRO, S. DE R. L. DE C. V.	102.0
CE OAXACA TRES, S. DE R. L. DE C. V.	102.0
FUERZA EÓLICA DE SAN MATÍAS, S. A. DE C. V.	20.0
COMPAÑÍA EÓLICA DE TAMAULIPAS, S. A. DE C. V.	54.0
MPG RUMOROSA, S. A. P. I. DE C. V.	72.0
ENERGÍA EÓLICA MAREÑA, S.A. DE C.V.	180.0
GRUPO SOLUCIONES EN ENERGÍAS RENOVABLES SOE DE MÉXICO, S.A. DE C.V.	161.0
DOMINICA ENERGÍA LIMPIA, S. DE R.L. DE C.V.	200.0
FUERZA VIENTO PAPALOAPAN, S. A. P. I. DE C. V.	40.0
STIPA NAYAA, S. A. DE C. V.	74.0
VENTIKA, S. A. DE C. V.	126.0
EÓLICA DE ARRIAGA, S. A. P. I. DE C. V.	28.8
ENERGÍA SIERRA JUÁREZ, S. DE R. L. DE C. V.	156.0
VENTIKA II, S. A. DE C. V.	126.0
DESARROLLOS EÓLICOS MEXICANOS DE OAXACA 2, S. A. P. I. DE C. V., PARQUE EÓLICO PIEDRA LARGA FASE 2	137.5
COMPAÑÍA EOLOELÉCTRICA DE CIUDAD VICTORIA, S. A. DE C. V.	50.0
TOTAL	3,410.0

Anexo 8 Lista de Publicaciones

CONAE (2006). ***Guía de Gestiones para Implementar una Planta de Generación Eléctrica que Utiliza Energías renovables en México***. México

EIA (2012). ***Short-term Energy Outlook***. Consultado en http://www.eia.gov/forecasts/steo/pdf/steo_full.pdf

GEF (2006). ***The GEF Monitoring and Evaluation Policy***. New York.

GEF y UNDP (2008). ***Promotion of Wind Energy: Lessons Learned from International Experience and UNDP-GEF Projects***. New York.

IDB (2012). ***Promotion and Development of Local Wind Technologies in Mexico***. Washington.

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IEA (2012). ***IEA WIND, 2011 Annual Report***. Paris.

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Montejo, E. (2011). ***Reporte Final del Estudio de Aves Residentes y Migratorias del Proyecto Eólico "Bii Nee Stipa II", La Ventosa, Oaxaca***. Xalapa.

SENER (2004). ***Prospectiva del sector eléctrico 2004-2013***. México.

SEMARNAP (1997). ***México, Primera Comunicación Nacional ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático***. México.

UNDP e IIE (2003). ***ProDoc "Action Plan for Removing Barriers to the Full Scale Implementation of Wind Power in Mexico***". Mexico.

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UNDAF MEXICO. ***Marco de Cooperación de las Naciones Unidas para el Desarrollo 2008-2012***.

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World Bank (2003). ***Mexico Large-scale Renewable Energy Development Project***. Washington D.C