# PROPOSAL FOR PDF BLOCK B GRANT

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|---|---|---|---|
| **Country** | : | **Mexico** | |
| **Focal Area** | : | **Climate Change** | |
| **Operational Programs** | : | **Energy Efficiency (OP5), Renewable Energy (OP6), and Transportation (OP11)** | |
| **Project Title** | : | **Second Air Quality Project (APL)** | |
| **Requesting Agency** | : | **World Bank** | |
| **Executing Agency** | : | **BANOBRAS** | |
| **Estimated Project Cost** | : | **US$130 million** | |
| **Financing Plan (tentative)** | : | **GEF-** | **US$20 million** |
| | | **GOM-** | **US$10 million** |
| | | **IBRD-** | **US$70 million** |
| | | **Beneficiaries** | **US$30 million** |
| **Project Duration** | : | **4 years** | |
| **PDF Funding Requested** | : | **US$300,000** | |
| **PDF Co-financing** | : | **US$767,000** | |
| **(includes baseline project)** | | **PHRD Grant-** | **US$517,000** |
| | | **IBRD (IDF)-** | **US$200,000** |
| | | **Participating Institutions -** | **US$ 50,000** |
| **Country endorsement** | : | **Letter from Mexican GEF Focal Point, Ministry of Finance and Public Credit, dated February 24,1999** | |
| **Block A Awarded** | : | **Yes (Solar Water Heating)** | |

## Sector Background

1. Mexico City and its environs (Metropolitan Area of the Valley of Mexico, MAVM) constitute one of the three largest metropolitan areas in the world [1]. There are 18 million inhabitants living in the MAVM, equivalent to about 19% of the country's entire population. The MAVM also produces more than a third of the national GDP and generates, in the process, 4 million tons of waste per year, and 5 million tons of atmospheric pollutants. Thus, it constitutes the largest area-source of pollutants in the country and it is one of the largest in the Americas. Likewise, MAVM's energy consumption represents about 20-25% of the national total. Current projections indicate that population will continue to grow at an annual rate of 1.6% in the short term. Demand for services and energy however, are expected to increase at even higher rates. For example, growth in energy demand is likely to increase at an annual rate of 6-7%, with the fuel demand for the transportation sector increasing at about 5%. This will result, unless controlled, in higher pollution loads to already burdened air and watersheds.

2. Energy use and the airborne emission of pollutants are closely linked. Air pollution in the MAVM can be traced back to the use of hydrocarbons, which represent nearly 88% of the total pollution load into the MAVM air-shed. Most greenhouse and other contaminant gases in the MAVM are generated by fuel use in transportation, industry, services and

[1] The two largest are Tokyo with 20 million and Mumbai with 18 million.

domestic sectors (75%)[2], followed by land use change (12%). Although no greenhouse gas emissions inventory has been specifically made for the MAVM, it is roughly estimated that the city and surrounding areas contribute with nearly 33% to the total national emissions. Out of this total, transportation is considered to represent approximately 40% of total regional GHG emissions. Gasoline and diesel constitute the main fuels currently used in transportation in the MAVM[3].

3. Most power for the MAVM (6,000 MW) is generated outside the region. There are, however, two somewhat inefficient gas-based thermal power plants, located inside the MAVM, with a total generating capacity of 980 MW (600 MW of effective capacity). Expansion plans to cope with the expected increase in electricity demand for MAVM may include a new natural gas-based plant (combined cycle) with a capacity of 1,000 MW, or access to energy generated inside the MAVM perimeter through an array of small and medium fossil fuel plants with a total generating capacity of 1,000 MW. Specific projects to develop these new plants are being designed and assessed by "Luz y Fuerza del Centro", which is the company that provides electricity to the central regions of Mexico.

4. Land use change and forestry account for more than 30% of total national CO2 emissions (data from the 1990 National Greenhouse Gases Inventory by sources and sinks). In the MAVM, land use is also an important source of air pollution (12% of the total). Most of the land use change in MAVM is caused by expansion of urban areas and associated deforestation.

**National Commitment to Address Air Pollution Issues**

5. The GOM has established the following explicit goals in the air pollution area: a) control airborne emission of pollutants, particularly in densely populated urban areas; and b) rationalize and improve the efficiency of use of energy resources. In pursuit of these goals, three energy-related strategies are now being developed: i) improvement and substitution of fuels; ii) energy conservation and improved efficiency in energy use; and iii) promotion of alternative energy sources. These strategies rely on a country-wide effort to save energy and improve its efficiency of use (spearheaded by the National Commission on Energy Savings - CONAE, and facilitated through the Trust Fund for Supporting the Energy Savings Program of the Electric Sector - FIDE).

6. In the MAVM, this commitment is exemplified by the comprehensive program to improve the air quality of MAVM, "Program to Improve Air Quality in the Valley of Mexico 1995-2000 (PROAIRE), launched in 1996". This program aims at 4 major goals: a) Clean Industry, to reduce emissions per unit of production; b) Clean Vehicles, to abate emissions per km; c) Clean Transportation and Improved Urban Planning, to regulate

[2] Pollutants considered here are SO2, CO, NOx, HC, and suspended particulates (TSP).

[3] Transportation demand in MAVM has been sized at 36 million daily person-trips, with public transportation as the main mode (near 78%), followed by private vehicle transportation (21%). Currently there are between 2.5 and 3 million vehicles circulating in MAVM.

circulation and to improve the road system; and d) Ecological Recovery, to abate land erosion. To achieve these goals the program has included regulatory measures (demand-side, fuels and equipment quality), economic instruments, public awareness and education programs, promotion of voluntary reductions, contingency plans, information and monitoring systems, and technological development.

7. With respect to the mitigation of GHG emissions, GOM has undertaken its National Study on Climate Change, which comprised a preliminary national GHG inventory, GHG emissions scenarios, current and future climatic scenarios, and vulnerability studies. A second study has been started, and attempts to update and deepen the first studies, and to develop mitigation and adaptation scenarios. During the last COP of the FCCC, Mexico submitted its First National Communication on Climate Change, presenting the particularities of the country with respect to climate change, and the main measures that are being undertaken at the national level to mitigate climate change. These measures have been divided in three groups:

a) ***Energy Policy***, where 3 type of measures have been designed: (i) Use of improved fuels; (ii) Fuel conversion; and (iii) Energy conservation and efficiency, including industrial co-generation, and mandatory standards for energy consumption and for electrical installations and apparatus;
b) ***Control of Environment and Natural Resources***, with the following programs: (i) Protected Natural Areas, (ii) Forestry Program, supported on recent reforms to the National Forestry Law, to foster forest productive management, (iii) National Reforestation Program, (iv) Integrated System for Environmental Regulation and Administration, to regulate multiple sources of urban pollution, and (v) comprehensive programs to improve air quality, concentrating on cleaner industry, non-polluting vehicles, efficient transportation, urban planning, and environmental recovery; and
c) ***Joint Implementation,*** based on carbon sequestration projects in forests in Sonora, Chiapas, Oaxaca, Campeche, and the Monarch Butterfly Reserve; and a renewable energy efficiency project through the use of wind energy at La Ventosa are being implemented.

**Related Bank and GEF Support.**

8. The Bank is currently in the process of expanding its program of assistance to the GOM in the area of air pollution and its linkage with local and global air quality issues, including climate change. The Bank has already supported PROAIRE through the **First Air Quality Project**, designed to address airborne pollution generated by the transport sector in the MAVM[4]. The proposed **Second Air Quality Project**, under preparation, will continue this

[4] Funded operations include investments in gasoline vapor recovery systems in service stations; and in the incremental cost of new vehicles running on natural gas, and conversion kits for retrofitting used cars.

program of assistance. This PDF request would further support preparation activities focused on global air quality issues.

9. Recently, the Bank, through the Institutional Development Fund (IDF) channeled financial and technical assistance resources to support the strengthening of the Mexican Office for Climate Change Mitigation (MCCM). The objective of the IDF support is the consolidation and strengthening of institutional capacity for implementation of the commitments made by the Mexican Government before the United Nations Framework Convention on Climate Change (UNFCCC). In addition, the Bank with financial support from ESMAP is collaborating with the policy and development areas of the Ministry of Energy in the execution of the Energy-Environment Review (EER). The EER intends to review and assess the relationship between energy and environment sectors and its implications for the economy.

10. With respect to related GEF funding, the Bank is currently preparing proposals for a project on methane capture from landfills in small cities, and for a project on renewable energy technologies for agricultural productivity. The first proposal is aimed at demonstrating the feasibility of self-sustaining modern waste management of municipal solid waste that includes capture and use of landfill gas; the project will support a pilot demonstration site in a small city, with the goal of learning lessons on how to replicate on a larger scale in the future. The second proposal is addressed to agricultural areas of Mexico, and will support the removal of barriers to the adoption of RETs for agricultural production. A GEF/WB PDF Block A was previously approved to assess the opportunities and challenges of solar-based water heating systems for domestic applications in the metropolitan area; the results of this Block A demonstrated the environmental, technical and economic feasibility of this option for MAVM.

11. UNDP is near to completing a project for developing GHG emission coefficients from live systems in central Mexico (excluding MAVM), and a related information management system. A proposal to demonstrate the feasibility of fuel cell buses in transportation in Mexico D.F. is being prepared by UNDP. The latter UNDP project is complementary to the actions contemplated under the Second Air Quality Project, and close coordination between the two initiatives will be maintained during preparation and implementation.

## Objective and Description of the Project

12. PROAIRE is a long term (10 year) program, and the Second Air Quality Project is the next phase in this long-term effort. The long-term program will be divided into multiple phases. Phase I (Air Quality 2) will last approximately 3 years, and will pursue the strengthening of the air quality management institutional framework; the removal of most critical regulatory and policy barriers to air quality improvements; the implementation, and updating of air quality plans (PROAIRE I and development of PROAIRE II); and implementation of pilot projects and strategic plans to foster: i) cleaner fuels and vehicles; ii) cleaner services and industries; iii) ecological recovery of denuded areas; and iv)

improved urban planning and transport. Phase II will be mainly focused to mitigate the pollution peaks from largest stationary and mobile sources of emissions; and to achieve financial viability of key programs and technologies (cleaner fuels and vehicles; cleaner power generation; demand-side driven energy efficiency; and wind erosion control in denuded areas). Phase III will seek the consolidation and increase in stakeholder participation and market share of cleaner fuels and vehicles; and improved urban planning and transport. IBRD/GEF support would be provided through Adaptable Program instruments (loans and grants), whereby progression to each successive phase will depend on satisfactory achievement of performance milestones.

13. The main objective of the proposed **Second Air Quality Project** is to improve the air quality in the MAVM (Mexico City Metropolitan Area), in accordance with key measures included in the long-term PROAIRE program. Substantial gains in air quality in the MAVM are expected, resulting from the promotion of energy conservation, technical improvements in energy efficiency, and increased use of renewable energy resources. The project will also assist in the transition to low emission fossil fuels and the implementation of measures to reduce emissions resulting from changes in land use. Measures to improve the capture of particles through the reduction of wind erosion are also considered; these will have an indirect though important effect on the improvement of the GHG sink capacity of the Valley. A variety of funding sources will be involved in the implementation of the overall PROAIRE, ranging from equity and commercial credit lines from private investors and stakeholders, to loans from IRBD and IDB to support infrastructure and transportation development, as well as to protect and reforest MAVM surrounding areas. Specific measures to achieve reductions in GHG emissions would also be incorporated into the project.

14. Although the project is at an early stage of preparation, potential project components would include institutional support to metropolitan Air Quality management so that the following is accomplished: a) Strengthening of technical capabilities and institutional coordination at the local level required for broader and more effective design and adoption of measures to improve air quality in the MAVM; b) Development of reliable data and establishment of an effective information dissemination system to support decision-making and barrier removal related to air pollution issues; c) Awareness and education programs aimed at improving the support by the public-at-large of air-pollution control campaigns; and d) Project implementation support to the GDM, and to the regional and federal governments.

15. The project would also support a Priority Investment Program, through the financing of feasibility studies, pilot projects, and promotional activities, tentatively targeted at: a) Fuel Substitution in the transport sector to promote the use of cleaner fuels (natural gas, electric) and engines (hybrid), and pilot conversion of motor vehicle engines so that emissions are reduced and efficiency gains are achieved; b) Improved demand-side energy efficiency in buildings management; c) methane capture from metropolitan landfills; d) improvement of power generating efficiency in the MAVM; d) increased public participation in the mitigation of air pollution through large-scale adoption of newer technologies for LPG

systems in domestic stoves, and for domestic solar-based water heating; and e) measures to reduce the contribution of land use changes and wind erosion to the emission of airborne pollutants. GEF will help co-finance incremental costs associated with the implementation of measures related to energy conservation and efficiency in public buildings; solar-based water heating systems; strategic urban planning related to land-use and transport rationalization; and pilot projects for hybrid and electric public vehicles.

**Eligibility and Justification for GEF Support**

16. The Government of Mexico ratified the Framework Convention on Climate Change (FCCC) on March 11, 1993. The Government views this project as a national priority in its climate change mitigation program, as indicated by the national GEF focal point endorsement letter (attached).

17. Activities supported through PROAIRE, will not only result in the abatement of local air pollutants, but would also result in mitigating the emission of greenhouse gases with relatively modest increases in the costs of local programs. The proposed **Second Air Quality Project** intends to provide the technical assistance and financial resources to continue the implementation of priority actions under PROAIRE, while also targeting activities that would result in the abatement of GHG. The incremental costs of these activities would be supported by GEF.

18. The project is consistent with the GEF Climate Change Operational Programs 5 and 6, and follows the preliminary recommendations on the proposed Operational Program 11. The justification for GEF support in each of these categories is summarized below:

- ***OP 5 – Removal of Barriers to Energy Efficiency and Energy Conservation***. The project would support the achievement of OP5 objectives. In particular, the project will remove barriers for the adoption of energy efficient DSM practices and technologies in public buildings, including regulations, designs, and space conditioning, market applications, specifically mentioned in OP 5. As mentioned above, the Government has engaged in a national program for saving and conserving energy, through CONAE. This program is also consistent with the national efforts to abate air pollution. Also consistent with OP5, the project will remove barriers to the adoption of energy-efficient practices and technologies aimed at reducing LPG consumption in domestic installations. Higher molecular weight hydrocarbon emissions will be reduced through the market penetration of energy efficient devices that prevent leaks and minimize the energy intensity of current LPG use; complementary regulations, standards, and promotion activities will help overcome existing barriers.

- ***OP 6 – Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs.*** The project would also support the objectives set out for OP 6, as it includes measures aimed at promoting already commercially available renewable energy technologies (RETs) in Mexico City and its surroundings. In particular, the project will target existing barriers for the market inception of domestic solar-based water heating systems, whose removal will lead to large-scale use of solar

energy in substitution of fossil fuels. The results from the pre-feasibility studies undertaken using a PDF Block A GEF grant show that this is a technically, environmentally, and economically feasible option, though barriers exist to their adoption. The proposed project component will try to overcome those barriers by launching a pilot project, and parallel activities to remove barriers, such as information services, design of innovative financing mechanisms, support of legal and regulatory studies, and development of appropriate standards;

- ***OP 11 – Elements of a GEF Operational Program on Transport.*** A main component of the project, the removal of barriers for market penetration of low-emission and energy-efficient vehicles (hybrids (85%electric-15%CNG), CNG, electric) in MAVM, is fully consistent with OP 11, where hybrids and electric vehicles are specifically mentioned. The project will fund pilot projects using these technologies, as well as other activities designed to overcome existing barriers, such as strategic urban planning, regulatory studies, standards development, and fuel specifications; close coordination with the proposed UNDP fuel cell buses initiative will be maintained at all times.

19. GEF resources would be highly leveraged through IBRD's and GOM's financial support. At this preliminary stage of project preparation, the magnitude of incremental costs associated with the internalization of global issues is not yet clear. This will be one of the primary purposes of the proposed PDF work program.

**Sustainability**

20. The project's local and global environmental benefits are expected to be sustainable over time, due to the strong Governmental commitment to the PROAIRE program and strong participation of private beneficiaries. The ultimate goal of the program is to have market-driven energy efficiency and conservation measures, to look for sustainable ways of improving and substituting fuels, to manage the Valleys' surrounding green areas in a sustainable and environmentally friendly manner, and to support the development of market-based renewable energy technologies.

**Description of Proposed Preparation Activities**

21. Preparation activities for the baseline project are being financed through a PHRD grant and IBRD preparation funds. However, there is a need to complement these resources with additional funds earmarked for the formulation of activities that would generate global environmental benefits as defined in OPs 5, 6, and 11. These preparation activities will focus in particular on the identification of incremental costs and global benefits associated with the project. The activities that will be supported through the proposed Block B grant include:

a) Assessment of the local capability requirement to analyze global dimension of air quality issues in the Mexico City Metropolitan Area (MAVM). This activity will assist in the assessment of local capacity to quantify GHG emissions and sequestration

capability and to identify GHG abatement and mitigation option. National estimates and capability to prepare them exist in the context of the commitments to the UNFCCC but these have not passed down to the regional and local level. In the context of the role of the Valley of Mexico, it is important to have such capability to prepare regional estimates for developing a sustainable plan of action, and to support decision-making processes at the local level.
*GEF funded activities:* assessment of the local capacity requirement to prepare and analyze greenhouse gas abatement and mitigation plan at the local level
*Co-funded*: assessment of the capacity required for the development of a regional balance and sector-wise energy balances for the main energy consuming sectors in the MAVM (transportation, energy generation, industry, services, and domestic) with an identification of options and issues for decision makers at the local level.

b) Assessment and Preparation of Opportunities for Reduction of GHG as an integral part of programs designed for air quality improvements in the MAVM. Specifically, this activity will support efforts geared to evaluate the technical, environmental, and economic viability of potential investments that would provide the most cost-effective opportunities for reductions in the emission of GHG. The grant funds will partially support:

(i) Preparation of investment options for reducing the energy intensity of energy use in the MAVM, through the strategies comprised in the National Effort to Mitigate Climate Change (fuel improvement and substitution, energy efficiency, and alternative fuels); this activity will help reduce the lack of information required for decision-making and planning efforts;
*GEF funding will:* identify action measures consistent with national policy, where private investment is needed; undertake pre-feasibility study of identified options.
*Co-funding will be used to:* Determine private sector interest; legal and regulatory support; identification of investors shortlist and pre-qualification.

(ii) Identification of current and potential barriers for market penetration of low-emission and energy-efficient vehicles in MAVM;
*GEF funding will:* identify and evaluate major barriers for market penetration, including institutional, stakeholders, financial, regulatory, political, technical and economic to suggest suitable measures to overcome them.
*Co-funding will be used for:* legal and regulatory support.

(iii) Preparation of investment opportunities for conversion to energy-efficient buildings, supported by demand-side management, based on the analysis of a sample of public buildings;
*GEF funding will support the:* review of potential sites to launch pilot investment, according to national priorities and plans; determine required investment features (equipment, training, technical assistance); identify potential

energy savings; determine cost-effectiveness and technical feasibility, including potential risks.
*Co-funding will be used to:* Determine public sector involvement; determining private sector interest; legal and regulatory support; identification of investors shortlist and pre-qualification; evaluation of leveraging possibilities.

(iv) Feasibility study for solar-based water heating systems for households;
*GEF funding will be used to:* Based on Block A results, design suitable pilot investments; undertake feasibility study of identified options; determine cost-effectiveness.

(v) Feasibility assessment for reducing LPG leaks and efficiency in domestic installations, distribution and use in the MAVM;
*GEF funding will be used to:* identify potential energy savings from fuel standard changes and pressure changes in distribution; design suitable pilot investments; undertake pre-feasibility study of identified options; determine cost-effectiveness.
*Co-funding will be used to:* conduct feasibility study of domestic devices to reduce leakage; determine private sector interest; design of promotion campaign with households; legal and regulatory support; identification of investors shortlist and pre-qualification.

c) Quantification of incremental costs and externalities associated with efforts to reduce GHG emissions or increase sequestration potential in the MAVM. This activity will support efforts geared to: i) calculation of incremental costs and economic analysis (costs and benefits); and ii) identification and assessment of externalities linked to local/global air pollution.
*GEF funded activities:* identification and quantification of baseline investment related to investments geared to the mitigation of climate change in **Air Quality II**; assessment of externalities derived from priority investment options; calculation of incremental costs;
*Co-funded:* policy and regulatory support; available data collection.

**Outputs**

22. The output of the PDF Grant will include: (a) a summary report providing an overview and the specific objectives of the proposed GHG Emission Reduction efforts in the MAVM; and (b) background reports on activities proposed for GEF funding in each of the proposed OPs (#5, #6, and #11), including: i) technical preparation and design, including recommended phasing; ii) monitoring indicators per activity and triggers for the next phase; iii) costs; iv) economic valuation of incremental costs; and v) estimation of global environmental benefits. This information will be key to produce the GEF grant request.

## Implementation Arrangements

23. Five working groups have been constituted for the design of the **Second Air Quality Project**: i) Energy Group, coordinated by the Secretariat of Energy; ii) Climate Change Group, coordinated by National Institute of Ecology (INE); iii) Land Planning, coordinated by MAVM's Secretariat of Urban Development and Housing; iv) Transportation Group, coordinated by the Metropolitan Commission on Transportation and Road Planning; and v) Natural Gas Group, coordinated by the Secretariat of Environment of the State of Mexico. The Government of Mexico has agreed to provide funds and resources to support activities foreseen both in the preparatory and final GEF project. The World Bank team is providing engineering, economic, and financing analysis skills, institutional specialists and international energy technologies expertise.

## Duration

24. Assuming that the preparation activities described above could start by March 1999, it is estimated that the PDF studies and final report would be finished by September, 1999 in time for appraisal of the integrated baseline/GEF project.

## Budget

25. Total preparation costs of the Second Air Quality Project are estimated at $1.1 million, of which about 73 % would be provided by GOM, the Bank, and other sources, and about 27% would be provided by GEF PDF Block B funding. The GEF support will be allocated primarily on resource data analysis, economic, environmental, and technical feasibility of energy technology options, incremental cost calculations, estimation of global benefits, and preparation of detailed preparation reports. PDF would finance local and international consultants. The attached table presents the expenditure categories and budget allocations for the proposed preparatory phase of the project.

## Cost Table (US$ thousands)

| Activity | GEF | GOM | PHRD | IBRD (IDF) | TOTAL |
|---|---|---|---|---|---|
| **Baseline Preparation Activities for Air Quality II (mostly related to local pollution abatement plans)** | **0** | **0** | **349** | **200** | **549** |
| ▪ Identification and assessment of stakeholders and social assessment; | 0 | 0 | 29 | 50 | 79 |
| ▪ Determination of priority investments; | 0 | 0 | 20 | 20 | 40 |
| ▪ Defining institutional framework for implementation of Air Quality II; | 0 | 0 | 100 | 80 | 180 |
| ▪ Cost effectiveness analysis and Support studies for determining local project impact and design of indicators. | 0 | 0 | 200 | 50 | 250 |
| **Assessment of the Global Dimension of Air Quality issues in the México City Metropolitan Área (MAVM)** | **20** | **8** | **60** | **0** | **88** |

| Activity | GEF | GOM | PHRD | IBRD (IDF) | TOTAL |
|---|---|---|---|---|---|
| • Regional Balance and Sector-wise energy balances for the main energy consuming sectors in the MAVM, including assessment of intensity in energy use and associated greenhouse gas inventory with identification of issues and options for decision-makers; | 20 | 8 | 60 | 0 | 88 |
| **Assessment and Preparation of Investment Opportunities for Reduction of GHG as incremental part of programs designed for air quality improvements in the MAVM** | **172** | **31** | **108** | **0** | **311** |
| • Preparation of feasible investment options for reducing energy intensity (fuel improvement and substitution, energy efficiency, and alternative fuels; | 40 | 6 | 5 | 0 | 51 |
| • Identification of current and potential barriers for market penetration of low-emission and energy-efficient vehicles in MAVM (hybrids (85%electric-15%CNG), CNG, electric); [OP.11] | 25 | 4 | 5 | 0 | 34 |
| • Pre-feasibiltiy study for conversion to energy-efficient buildings, supported by demand-side management, based on the analysis of a sample of public buildings; [OP.5] | 30 | 3 | 0 | 0 | 33 |
| • Feasibility study for investement of solar-based water heating systems for households; [OP.6] | 42 | 5 | 3 | 0 | 50 |
| ▪ Pre-feasibility assessment of reducing LPG leaks in domestic installations, distribution and use in the MAVM; | 35 | 5 | 25 | 0 | 65 |
| • Pre-feasibility study for reduction in Methane emission from landfill sites; | 0 | 3 | 30 | 0 | 33 |
| • Pre-feasibility study to reduce GHG emissions in power plants in the MAVM. | 0 | 5 | 40 | 0 | 45 |
| **Quantification of incremental costs and externalities associated with efforts to reduce GHG emissions or increase sequestration potential in the MAVM** | **73** | **7** | **0** | **0** | **80** |
| ▪ Identification and assessment of externalities linked to priority investment options, and calculation of incremental costs and economic analysis (costs and benefits) | 73 | 7 | 0 | 0 | 80 |
| Supervision and preparation of a final reports summarizing findings and recommendations for project design. | 35 | 4 | 0 | 0 | 39 |
| **TOTAL** | **300** | **50** | **517** | **200** | **1067** |