

# PMR Operational Report

|                             |                            |   |          |
|-----------------------------|----------------------------|---|----------|
| <b>Operation Number</b>     | ME-G1012                   | <b>Chief of Operations Validation Date</b>    | 04/30/18 |
| <b>Year- PMR Cycle</b>      | Second period Jan-Dec 2017 | <b>Division Chief Validation Date</b>         | 05/02/18 |
| <b>Last Update</b>          | 05/02/18                   | <b>Country Representative Validation Date</b> | 05/04/18 |
| <b>PMR Validation Stage</b> | Draft                      |   |          |

## Basic Data

### Operation Profile

|                           |  |   |                              |
|---------------------------|--|---|------------------------------|
| <b>Operation Name</b>     | GEF Program for the Implementation of Prioritized ESC Projects in Three Mexican Cities | <b>Loan Number</b>                      | GRT/FM-16409-ME              |
| <b>Executing Agency</b>   | BANCO NACIONAL DE OBRAS Y SERVICIOS PUBLICOS, S.N.C.                                   | <b>Sector/Subsector</b>                 | EN - ENERGY                  |
| <b>Team Leader</b>        | MARIA EUGENIA DE LA PENA   | <b>Overall Stage</b>                    | Approved/Pending Eligibility |
| <b>Operation Type</b>     | Investment Grants  | <b>Country</b>                          | MEXICO                       |
| <b>Lending Instrument</b> |  | <b>Convergence related Operation(s)</b> |                              |
| <b>Borrower</b>           | ESTADOS UNIDOS MEXICANOS   |   |                              |

## Environmental and Social Safeguards

|   |   |  |    |
|---|---|--|----|
| <b>Impacts Category</b>                         | B | <b>Was/Were the objective(s) of this operation reformulated?</b> | NO |
| <b>Safeguard Performance Rating</b>             |   | <b>Date of approval</b>  |    |
| <b>Safeguard Performance Rating - Rationale</b> |   |  |    |

## Financial Data

| Item       | Total Cost and Source |             |                   |                        |                     | Available Funds (US\$) |                      |        |                    |
|------------|-----------------------|-------------|-------------------|------------------------|---------------------|------------------------|----------------------|--------|--------------------|
|            | Original IDB          | Current IDB | Local Counterpart | Co-Financing / Country | Total Original Cost | Current IDB            | Disb. Amount to Date | % Disb | Undisbursed Amount |
| ME-G1012   | 13,761,468            | 13,761,468  | 0                 | 0                      | 13,761,468          | 13,761,468             | 0                    | 0.00%  | 13,761,468         |
| Aggregated | 13,761,468            | 13,761,468  | 0                 | 0                      | 13,761,468          | 13,761,468             | 0                    | 0.00%  | 13,761,468         |

## Expense Categories by Loan Contract (cumulative values)

Please note that the Overall Stage represents the stage of the operation at the time of this report's publication, which might not necessarily match the stage of the operation during the PMR Cycle to which the report pertains. Please also note that inactive indicators and outputs are not displayed; totals in the actual cost table may not match the sum of the cost of the outputs displayed, due to the cost of inactive outputs.

## PMR Operational Report

### RESULTS MATRIX

### IMPACTS

No information available for this section

## PMR Operational Report

### RESULTS MATRIX

#### OUTCOMES

**Outcome Nbr. 0:** 1. Improve and increase the solid waste management and the generation of low-carbon energy to reduce greenhouse emissions in Xalapa

**Observation:**

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | 2022     | EOP 2022 |
|-----------|---|-----------------|----------|---------------|------|------|------|------|------|------|----------|----------|
| 0.0       | Tons of greenhouse gas emissions avoided associated to energy production by the biodigester plant in Xalapa | Tons of CO2eq/y | 0.00     | 2017          | P    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,792.00 | 1,792.00 |
|           |   |                 |          |               | P(a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1,792.00 | 1,792.00 |
|           |   |                 |          |               | A    | 0.00 |      |      |      |      |          | 0.00     |

#### Details

**Means of verification:** \*Annual Average. The information will be provided by Banobras based on the reports delivered by the operator

|                   |    |                      |    |
|-------------------|----|----------------------|----|
| <b>Pro-Gender</b> | No | <b>Pro-Ethnicity</b> | No |
|-------------------|----|----------------------|----|

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | 2022   | EOP 2022 |
|-----------|---|-----------------|----------|---------------|------|------|------|------|------|------|--------|----------|
| 0.1       | Tons of municipal solid waste disposed at the sanitary landfill of Xalapa | ton/day         | 490.00   | 2017          | P    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 430.00 | 430.00   |
|           |   |                 |          |               | P(a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 430.00 | 430.00   |
|           |   |                 |          |               | A    | 0.00 |      |      |      |      |        | 0.00     |

#### Details

**Means of verification:** Operation log of incoming and outgoing solid waste conducted by operator and included in the Final Evaluation

|                   |    |                      |    |
|-------------------|----|----------------------|----|
| <b>Pro-Gender</b> | No | <b>Pro-Ethnicity</b> | No |
|-------------------|----|----------------------|----|

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | 2022     | EOP 2022 |
|-----------|---|-----------------|----------|---------------|------|------|------|------|------|------|----------|----------|
| 0.2       | Power production from low-carbon energy sources in Xalapa | MWh/year        | 0.00     | 2017          | P    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3,962.00 | 3,962.00 |
|           |   |                 |          |               | P(a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3,962.00 | 3,962.00 |
|           |   |                 |          |               | A    | 0.00 |      |      |      |      |          | 0.00     |

#### Details

**Means of verification:** Power: 452 KW. Operation log tracked by the meter and included in the Final Evaluatio

|                   |    |                      |    |
|-------------------|----|----------------------|----|
| <b>Pro-Gender</b> | No | <b>Pro-Ethnicity</b> | No |
|-------------------|----|----------------------|----|

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | 2022  | EOP 2022 |
|-----------|---|-----------------|----------|---------------|------|------|------|------|------|------|-------|----------|
| 0.3       | Tons of compost produced by the biodigester in Xalapa | ton/day         | 0.00     | 2017          | P    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 | 26.00    |
|           |   |                 |          |               | P(a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.00 | 26.00    |
|           |   |                 |          |               | A    | 0.00 |      |      |      |      |       | 0.00     |

#### Details

## PMR Operational Report

### RESULTS MATRIX

#### OUTCOMES

**Means of verification:** Operation log of incoming and outgoing compost conducted by the operator, and included in the Final Evaluation

**Pro-Gender** No **Pro-Ethnicity** No

**Outcome Nbr. 1:** Increase the production of low carbon energy to reduce greenhouse gas emissions in La Paz

**Observation:**

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019     | 2020     | 2021 | 2022 | EOP 2022 |
|-----------|---|-----------------|----------|---------------|------|------|------|----------|----------|------|------|----------|
| 1.0       | Tons of greenhouse gas emissions avoided through solar panels in La Paz | Tons of CO2eq/y | 0.00     | 2017          | P    | 0.00 | 0.00 | 1,692.00 | 1,684.00 | 0.00 | 0.00 | 1,589.00 |
|           |   |                 |          |               | P(a) | 0.00 | 0.00 | 1,692.00 | 1,684.00 | 0.00 | 0.00 | 1,589.00 |
|           |   |                 |          |               | A    | 0.00 |      |          |          |      |      | 0.00     |

#### Details

**Means of verification:** \*Annual Average during project lifetime taking into account public buildings from first phase. Semester Progress Report of overall production

**Pro-Gender** No **Pro-Ethnicity** No

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019     | 2020     | 2021 | 2022 | EOP 2022 |
|-----------|---|-----------------|----------|---------------|------|------|------|----------|----------|------|------|----------|
| 1.1       | Power production from low-carbon energy sources in La Paz | MWh/y           | 0.00     | 2017          | P    | 0.00 | 0.00 | 1,959.00 | 1,949.00 | 0.00 | 0.00 | 1,840.00 |
|           |   |                 |          |               | P(a) | 0.00 | 0.00 | 1,959.00 | 1,949.00 | 0.00 | 0.00 | 1,840.00 |
|           |   |                 |          |               | A    | 0.00 |      |          |          |      |      |          |

#### Details

**Means of verification:** \*Annual Average during project lifetime taking into account public buildings from first phase. Operational logs from meter readings aggregated over all PV plants

**Pro-Gender** No **Pro-Ethnicity** No

**Outcome Nbr. 3:** Improve and promote solid waste management –control and recovery of materials- in order to encourage the generation of low-carbon energy and the reduction of GHG emissions

**Observation:**

| Indicator |  | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | EOP 2022 |
|-----------|--|-----------------|----------|---------------|------|------|------|------|------|------|------|----------|
| 3.0       | Number of times that the pilot projects have served as a reference for other projects in the country | # of times      | 0.00     | 2017          | P    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.00     |
|           |  |                 |          |               | P(a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.00     |
|           |  |                 |          |               | A    | 0.00 |      |      |      |      |      |          |

#### Details

**Means of verification:** The information will be provided by Banobras and included in the Final Evaluation

**Pro-Gender** No **Pro-Ethnicity** No

**Outcome Nbr. 2:** The municipality and stakeholders have the technical, environmental and economic information needed to make a decision on whether or not make the investment in Campeche

**Observation:**

## PMR Operational Report

### RESULTS MATRIX

#### OUTCOMES

| Indicator   |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | EOP 2022 |
|---|---|-----------------|----------|---------------|------|------|------|------|------|------|------|----------|
| 2.0   | Technical, environmental and economic studies agreed and approved by the Municipality and stakeholders to build the Campeche infrastructure project | # of times      | 0.00     | 2017          | P    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00     |
|   |   |                 |          |               | P(a) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00     |
|   |   |                 |          |               | A    | 0.00 |      |      |      |      |      |          |
| Details   |   |                 |          |               |      |      |      |      |      |      |      |          |
| Means of verification: Report of the municipality approving the project |   |                 |          |               |      |      |      |      |      |      |      |          |
| Pro-Gender  |   | No              |          | Pro-Ethnicity |      | No   |      |      |      |      |      |          |

## RESULTS MATRIX

## OUTPUTS: ANNUAL PHYSICAL AND FINANCIAL PROGRESS

## Component Nbr. 1 Biodigester for Xalapa's solid waste management system operating

|     | Output   | Unit of Measure |      | PHYSICAL PROGRESS |          | FINANCIAL PROGRESS |           |
|-----|--|-----------------|------|-------------------|----------|--------------------|-----------|
|     |  |                 |      | 2017              | EOP 2022 | 2017               | EOP 2022  |
| 1.1 | Final design of the biodigester plant in Xalapa finalized        | study           | P    | 0                 | 1        | 0                  | 200,000   |
|     |  |                 | P(a) | 0                 | 1        | 0                  | 200,000   |
|     |  |                 | A    | 0                 | 0        | 0                  | 0         |
| 1.2 | Biodigester for Xalapa's solid waste management system operating | Biodigester     | P    | 0                 | 1        | 0                  | 3,390,547 |
|     |  |                 | P(a) | 0                 | 1        | 0                  | 3,390,547 |
|     |  |                 | A    | 0                 | 0        | 0                  | 0         |
| 1.3 | Preliminary works executed                                       | works           | P    | 0                 | 1        | 0                  | 3,390,546 |
|     |  |                 | P(a) | 0                 | 1        | 0                  | 3,390,546 |
|     |  |                 | A    | 0                 | 0        | 0                  | 0         |
| 1.4 | Biodigester and energy production plant in Xalapa built          | Plant           | P    | 0                 | 1        | 0                  | 200,000   |
|     |  |                 | P(a) | 0                 | 1        | 0                  | 200,000   |
|     |  |                 | A    | 0                 | 0        | 0                  | 0         |

## Component Nbr. 2 Solar photovoltaic capacity for self-supply in public buildings and schools in La Paz

|     | Output   | Unit of Measure |      | PHYSICAL PROGRESS |          | FINANCIAL PROGRESS |           |
|-----|--|-----------------|------|-------------------|----------|--------------------|-----------|
|     |  |                 |      | 2017              | EOP 2022 | 2017               | EOP 2022  |
| 2.1 | kW of generation capacity installed – low carbon sources in La Paz | KW              | P    | 0                 | 2,580    | 0                  | 4,500,000 |
|     |  |                 | P(a) | 0                 | 2,580    | 0                  | 4,500,000 |
|     |  |                 | A    | 0                 | 0        | 0                  | 0         |

## Component Nbr. 3 Comprehensive program for the sanitation of the Bay of Campeche

|     | Output  | Unit of Measure |      | PHYSICAL PROGRESS |          | FINANCIAL PROGRESS |           |
|-----|---|-----------------|------|-------------------|----------|--------------------|-----------|
|     |   |                 |      | 2017              | EOP 2022 | 2017               | EOP 2022  |
| 3.1 | Detailed-design of the sanitation infrastructure in Campeche completed considering climate change adaptation measures | Study           | P    | 0                 | 1        | 0                  | 1,000,000 |
|     |   |                 | P(a) | 0                 | 1        | 0                  | 1,000,000 |
|     |   |                 | A    | 0                 | 0        | 0                  | 0         |

## Component Nbr. 4 Institutional strengthening, dissemination and communication

|     | Output   | Unit of Measure                |      | PHYSICAL PROGRESS |          | FINANCIAL PROGRESS |          |
|-----|--|--------------------------------|------|-------------------|----------|--------------------|----------|
|     |  |                                |      | 2017              | EOP 2022 | 2017               | EOP 2022 |
| 4.1 | Biodigester and solar photovoltaic power plants seminars, conference, capacity building and lesson-learned activities conducted    | Seminars, conference, activiti | P    | 0                 | 3        | 0                  | 30,000   |
|     |  |                                | P(a) | 0                 | 3        | 0                  | 30,000   |
|     |  |                                | A    | 0                 | 0        | 0                  | 0        |
| 4.2 | Biodigester, solar photovoltaic power plants, and sanitation technical training workshops in Xalapa, La Paz and Campeche conducted | Trainings                      | P    | 0                 | 3        | 0                  | 50,000   |
|     |  |                                | P(a) | 0                 | 3        | 0                  | 50,000   |
|     |  |                                | A    | 0                 | 0        | 0                  | 0        |
| 4.3 | Technical guidelines developed to replicate the biodigester technology   | Document                       | P    | 0                 | 1        | 0                  | 50,000   |
|     |  |                                | P(a) | 0                 | 1        | 0                  | 50,000   |
|     |  |                                | A    | 0                 | 0        | 0                  | 0        |
| 4.4 | Performance assessment study of solar PV technologies in schools developed   | Report                         | P    | 0                 | 1        | 0                  | 50,000   |
|     |  |                                | P(a) | 0                 | 1        | 0                  | 50,000   |
|     |  |                                | A    | 0                 | 0        | 0                  | 0        |
| 4.5 | Review paper with lessons learned from the experience on photovoltaic plants in public schools developed                           | Paper                          | P    | 0                 | 1        | 0                  | 50,000   |
|     |  |                                | P(a) | 0                 | 1        | 0                  | 50,000   |
|     |  |                                | A    | 0                 | 0        | 0                  | 0        |

Other Cost

|  |                       |      |  |  |   |         |
|--|-----------------------|------|--|--|---|---------|
|  | Administración        | P    |  |  | 0 | 635,375 |
|  |                       | P(a) |  |  | 0 | 635,375 |
|  |                       | A    |  |  | 0 | 0       |
|  | Auditoria             | P    |  |  | 0 | 75,000  |
|  |                       | P(a) |  |  | 0 | 75,000  |
|  |                       | A    |  |  | 0 | 0       |
|  | Monitoreo             | P    |  |  | 0 | 60,000  |
|  |                       | P(a) |  |  | 0 | 60,000  |
|  |                       | A    |  |  | 0 | 0       |
|  | Evaluación Intermedia | P    |  |  | 0 | 30,000  |
|  |                       | P(a) |  |  | 0 | 30,000  |
|  |                       | A    |  |  | 0 | 0       |
|  | Evaluación Final      | P    |  |  | 0 | 50,000  |
|  |                       | P(a) |  |  | 0 | 50,000  |
|  |                       | A    |  |  | 0 | 0       |

Total Cost

|  |            |      |  |  |   |            |
|--|------------|------|--|--|---|------------|
|  | Total Cost | P    |  |  | 0 | 13,761,468 |
|  |            | P(a) |  |  | 0 | 13,761,468 |
|  |            | A    |  |  | 0 | 0          |

### CHANGES TO THE MATRIX

No information available for this section