

# PMR Operational Report

|                             |                                  |   |          |
|-----------------------------|----------------------------------|---|----------|
| <b>Operation Number</b>     | NI-L1094                         | <b>Chief of Operations Validation Date</b>    | 10/10/18 |
| <b>Year- PMR Cycle</b>      | First period Jan-Jun 2018        | <b>Division Chief Validation Date</b>         |          |
| <b>Last Update</b>          | 10/03/18                         | <b>Country Representative Validation Date</b> |          |
| <b>PMR Validation Stage</b> | Validated by Chief of Operations |   |          |

## Basic Data

### Operation Profile

|                           |   |   |   |
|---------------------------|---|---|---|
| <b>Operation Name</b>     | Geothermal exploration program, Coverage and Improved Power Transmission  | <b>Loan Number</b>                      | 3727/BL-NI, 3728/KI-NI, 3729/OC-NI                                |
| <b>Executing Agency</b>   | MINISTERIO DE ENERGIA Y MINAS, EMPRESA NACIONAL DE TRANSMISIÓN ELÉCTRICA, EMPRESA NACIONAL DE TRANSMISIÓN ELÉCTRICA | <b>Sector/Subsector</b>                 | EN-TER - ENERGY-NEW THERMAL POWER PLANTS                          |
| <b>Team Leader</b>        | BALDIVIESO, HECTOR  | <b>Overall Stage</b>                    | Disbursing (From eligibility until all the Operations are closed) |
| <b>Operation Type</b>     | Loan Operation  | <b>Country</b>                          | NICARAGUA   |
| <b>Lending Instrument</b> | Investment Loan   | <b>Convergence related Operation(s)</b> | NI-G1006, NI-G1007  |
| <b>Borrower</b>           | REPUBLICA DE NICARAGUA  |   |   |

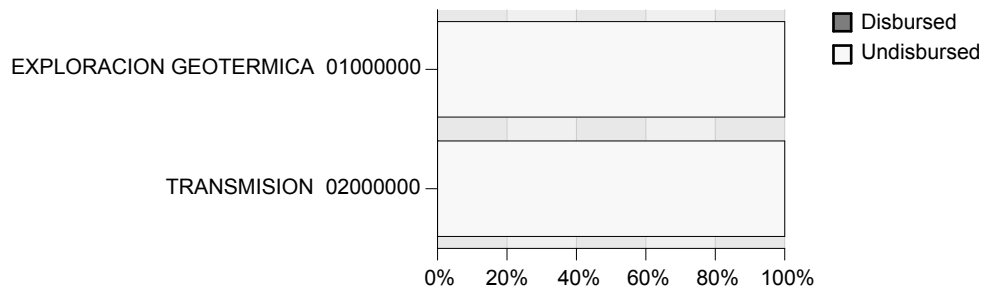
## Environmental and Social Safeguards

|   |  |  |    |
|---|--|--|----|
| <b>Impacts Category</b>                         | A  | <b>Was/Were the objective(s) of this operation reformulated?</b> | NO |
| <b>Safeguard Performance Rating</b>             | Partially Satisfactory   | <b>Date of approval</b>  |    |
| <b>Safeguard Performance Rating - Rationale</b> | Algunas actividades no fueron realizadas en conformidad completa con las salvaguardas del BID y con buenas prácticas del sector. Como la Etapa 1 no fue financiada por la presente operación, el ejecutor debería tomar estos errores como lecciones aprendidas para la ejecución de la Etapa 2. |  |    |

## 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 |
| NI-G1006          | 9,524,000             | 9,524,000         | 0                 | 0                      | 9,524,000           | 9,524,000              | 0                    | 0.00%        | 9,524,000          |
| NI-G1007          | 6,750,000             | 6,750,000         | 0                 | 0                      | 6,750,000           | 6,750,000              | 0                    | 0.00%        | 6,750,000          |
| NI-L1094          | 76,370,000            | 76,370,000        | 10,009,000        | 17,024,000             | 103,403,000         | 76,370,000             | 3,484,726            | 4.56%        | 72,885,274         |
| <b>Aggregated</b> | <b>92,644,000</b>     | <b>92,644,000</b> | <b>10,009,000</b> | <b>17,024,000</b>      | <b>119,677,000</b>  | <b>92,644,000</b>      | <b>3,484,726</b>     | <b>3.76%</b> | <b>89,159,274</b>  |

## 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:** Desarrollo del potencial geotérmico de Nicaragua de forma ambiental y financieramente sostenible.

**Observation:** Medios de verificación: (1.1) Estudio de factibilidad del campo Cosigüina aprobado por el MEM y ENEL; (1.2) Contrato de concesión entre el MEM y un inversionista privado o público-privado firmado por ambas partes

| Indicator |  | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021  | EOP 2021 |
|-----------|--|-----------------|----------|---------------|------|------|------|------|------|-------|----------|
| 0.0       | Potencial geotérmico para generación eléctrica explorado a nivel de factibilidad en el Campo Cosigüina | MW              | 0.00     | 2016          | P    |      |      |      |      | 40.00 | 40.00    |
|           |  |                 |          |               | P(a) |      |      |      |      |       |          |
|           |  |                 |          |               | A    | 0.00 |      |      |      |       |          |

#### Details

|            |    |               |    |
|------------|----|---------------|----|
| Pro-Gender | No | Pro-Ethnicity | No |
|------------|----|---------------|----|

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | EOP 2021 |
|-----------|---|-----------------|----------|---------------|------|------|------|------|------|------|----------|
| 0.1       | Concesiones de explotación geotérmica otorgadas | Unidad          | 0.00     | 2016          | P    |      |      |      |      | 1.00 | 1.00     |
|           |   |                 |          |               | P(a) |      |      |      |      |      |          |
|           |   |                 |          |               | A    | 0.00 |      |      |      |      |          |

#### Details

|            |    |               |    |
|------------|----|---------------|----|
| Pro-Gender | No | Pro-Ethnicity | No |
|------------|----|---------------|----|

**Outcome Nbr. 1:** Asegurar el suministro de energía eléctrica continua, confiable, accesible y costo efectiva en las zonas beneficiadas por la ampliación de la infraestructura eléctrica del programa

**Observation:** Medios de verificación: (2.1) Informes estadísticos y técnicos del Centro Nacional de Despacho de Carga (CNDC)

| Indicator |  | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021 | EOP 2021 |
|-----------|--|-----------------|----------|---------------|------|------|------|------|------|------|----------|
| 1.0       | Energía no servida en las zonas de influencia del programa | GWh             | 1.18     | 2016          | P    |      |      |      |      | 0.08 | 0.08     |
|           |  |                 |          |               | P(a) |      |      |      |      |      |          |
|           |  |                 |          |               | A    | 2.59 |      |      |      |      |          |

#### Details

|            |    |               |    |
|------------|----|---------------|----|
| Pro-Gender | No | Pro-Ethnicity | No |
|------------|----|---------------|----|

**Outcome Nbr. 2:** Optimizar la capacidad de carga de energía del Sistema de Interconexión Eléctrica de los Países de América Central (SIEPAC) en los tramos ubicados en Nicaragua

**Observation:** Medios de verificación: (3.1) y (3.2) La meta asume que además de los refuerzos incluidos bajo el presente programa, se construyen todos los refuerzos previstos para el SIN. Informe del Ente Operador Regional (EOR). La capacidad de transferencia será verificada mediante informes estadísticos y técnicos del EOR.

| Indicator |   | Unit of Measure | Baseline | Baseline Year |      | 2017 | 2018 | 2019 | 2020 | 2021   | EOP 2021 |
|-----------|---|-----------------|----------|---------------|------|------|------|------|------|--------|----------|
| 2.0       | Máxima Capacidad de Transferencia Regional tramo Nicaragua-Honduras N-S aumentada | MW              | 120.00   | 2016          | P    |      |      |      |      | 300.00 | 300.00   |
|           |   |                 |          |               | P(a) |      |      |      |      |        |          |

## PMR Operational Report

### RESULTS MATRIX

#### OUTCOMES

|            |   |                 |          |               |               |        |      |      |      |        |          |
|------------|---|-----------------|----------|---------------|---------------|--------|------|------|------|--------|----------|
| 2.0        | Máxima Capacidad de Transferencia Regional tramo Nicaragua-Honduras N-S aumentada   | MW              | 120.00   | 2016          | A             | 180.00 |      |      |      |        |          |
| Details    |   |                 |          |               |               |        |      |      |      |        |          |
| Pro-Gender |   | No              |          |               | Pro-Ethnicity |        | No   |      |      |        |          |
| Indicator  |   | Unit of Measure | Baseline | Baseline Year |               | 2017   | 2018 | 2019 | 2020 | 2021   | EOP 2021 |
| 2.1        | Máxima Capacidad de Transferencia Regional tramo Nicaragua-Costa Rica S-N aumentada | MW              | 100.00   | 2016          | P             |        |      |      |      | 300.00 | 300.00   |
|            |   |                 |          |               | P(a)          |        |      |      |      |        |          |
|            |   |                 |          |               | A             | 50.00  |      |      |      |        |          |
| Details    |   |                 |          |               |               |        |      |      |      |        |          |
| Pro-Gender |   | No              |          |               | Pro-Ethnicity |        | No   |      |      |        |          |

## RESULTS MATRIX

## OUTPUTS: ANNUAL PHYSICAL AND FINANCIAL PROGRESS

## Component Nbr. 1 Componente 1. Desarrollo geotérmico

|     | Output  | Unit of Measure |      | PHYSICAL PROGRESS |          | FINANCIAL PROGRESS |            |
|-----|---|-----------------|------|-------------------|----------|--------------------|------------|
|     |   |                 |      | 2018              | EOP 2021 | 2018               | EOP 2021   |
| 1.1 | Estudio de campo previo a la fase de factibilidad del campo Cosigüina | #de estudios    | P    | 1                 | 1        | 1,425,450          | 3,425,450  |
|     |   |                 | P(a) |                   | 1        | 660,000            | 3,425,450  |
|     |   |                 | A    | 0                 | 0        | 0                  | 0          |
| 1.2 | Pozos exploratorios de diámetro comercial perforados                  | # de pozos      | P    |                   | 5        |                    | 33,000,000 |
|     |   |                 | P(a) |                   | 5        | 0                  | 33,000,000 |
|     |   |                 | A    | 0                 | 0        | 0                  | 0          |
| 1.3 | Estudio de factibilidad para la explotación del campo Cosigüina       | # de estudios   | P    |                   | 1        |                    | 750,000    |
|     |   |                 | P(a) |                   | 1        | 0                  | 750,000    |
|     |   |                 | A    | 0                 | 0        | 0                  | 0          |
| 1.4 | Estudio de mitigación de riesgos de exploración geotérmica diseñado   | # de estudios   | P    |                   | 1        |                    | 500,000    |
|     |   |                 | P(a) |                   | 1        | 0                  | 500,000    |
|     |   |                 | A    | 0                 | 0        | 0                  | 0          |

## Component Nbr. 2 Componente 2. Mejoras en la infraestructura eléctrica de transmisión

|     | Output  | Unit of Measure      |      | PHYSICAL PROGRESS |          | FINANCIAL PROGRESS |           |
|-----|---|----------------------|------|-------------------|----------|--------------------|-----------|
|     |   |                      |      | 2018              | EOP 2021 | 2018               | EOP 2021  |
| 2.1 | Subestaciones Villa Nueva y El Sauce construidas y en operación   | # de subestaciones   | P    |                   | 2        |                    | 6,608,900 |
|     |   |                      | P(a) |                   | 2        | 0                  | 6,608,900 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.2 | Línea de transmisión en 138 kV El Sauce – Villanueva construida y en operación  | km                   | P    |                   | 38       |                    | 7,662,600 |
|     |   |                      | P(a) |                   | 38       | 0                  | 7,662,600 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.3 | Subestación Sebaco ampliada y en operación  | # de subestaciones   | P    |                   | 1        | 2,488,000          | 8,294,600 |
|     |   |                      | P(a) |                   | 1        | 0                  | 8,294,600 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.4 | Subestaciones San Benito, Catarina, Diriamba, Acahualinca y Ticuantepe II construidas y en operación  | # de subestaciones   | P    |                   | 5        | 2,544,000          | 8,480,400 |
|     |   |                      | P(a) |                   | 5        | 4,180,000          | 8,480,400 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.5 | Subestación Ticuantepe I construida y en operación  | # de subestaciones   | P    |                   | 1        |                    | 5,020,500 |
|     |   |                      | P(a) |                   | 1        | 0                  | 5,020,500 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.6 | Línea de transmisión conexa a la subestación Ticuantepe I construida  | km                   | P    |                   | 2        |                    | 764,200   |
|     |   |                      | P(a) |                   | 2        | 0                  | 764,200   |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.7 | Transformador móvil de 40 MVA adquirido   | # de transformadores | P    |                   | 1        | 300,000            | 1,000,000 |
|     |   |                      | P(a) |                   | 1        | 235,000            | 1,000,000 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.8 | Línea de transmisión de 230 kV con capacidad de transmisión incrementada mediante el replazo de conductores en los tramos Leon – Frontera Honduras y Amayo – Frontera Costa Rica, en operación. | km                   | P    |                   | 97       | 2,218,000          | 7,394,600 |
|     |   |                      | P(a) |                   | 97       | 1,320,000          | 2,837,000 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |
| 2.9 | Línea de transmisión de 230 kV con capacidad de transmisión incrementada mediante levantamiento LIDAR y retesado de conductor, en operación.  | km                   | P    |                   | 213      |                    | 4,180,000 |
|     |   |                      | P(a) |                   | 213      | 390,000            | 4,180,000 |
|     |   |                      | A    | 0                 | 0        | 0                  | 0         |

## Other Cost

|  |   |      |  |  |         |           |
|--|---|------|--|--|---------|-----------|
|  | Ingeniería, Supervisión y Administración - C1 | P    |  |  | 505,000 | 3,505,000 |
|  |   | P(a) |  |  | 20,000  | 3,505,000 |
|  |   | A    |  |  | 0       | 0         |
|  | Gastos financieros - C1                       | P    |  |  | 57,000  | 1,474,400 |
|  |   | P(a) |  |  | 0       | 1,474,400 |
|  |   | A    |  |  | 0       | 0         |
|  | Gastos imprevistos - C1                       | P    |  |  |         | 3,425,450 |
|  |   | P(a) |  |  | 0       | 3,425,450 |
|  |   | A    |  |  | 0       | 0         |
|  | Ingeniería, Supervisión y Administración - C2 | P    |  |  | 301,300 | 2,131,300 |
|  |   | P(a) |  |  | 212,000 | 2,131,300 |
|  |   | A    |  |  | 0       | 0         |
|  | Gastos financieros - C2                       | P    |  |  | 82,000  | 2,124,700 |
|  |   | P(a) |  |  | 1,000   | 2,124,700 |
|  |   | A    |  |  | 0       | 0         |
|  | Gastos imprevistos - C2                       | P    |  |  |         | 3,660,000 |
|  |   | P(a) |  |  | 0       | 3,660,000 |
|  |   | A    |  |  | 0       | 0         |

**Total Cost**

|  |            |      |  |  |           |             |
|--|------------|------|--|--|-----------|-------------|
|  | Total Cost | P    |  |  | 9,920,750 | 103,402,100 |
|  |            | P(a) |  |  | 7,018,000 | 98,844,500  |
|  |            | A    |  |  | 0         | 0           |

### CHANGES TO THE MATRIX

No information available for this section