

# PMR Operational Report

<b>Operation Number</b>	BR-L1442	<b>Chief of Operations Validation Date</b>	04/06/17
<b>Year- PMR Cycle</b>	Second period Jan-Dec 2016	<b>Division Chief Validation Date</b>	04/07/17
<b>Last Update</b>	04/05/17	<b>Country Representative Validation Date</b>	04/14/17
<b>PMR Validation Stage</b>	Draft		

## Basic Data

### Operation Profile

<b>Operation Name</b>	Financing Program for Sustainable Energy	<b>Loan Number</b>	3866/OC-BR
<b>Executing Agency</b>	BANCO NACIONAL DO DESENVOLVIMENTO ECONOMICO E SOCIAL	<b>Sector/Subsector</b>	FM-BNK - FINANCIAL MARKETS-BANKING MARKET DEVELOPMENT
<b>Team Leader</b>	NETTO DE A. C. SCHNEIDER,MARIA E.	<b>Overall Stage</b>	Approved
<b>Operation Type</b>	Loan Operation	<b>Country</b>	BRAZIL
<b>Lending Instrument</b>	Investment Loan	<b>Convergence related Operation(s)</b>	
<b>Borrower</b>	BANCO NACIONAL DO DESENVOLVIMENTO ECONOMICO E SOCIAL		

## Environmental and Social Safeguards

<b>Impacts Category</b>	B13	<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>	The project team has identified three wind farm complexes for potential financing. All three complexes demonstrate material compliance with IDB policies with only minor upgrades required to: hazardous waste storage, general cleanliness of the facility, and creating a more formalized grievance redress mechanism. See Supervision Report for more details.		

## 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
BR-L1442	750,000,000	750,000,000	150,000,000	0	900,000,000	750,000,000	0	0.00%	750,000,000
<b>Aggregated</b>	<b>750,000,000</b>	<b>750,000,000</b>	<b>150,000,000</b>	<b>0</b>	<b>900,000,000</b>	<b>750,000,000</b>	<b>0</b>	<b>0.00%</b>	<b>750,000,000</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.

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### RESULTS MATRIX

#### IMPACTS

**Impact Nbr. 0:** Promote investments in sustainable energy projects to contribute to meet Brazil's goal

##### Observation:

Indicator		Unit of Measure	Baseline	Baseline Year		EOP 2021
0.0	Power generation from Alternative Renewable Energy (ARE) sources (excludes hydro) in Brazil as a share of total generation (percent of the installed capacity).	%	9.4	2014	P	14.00
					P(a)	14.00
					A	

##### Details

**Means of verification:** MME and the Balanço Energético Nacional

**Observations:** This measure includes all new investments added to the system, including those supported by the program. This impact is related to ARE projects under the program. Target estimate is based on country's authority projections. Baseline refers to the electric generation matrix (internal offer) as of end of 2014, last report published by the Ministério de Minas e Energia (Resenha Energética Brasileira, 2015). Target considers a 50% increase, taking into account that values have already increased during 2015.

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

Indicator		Unit of Measure	Baseline	Baseline Year		EOP 2021
0.1	Energy intensity to Gross Domestic Product (GDP).	tep/US\$	0.15	2012	P	0.14
					P(a)	0.14
					A	

##### Details

**Means of verification:** IMF and official figures from the Ministério de Minas e Energia and the Balanço Energético Nacional.

**Observations:** Measures the quantity of energy required to generate US\$1 of GDP. This impact is related to EE and cogeneration projects under the program.

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

## PMR Operational Report

### RESULTS MATRIX

#### OUTCOMES

**Outcome Nbr. 0:** Contributed to the Brazil's goal of investments in sustainable energy projects

**Observation:**

Indicator		Unit of Measure	Baseline	Baseline Year		2017	2018	2019	2020	EOP 2021
0.0	Financing from third parties mobilized by the program.	millions	0.0	2014	P	108.00	126.00	145.00	89.00	468.00
					P(a)	108.00	126.00	145.00	89.00	468.00
					A					0.00

#### Details

**Means of verification:** Annual report on program execution by BNDES.

**Observations:** Includes all sources of financing other than the IDB and Banco Nacional de Desenvolvimento Econômico e Social (BNDES) own resources (debt or equity). Target estimate based on the average total investment required per project and an average 66/34 debt to equity ratio observed in similar projects from BNDES existing credit portfolio. Total investment = US\$900 million from the program + equity + other sources

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

Indicator		Unit of Measure	Baseline	Baseline Year		2017	2018	2019	2020	EOP 2021
0.1	Annual electricity generation from ARE sources (excludes hydro) by projects financed by the program.	GWh	0.0	2014	P		551.90	1,203.60	1,855.40	2,207.50
					P(a)		551.90	1,203.60	1,855.40	2,207.50
					A					0.00

#### Details

**Means of verification:** Annual report on program execution by BNDES. Can be validated with information from national utility.

**Observations:** Final target was estimated based on an average production factor per ARE technology in Brazil. Electricity prod (GWh) = Installed capacity (GW) x 24 x 365 x production factor.

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

Indicator		Unit of Measure	Baseline	Baseline Year		2017	2018	2019	2020	EOP 2021
0.2	Average annual energy savings from EE projects (including cogeneration) financed by the program.	GWh	0.0	2014	P				184.00	367.90
					P(a)				184.00	367.90
					A					

#### Details

**Means of verification:** Annual report on program execution by BNDES.

**Observations:** Final target was estimated based on an average capacity and efficiency ratios of EE systems installed. Energy savings = MWh produced by the system installed \* [efficiency of system installed ÷ efficiency of original system]

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

Indicator	Unit of	Baseline	Baseline		2017	2018	2019	2020	EOP 2021
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## PMR Operational Report

### RESULTS MATRIX

#### OUTCOMES

		Measure		Year						
0.3	Greenhouse Gas (GHG) emissions annual reduction, from projects financed by the program	TM CO2e	0.0	2014	P		63.46	138,417.00	234,523.00	296,176.00
					P(a)		63.46	138,417.00	234,523.00	296,176.00
					A					
Details										
Means of verification: Annual report on program execution by BNDES and conversion factor specific to Brazil electricity grid.										
Observations: Indicator is based on the CO2e emissions displaced by RE power generation and the EE energy savings once the projects start operation. Final target was estimated based on envisaged ARE production and EE savings, using a specific conversion factor on the average emissions factor of the Brazilian electricity grid, calculated by Empresa de Pesquisas Energeticas (115kgCO2/MWh, 2014). This emission factor considers the emissions of every source in the energy mix for power generation in Brazil, thus reflecting that this is already a clean energy matrix.										
Pro-Gender		No			Pro-Ethnicity			No		

## RESULTS MATRIX

### OUTPUTS: ANNUAL PHYSICAL AND FINANCIAL PROGRESS

Component Nbr. 1 Projects Financing of Energy Efficiency and Renewable Energy Projects

				PHYSICAL PROGRESS	FINANCIAL PROGRESS
	Output	Unit of Measure		EOP 2021	EOP 2021
1.1	Installed Alternative Renewable Energy (ARE) generation capacity (excludes hydro) financed by the program.	MW	P	720	840,000,000
			P(a)	720	840,000,000
			A	0	0
1.2	Projects of Energy Efficiency (EE) financed by the program (includes co-generation).	projects	P	4	60,000,000
			P(a)	4	60,000,000
			A	0	0

### Total Cost

	Total Cost	P		900,000,000
		P(a)		900,000,000
		A		0

### CHANGES TO THE MATRIX

No information available for this section