

TC ABSTRACT

I. Basic Project Data

▪ Country/Region:	MEXICO/CID - Isthmus & DR
▪ TC Name:	Energy Efficiency and Distributed Solar Generation in Public Schools
▪ TC Number:	ME-T1495
▪ Team Leader/Members:	URTEAGA DUFOUR, JOSE ANTONIO (INE/ENE) Team Leader; MORDUCHOWICZ, ALEJANDRO (SCL/EDU); IRIGOYEN, JOSE LUIS (INE/ENE); SANCHEZ ALVAREZ, LOURDES FELICIDAD (VPC/FMP); MIRANDA MONROY, EDNA (CID/CME); MAURICIO CASTANEDA (VPC/FMP); BARRIOS NUNEZ, URIEL (CID/CME); JOSE LUIS ENRIQUEZ (CID/CME); DE DOBRZYNSKI, ESTEBAN (LEG/SGO); BERLANGA ALESSIO ROBLES, CECILIA (SCL/EDU); ENRIQUE ANGEL NIETO ITUARTE (IFD/CMF); RODRIGUEZ PEREZ, ARIEL ENRIQUE (VPC/FMP); JUAN HERRERA (INE/ENE); JORGE LUIS MALPARTIDA (INE/ENE)
▪ Taxonomy:	Client Support
▪ Number and name of operation supported by the TC:	N/A
▪ Date of TC Abstract:	06 Jan 2023
▪ Beneficiary:	Bancomext, BANOBRAS, CONUEE, and SEP
▪ Executing Agency:	INTER-AMERICAN DEVELOPMENT BANK
▪ IDB funding requested:	US\$950,000.00
▪ Local counterpart funding:	US\$0.00
▪ Disbursement period:	24 months
▪ Types of consultants:	Individuals; Firms
▪ Prepared by Unit:	INE/ENE - Energy
▪ Unit of Disbursement Responsibility:	CID/CME - Country Office Mexico
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2020-2023:	Productivity and innovation; Institutional capacity and rule of law; Environmental sustainability

II. Objective and Justification

- 2.1 Develop a proposal to implement a national EE and DG program in public schools (preschool, elementary and secondary), including (i) evaluation of the potential savings in lighting, AC, and thermal insulation in public schools by state; (ii) evaluation of the DG per state; (iii) calculation of the necessary investment and feasibility per state; (iv) alternative model to implement the program considering the legal framework and budget of each state; and (v) design of the national EE and DG program in public schools considering technical, logistical, legal, and financial aspects.

Develop an analysis and all the documentation to integrate the technical file to implement an EE and RE program in 3,000 public schools in the state of Sonora, through PPPs including (i) description and justification of the project; (ii) technical, legal, financial, budgetary, and environmental feasibility studies; (iii) cost-benefit analysis and social rentability; (iv) convenience analysis; and (v) programming and duration of the contract.

- 2.2 Improvement in energy efficiency (EE) and the use of solar energy, through distributed generation (DG), in buildings is strategic for the development of sustainable and low-carbon infrastructure, and a key action to promote a strong, green, and inclusive economic recovery. Emissions of GHG from energy use in buildings in Mexico is around 25 MtCO₂e, which represents approximately 5% of the total GHG emission from energy use.

There are approximately 129,000 basic education public schools, and their annual electricity use is around 3,800,000 MWh/yr., 1.8% of the electricity sales of CFE. It is estimated that there could be savings of between 17% and 20%. Considering that 60% of the facilities are eligible to implement EE and DG actions. This would allow for savings of at least 646,000 MWh/yr., which would allow for a reduction of 273,258 tCO₂e/yr; through the substitution of fluorescent lights for LED (light emission diode), obsolete air-conditioning (AC) equipment for high-efficiency mini splits, as well as the implementation of energy management systems. In addition, most of the remaining electricity demand of eligible schools could be met through distributed solar generation.

The state of Sonora has around 3,600 basic education schools, which electricity uses around 200,000 MWh, 5% of the estimated use of all the basic education schools nationally. The estimated savings are expected to be around 30% through the replacement of inefficient lighting and AC equipment for high-efficiency technology. It is expected that at least 60% of the schools register electricity use which would make the installation of the electric systems profitable and that its facilities allow the installation of distributed solar generation systems.

In this context, buildings in the education sector represent a huge opportunity given the number of schools and the multiplying effect that can be achieved by creating a culture around sustainable energy amongst the basic education students, teachers, and parents.

III. Description of Activities and Outputs

- 3.1 **Component I: National program for energy efficiency and solar distributed generation in public schools of basic education.** Design of a national EE and DG plan in preschool, primary, and secondary schools, including (i) energy consumption and efficiency information system for basic education schools (ii) Energy Saving Potentials for lighting, AC, and insulation; (ii) DG potential in public schools; (iii) investments and profitability analysis; (iv) alternative models to implement the program; and (v) national EE and GFD program in public schools.
- 3.2 **Component II: Energy efficiency and distributed generation program in public basic education schools in the state of Sonora.** Analysis and preparation of the documents needed for the development of projects through PPPs, which includes (i) cost-benefit analysis; (ii) eligibility rate; (iii) risk analysis; (iv) public-private comparator; (v) social and environmental impact assessment; and (vi) financial, legal, and logistics model.
- 3.3 **Component III: EE and DG policy proposal for the development of educational infrastructure, equipment, conservation, and maintenance of facilities.** Policy proposal on EE in educational establishments, which includes: (i) international experiences and initiatives in the case of Mexico at the national and sub-national levels; (ii) analysis of the legal, regulatory, and budgetary framework for school infrastructure and equipment; and (iii) roadmap for the implementation of an EE and DG policy for the development of educational infrastructure, equipment, conservation, and maintenance of facilities.
- 3.4 **Component IV: Institutional strengthening at the national and sub-national levels, as well as capacity development.** Strategy for institutional strengthening and

capacity development at the federal and state levels, which includes: (i) analysis of the manuals and organizational structures of the agencies in charge of the education sector; (ii) training needs assessment on EE, DG; (iii) Training plan; and (iv) online courses and teaching materials.

IV. Budget

Indicative Budget

Activity/Component	IDB/Fund Funding	Counterpart Funding	Total Funding
Component I: National program for energy efficiency and solar distributed generation in public schools of basic education	US\$650,000.00	US\$0.00	US\$650,000.00
Component II: Energy efficiency and distributed generation program in public basic education schools in the state of Sonora	US\$100,000.00	US\$0.00	US\$100,000.00
Component III: EE and DG policy proposal for the development of educational infrastructure, equipment, conservation, and maintenance of facilities	US\$150,000.00	US\$0.00	US\$150,000.00
Component IV: Institutional strengthening at the national and sub-national levels, as well as capacity development	US\$50,000.00	US\$0.00	US\$50,000.00
Total	US\$950,000.00	US\$0.00	US\$950,000.00

V. Executing Agency and Execution Structure

5.1 Inter-American Development Bank Group

- 5.2 The Ministry of Finance and Public Credit (SHCP for its name in Spanish) of Mexico has agreed that the IADB execute the TCs in the country, in this case, the executing agency will be the Energy Division (INE/ENE), to facilitate institutional coordination, as well as the adequate development of the studies to be carried out, in accordance with the guidelines of the TC Operational Guide (GN-2629-1). Execution will include: (i) hiring consulting firms and/or individual consultants; (ii) recurring meetings with each beneficiary government agency to achieve their participation and involvement in all stages of the activities, from the preparation and feedback of the terms of reference to the review and follow-up of the deliverables; and (iii) administrative and technical monitoring of all contracts made by the IADB.

A Program Committee will be formed and will be made up of representatives of the CFE, CONUEE, and IADB, and in the case of results at the state and island level, the local authorities of the energy and environmental sector and other agencies involved,

which will be in charge of: (i) confirming objectives, scope, and expected results of the program; (ii) validate the Terms of Reference for each of the scheduled studies, considering, in the case of consulting firms, gender equality in the integration of specialist teams; and (iii) validate the results of the studies carried out. Procurement. The Bank will contract individual consultants, and consulting firms in accordance with the Bank's current procurement policies and procedures: (i) individual consultants will be contracted in accordance with the guidelines established in AM-650; (ii) the process for hiring consulting firms will follow the Bank's Policy for the Selection and Hiring of Consulting Firms.

VI. Project Risks and Issues

- 6.1 No relevant risks are identified in the execution of the TC, with the sole exception of coordination between government institutions. As a mitigation measure, the IADB and UKSIP will continue their current dialogue with the different institutions to ensure their collaboration, through the work of the Program Coordination Committee, and follow-up meetings with the necessary periodicity to ensure the correct participation of the institutions.

VII. Environmental and Social Classification

- 7.1 The ESG classification for this operation is "undefined".