



Energy efficiency and solar energy at schools Porto Alegre, Brazil

The Energy Sector in Brazil and relevance for NDC

In 2017, Brazil reached a new landmark in solar PV installed capacity, with 1 GW connected to the national grid and in operation. At the same time, the country's greenhouse gas emissions have increased significantly over the last decades. The energy sector depends in part on large-scale hydropower, which imposes several risks to the environment and economy.

Brazil's Nationally Determined Contribution (NDC) therefore aims at achieving 23% of other renewables (solar, wind, biomass) in the energy mix and 10% efficiency gains in the electricity sector by 2030. Solar power shall account to more than 13 GW capacity by 2026 to more sustainable and resilient energy supply in Brazil.

Porto Alegre's sustainable Project

The municipality of Porto Alegre, capital of the state Rio Grande do Sul with approximately 1.48 million citizens, foresees to use solar energy and increase energy efficiency of their public buildings.

In this project, schools, mostly located in socially disadvantaged areas, will be equipped with photovoltaic (PV) panels and energy efficient appliances. In cooperation with the local utility, the electricity surplus from PV panels would be sold to the electricity grid, following a successful pilot. The first phase of the project will include schools located in the 4th District, as part of an urban revitalisation programme facilitated by the 100 Resilient Cities Platform. The second phase of the project will scale up the efforts and provide PV installations to other public buildings as well as expand energy efficiency measures.



Porto Alegre's pilot PV installation in one of the municipal schools.

FELICITY in a nutshell

"Financing Energy for Low-carbon Investment- Cities Advisory Facility" is an initiative of GIZ and the European Investment Bank (EIB) to support low-carbon urban infrastructure projects that have significant impact on economic development. As a project preparation facility, FELICITY offers technical assistance to cities in designing and structuring their infrastructure investment projects. FELICITY prioritizes the interest of cities and incorporates the perspective of international financiers.



FELICITY's support to Porto Alegre

Porto Alegre faces the challenge to replicate a successful pilot project in a municipal school to other public buildings throughout the city, technically dimensioning the overall investment programme and demonstrating its financial and economic viability. FELICITY supports this by processing relevant data of public buildings, modelling the electricity generation potential of PV installations under different scenarios and providing support to ensure the cost-effectiveness and set up of adequate performance indicators for operation and maintenance. FELICITY will also work with Porto Alegre to identify the potential for energy savings to maximize emission reduction, to assess different technology standards, especially in view of their local applicability, and to enhance institutional capacities

Localization of Porto Alegre

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