

# Evaluation Summary

## *Sustainable Energy Efficiency Development in Palestine – SPEED – PENRA - Palestinian Energy and Natural Resources Authority*

Country: **Palestine**

Sector: **Energy**

Evaluator: **BURGEAP**

Date of the evaluation: **2020-10-12**

### Key data on AFD's support

**Project numbers:** CPS 1030 ; CPS 1076/77

**Amount:** 1 million € ; 3 millions €

**Disbursement rate:** 98%

**Signature of financing agreement:** 06/2009 ; 11/2013

**Completion date:** 06/2014 ; 11/2018

**Total duration:** 9 (5+4) years



### Context

The Energy Efficiency initiative in Palestine started with a project funded by the Global Environment Facility (GEF), executed by the UNDP and implemented by the Palestinian Energy Authority. This project performed its activities from 04/1999 to 12/2003.

During the last decade, since 2008, AFD first through FFEM, then in co-financing FFEM-AFD, has developed collaboration with PENRA (Energy Ministry of the Palestinian Authority) in the field of Energy Efficiency.

### Actors and operating method

Through their collaboration, PENRA and AFD-FFEM established and followed up the Energy Efficiency Unit (EEU) in PENRA, and the SPEED program managed by this EEU.

The Energy Efficiency Unit aimed to establish, develop, and later organize the energy efficiency sector efforts in Palestine. To do so, the SPEED program conducted the following activities :

- establishment of an energy audit laboratory, through which the EEU provided local engineers with capacity building on energy audit equipment relevance and usage;
- free energy audits for all private and public sectors;
- projects financing from a revolving fund for the public sector.

### Objectives

Reducing energetic bill in Palestine, by promoting a sustainable development of energy control; supporting the Palestinian Energy Authority in implementing its energy efficiency strategy to spread the culture of energy efficiency improvement on a national level.

Improvement of the Energy Efficiency in public buildings in Palestine by implementing an innovative self-financing mechanism, a Revolving Fund.

### Expected outputs

- Performed Energy Audits (public and private sector): 300+ energy audits
  - Energy audit laboratory & training services
  - Energy Efficiency (EE) Awareness raising campaigns through a wide range of tools
  - National Energy Efficiency Economic Model for Palestine
- Under the responsibility of EEU, the Revolving Fund set up and executed demonstrating projects: 25 energy conservation opportunities in public buildings (1.65 M€) -6 Lighting, 2 BMS (smart Building Management System), 17 Solar Water Heaters (SWH).

## Performance assessment

### Relevance

Project fully relevant to the Palestinian government strategic plans and objectives in the energy field; it supports efforts to reduce the national energy consumption / very high cost of energy in Palestine; it helps in raising awareness toward energy conservation importance and potential savings.

### Effectiveness

All actions and expected projects were implemented. There is anyway room for improvement for all provided outcomes. Energy audits calculation and data collection procedures could be developed. Results robustness could be improved. Design and implementation of the Revolving Fund, and the procedure for the economic evaluation and cost-effectiveness of the projects could be developed.

### Efficiency

The Energy Efficiency Unit of PENRA developed through the SPEED program good awareness regarding potential technical solution for raising energy efficiency in Palestine. Applied projects and tools are efficient options. However, the low effectiveness of the procedure has affected results negatively. Other efficient technologies or actions identified in the energy audits could be considered in the future. Minimizing the fossil energy consumption instead of designing more efficient systems conducted to oversize most of SWH projects.

### Impact

Nearly all met beneficiaries declared that the installed systems raised the level of comfort of their buildings occupants: hot water availability or lighting intensity at lower cost. BMS did not affect significantly the occupants comfort nor the energy bills.

There is nevertheless a lack of documented follow-up and savings analysis to measure and assess the impact.

Noted that thanks to the energy audits, some private enterprises developed actions that can be presented as a success story: they implemented low cost opportunities and achieved savings, and some of them even implemented higher investment and succeeded in achieving energy savings.

### Sustainability

EEU team built good managerial experience.

- However, technical knowledge, measurement and calculation procedures, financial evaluation and projects' capitalization have room for improvement.
- The Revolving Fund is a successful concept for the Palestinian context –but until now, no new project has been financed under the umbrella of this fund => Neither the MoF continued its commitment for repaying for all projects and replenish the fund, neither the EEU of PENRA selected new projects for being funded according to this modality.

### Added value of AFD's contribution

First benefit was to support the development of EE awareness in Palestine and support the development of the EEU for a long period. Second benefit could have been to link technical knowhow and a sustainable financial mechanism as the revolving fund: not yet operational, despite demands by beneficiaries.

## Conclusions and lessons learnt

The Ministry of Finance (MoF), as responsible for all public sector budgets, energy bills and project investments, and main beneficiary of EE actions, has not prioritized launch of new EE projects.

It is recommended to:

=> Document (instrumentation and analyze) the energy consumption of projects' beneficiaries, to get sufficient data for the post-execution assessment and verification analysis.

=> Develop in a future program: indicators management, internal quality control analysis, enhanced economic analysis and mid-term structured evaluation to capitalize /adapt the program's modalities.

Revolving Fund :

=> MoF and PENRA could develop a suitable methodology to estimate the achieved saved energy, and establish cost-effectiveness indicators after projects implementation: objective to develop the concern of MoF.

=> Governance of the Revolving Fund may be reengineered with a steering committee bringing together MoF and PENRA, enhancing an efficient tool for EE policy.

EEU role should focus on organizing the market, eventually co-financing, not on providing technical services. Opening the Palestinian market will support it by establishing investments and job opportunities.

=> to perform less energy audits, but specific of higher standard.