

AFRICAN DEVELOPMENT BANK GROUP



TUNISIA

RURAL ELECTRIFICATION PROJECT – ELECTRICITY IV

Project Performance Evaluation Report (PPER)

**OPERATIONS EVALUATION DEPARTMENT
(OPEV)**

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1. PROJECT BACKGROUND AND DESIGN

1.1 The rural electrification project (Electricity IV), is part of a series of actions launched in 1976 by the Tunisian Government and STEG; on the basis of an agreement between the two parties, the Government included in its successive development programmes (Vth and VIth Plans), as a priority, the integrated electrification of the country. Commissioned to implement part of the energy (electricity and gas) component of the plans, STEG carried out the necessary actions which led to the implementation of the following projects co-financed by the Bank: (1) rural electrification of the governorates of Sfax and Gafsa in the south of Tunisia (1978); (2) rural electrification of the governorates of Gabes, Gafsa, Tozeur, Medenine and Tatouine (1981); (3) urban electrification (1984); (4) rural electricity IV (1989), subject of the present abridged audit performance report; (5) rural electricity V (1993).

1.2 The electrification projects of Gabes and Gafsa and the rural electrification project have been audited; the main lessons to be drawn from these two projects can be summarized as follows: (1) the billing structure should be simplified and cost of connections adjusted; (2) the impact of the billing policy for public utilities, particularly with regard to the cost effectiveness of valued capital assets should be assessed; (3) a study on the impact of Bank operations in the field of rural and urban electrification of Tunisia should be carried out; and (4) an exchange of experience between the various electricity companies of regional members countries should be fostered.

1.3 The purpose of the rural electrification project (Electrification V) which was approved in 1993 and which concerns the entire country, is to provide 50.000 homes with electricity and 730 pumps. The implementation of the project is normal.

1.4 The rural electrification project (Electricity IV) was designed by STEG after a general census in 1975 and field surveys on consumption; the villages to be electrified were then identified; the feasibility study was carried out by STEG and led to the inclusion of the project in the country's VIIth economic and social development plan for the period 1987-1991.

1.5 The Bank did not take part in the project's design and preparation, but rather at the appraisal phase further to an official request by the Government dated 17/02/1998.

1.6 A completion mission was fielded to Tunisia in April 1995. The related completion report which was finalized in August 1995 and presented to the Board in January 1996 bearing the number ADB/BD/IF/99/25 reviewed all the phases of the project cycle. Given the quality of the PCR and the overall project performance, the need was felt for an abridged audit conducted in May 1996 from documents available in the Bank and interviews of project officers. The basic data selected on the project are given as Annex 1.

2. PURPOSE, OBJECTIVES AND OUTPUTS

Purpose and Objectives

2.1 The main purpose of the project was the electrification of rural areas situated for the most part in the country's centre and north districts. It involved the extension of the current 30 kV public electricity supply network in the aim of supplying 60.000 rural homes and providing 1000 pumps and contributing thus to the improvement of farms and the development of irrigated schemes.

Outputs

2.2 In order to attain these objectives, the project comprised seven components as indicated in paragraph 3.2.1 of the appraisal report (ADB/BD/WP/89/97 of 28 August 1989) and mentioned again in paragraph 2.4.1 of the completion report (ADB/BD/IF/96/25 of 12 January 1996) as follows: (i) extension of the MV 30 kV network over a total length of 2 810 km; (ii) construction of 2,800 MV/LV transformer stations; (iii) construction of 3,900 km of LV lines; (iv) 60,000 LV connections; (v) purchase of equipment and maintenance of the networks; (vi) purchase of computer equipment for client management; and (vii) engineering designs, works control and supervision.

2.3' The project was completed in May 1993, the new networks were operational as works progressed; it was implemented with a delay of five months and a cost overrun of 24.28% primarily because of the increase in project quantities. The project was implemented after major modifications in the quantities of the supply networks and in rural connections and the suspension of the purchase of network maintenance equipment (component E) and of computer equipment for the computerized management of customers (component F); it should be emphasized that the Bank agreed to goods procured under components E and F within the framework of a larger programme. The results are globally satisfactory; the country's electrification rate rose from 70% in 1988 to 84 % in 1993, and that of rural electrification rose from 32 % to 57 % over the same period. To arrive at these achievements, the Tunisian Government and STEG had to increase their share of the project funds by using foreign exchange allocations initially intended to finance components E and F.

3 . IMPLEMENTATION PERFORMANCE

3.1 The loan became effective five (5) months after the signing of the loan agreement; bidding documents were prepared by STEG's departments to the satisfaction of the Bank. Technical operations relating to project start-up and actions for the effectiveness of the loan were carried out together, minimizing thus the risks of overrun in relation to the implementation schedule and by extension, to the cost of the project. Modifications to the list of goods and services submitted at the time of the effectiveness of the loan agreement reflected the increase in the number of rural subscribers, the final beneficiaries of the project's achievements. Half-yearly reports were prepared regularly by the executing agency; the annual project audit report has not been written since STEG does not keep separate project accounts.

3.2 Proper project implementation was also due to the part played by Tunisian industries and firms in the construction of the lines and in supplying part of the equipment. The local currency portion (49.39%) of the total project cost testifies to the potential of Tunisian operators in the electricity sub-sector.

3.3 The project attained its objective satisfactorily; the number of subscribers increased, at the price of an increase in the local currency share of the project. Although maintenance and management equipment were not procured under the project, the objective of strengthening STEG's technical and administrative skills was also attained because the said equipment was procured under another larger programme, with the Bank's consent.

4. PERFORMANCE OF THE BORROWER, EXECUTING AGENCY AND THE BANK

4.1 The performances of the borrower were judged satisfactory from project design to the final handing over of works; the borrower fulfilled all the loan-related conditions. The funds required to meet the increase in the volume of works were provided within the prescribed deadline.

4.2 The performances of the executing agency which is also project consulting engineer were judged satisfactory (Annex 2, page 1 of 3). STEG played an important role in project design. Like other major electricity companies STEG developed the engineering sub-sector capable of carrying through the operations indispensable for the installation of electric energy facilities.

4.3 The performances of the Bank were deemed satisfactory (Annex 2, page 2 of 3); it was attentive to the revision of the list of goods and services to ensure the respect of the expenditure categories (paragraph 3.7.4 of the PCR).

5. PROJECT SUSTAINABILITY

5.1 Project achievements should last because the facilities (neutral distributor earthed MV networks or the MALT system) were adequately designed; in addition, the part played by national firms in works implementation is an advantage for the proper maintenance of the equipment and STEG's production capacity is secure.

5.2 Apart from the increase in the rural electrification rate, estimated at 57%, the pump component should help prolong the use of electric energy to develop small rural enterprises; for the people concerned, electricity supply means not only comfort and better living conditions, but also and especially a means of production, since irrigated crops are the main source of income in the project areas.

5.3 The constant development of the electricity demand in the project area, consolidated by the start of the Electricity V Project is a factor that confirms project sustainability; STEG carries out its activities in an institutionally well-defined environment with the technical and financial capacities to support State and multilateral donor intervention in the energy sector.

6. EVALUATION OF PERFORMANCES AND OUTPUTS

6.1 Technically, the medium voltage MALT supply system is an asset in the implementation of the rural electrification programmes in Tunisia; the requirements of the rural populations are covered by the single-phase current at their disposal; the pumps are equipped with single-phase engines.

6.2 STEG's financial statements were audited regularly from 1987 to 1993; capital assets were revalued and indicate a 2.1% rate of return instead of the 5 % indicated in the loan conditions. STEG's self-financing capacity are still within the norms, i.e. about 25% as of 1992. The internal rate of return was 6 % at the end of works against 8.34% at appraisal, confirming the rural and social nature of the project.

6.3 The economic rate of return of 14% at the end of works, against 11.4% at appraisal; is the main point which emphasizes the project's social character; after the implementation of the project the migration of the rural masses to urban areas decreased. There is every indication that this trend will continue because Tunisia is currently implementing with the assistance of the ADB the Vth Rural Electrification Project which this time covers the entire country. Project achievements were judged very satisfactory (Annex 2, page 3 of 3).

7. CONCLUSIONS, LESSONS AND RECOMMENDATIONS

Conclusions

7.1 The project was implemented according to the standard norms. Thanks to the decentralization of activities relating to designs and works supervision, STEG was able to secure the execution of the contracts within the prescribed deadlines. Under the project, more than 1,500 rural areas were electrified and more than 93,000 households and 1,300 pumps were connected. Thanks to the project the country's electrification rate rose from 70% in 1988 to 84% in 1993, the rural electrification rate rose from 32% to 57% over the same period.

7.2 The socio-economic impact of the project can already be felt through the creation of small-scale farming activities; although they cannot be quantified, these activities will in the long term help to limit the rural exodus and increase household income in the project area.

7.3 Through its support of this project's implementation, the Bank has contributed to the success of the electricity sector of Tunisia's VIIth Economic and Social Development Plan; through this operation, it is stepping up its impact on Tunisia's energy sector.

Lessons

7.4 The lessons mentioned in the completion report are relevant (see PCR, para. 12.2). It is worthwhile to emphasize here that STEG was in full control of the single phase medium voltage supply system which enabled the country to attain a rather high rate of electrification. This successful experience could set the trend for other electricity companies in regional member countries.

7.5 The development of an engineering unit in electricity companies could be an effective means of design and works supervision as well as of improving on local expertise at the least cost.

Recommendations

7.6 Given the relatively high number of electricity projects financed in Tunisia, it is recommended that a study on the impact of Bank operations on the energy sector particularly the electricity sub-sector be commissioned.

7.7 The Bank should use all means at its disposal to help STEG share its experience in single phase MV supply, with electricity companies of regional member countries.

SELECTED DATA

Country	TUNISIA
Project	Electrification rurale (Electricité IV)
Loan number	B/TUN/ELC/89/37 - BAD
Borrower	Government of the Republic of Tunisia
Executing Agency	Société tunisienne de l'électricité et du gaz (STEG)

A. LOAN

	<u>Estimated</u>	<u>Actual</u>
Amount: (UA million)	28.44	28.44
Date of approval	9/89	16/10/89
Date of signature	n.a	22/11/89
Date of effectiveness	n.a	19/04/90
Date of first disbursement	30/6/90	30/6/90
Date of last disbursement	31/12/93	31/12/94

B. PROJECT

	<u>Estimated</u>	<u>Actual</u>
Total cost (UA million)	45,215	56,195 ¹
Sources of finance		
ADB	28.44	
Government	3,181	
STEG	13.599	

	<u>Estimated</u>	<u>Actual</u>
Implementation Duration	48 months	53 months

	<u>Date</u>	<u>Reference</u>
Project Completion Report	12/01/96	ADB/BD/IF/96/25

C. PERFORMANCE INDICATORS

Cost overrun	UA 10,98 millions or 24,28%
Time overrun	5 months
Overall project. performance :	Very satisfactory
Project implementation performance:	Very satisfactory
ADB Performance	Satisfactory

¹Increase in the local currency portion

PERFORMANCE RATING

FORM IP 1

IMPLEMENTATION PERFORMANCE

N°	COMPONENT	MARK (1 to 4)	REMARKS
1	Adherence to time schedule	3	Overall delay of five months; due mainly to the increase in the volume of works decided by the Tunisian authorities with the Bank's consent.
2	Adherence to cost schedule	3	Cost overrun of 24,34 % ; due to the increase in services as indicated in point 1. The percentage of increase in the volume of corresponding works is much higher than that of the cost overruns, i.e. 54%.
3	Compliance with loan	3	Specific project conditions were generally complied with, contrary to the general Bank conditions; a separate project account was not kept, nor were the accounts audited.
4	Relevance of supervision and reporting	2	STEG's inspection and supervision of works were sufficient; progress reports were rather brief.
5	Satisfactory operations (if applicable)	4	The lines and substations were put under voltage and handed over for commissioning as works progressed. All connected subscribers are active.
	TOTAL	15	Good on the whole.
	Overall assessment of Implementation performance	3.00	Implementation performance satisfactory; the executing' agency, beneficiary of the loan designed and carried out the works according to norms.

FORM BP 1

PERFORMANCE OF THE BANK

N°	INDICATOR	MARK (1 to 4)	REMARKS
1	At identification	4	The Bank did not find it difficult to select the project soon after its submission by the- country.
2	At project preparation phase	0	The Bank did not take part in the project's preparation.
3	At appraisal	3	The Bank's contribution was judged satisfactory; it accepted to launch bids in advance given the advanced development of the file.
4	During supervision	3	The Bank fielded 2 supervision missions' and 1 follow-up mission during -implementation,' over a 53- month period.
	TOTAL	10	Good performance on the whole.
	Overall assessment of Bank performance	2,5	The Bank's performance was judged satisfactory.

FORM PO 1

PROJECT ACHIEVEMENTS

No	INDICATOR	MARK (1 to 4)	REMARKS
1	Relevance and achievement of objectives	3.43	Globally very satisfactory.
i)	Macro-economic policy	3	The five-year development plan which covers the project took into account the macro-economic context.
ii)	Sectoral policy	4	The project is part of a follow-up of actions for complete nationwide electrification.
iii)	Physical (including production)	4	The physical objectives of the project were overreached.
iv)	Financial	3	Project financial performances were satisfactory; the number of unpaid days fell from 50 in 1990 to 41 in 1993.
v)	Poverty alleviation	3	The project contributed directly or indirectly to poverty alleviation.
vi)	Impact on the environment	3	The project had no negative impact on the environment.
vii)	Private Sector Development	4	The project attained its objective of contributing to the bloom of small-scale private activities.
viii)	Other (Specify)	N. A.	
2	Institutional Development	3.50	Institutional performance was very satisfactory.
i)	Institutional framework including restructuring	4	The institutional framework was adequate and made implementation easy.
ii)	Financial management including information management systems	2	The inexistence of a separate project account had a negative impact on the overall project performance.
iii)	Transfer of technology	4	A good mastery of technology made it possible for the project to attain its objectives.
iv)	Staffing by qualified persons (including turnover) training and counterpart staff.	4	The personnel of the executing agency and that of the other departments involved in project implementation carried out their tasks satisfactorily.
3	Sustainability	3.50	Very satisfactory. All indicators point to the project's sustainability.
i)	Continued borrower commitment	4	The resolve of the borrower to include the country's electrification in its five-year development programme is patent.
ii)	Environmental Policy	3	The executing agency was constantly concerned about protecting the environment.
iii)	Institutional Framework	4	The institutional framework was adequate.
iv)	Technical viability and staffing	4	The project was technically well-designed and viable; the staff was well trained and carried out its tasks satisfactorily.
v)	Financial viability including cost recovery system	3	Good financial rate of return (6%) for a rural electrification project.
vi)	Economic viability	4	Favourable economic impact.
vii)	Environmental viability	3	There is no obvious project impact on the environment.
viii)	Operating and maintenance facilitation (availability of recurrent funding, foreign exchange, spare parts, workshop facilities)	3	Recurrent expenses were chargeable to the executing agency, beneficiary of the project.
4	Economic rate of return	4	Very satisfactory. The 14% economic rate of return is very good given the nature of the project.
	TOTAL	14.43	
	Overall assessment of outcome	3.61	Very satisfactory.