

Ex-Post Evaluation: Brief Report

Azerbaijan: Rehabilitation Programme in Electricity Transmission II



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| Sector | Energy | |
| Programme/Client | Rehabilitation Programme in Electricity Transmission II, BMZ No. 1999 66 003 | |
| Project executing agency | Azerenerji JSC | |
| Year of sample/ex-post evaluation report: 2011*/2011 | | |
| | appraisal (planned) | Ex-post evaluation (actual) |
| Investment costs (total) | approx. EUR 15.85 million (DM 31.0 million) | approx. EUR 15.85 million (DM 31.0 million) |
| Counterpart contribution | approx. EUR 0.51 million (DM 1.0 million) | approx. EUR 0.51 million (DM 1.0 million) |
| Financing, of which BMZ funds | approx. EUR 15.34 million (DM 30.0 million) | approx. EUR 15.34 million (DM 30.0 million) |

*Project in sample

Programme description: The Rehabilitation Programme in Electricity Transmission II is the second phase of the investment programme completed in 2000, Rehabilitation Programme in Electricity Transmission I. While Phase I concentrated particularly on the rehabilitation of installations in the medium to low voltage range, Phase II aimed at the urgently needed renewal of switchgears in the high-voltage range. The programme executing agency was Azerenerji JSC, the vertically integrated monopolist in the Azeri power sector. The rehabilitation of transformer substations was to make a contribution to improving the stability and reliability of power transmission, particularly around the capital Baku and on the Absheron Peninsula, that is, the main load centre in Azerbaijan. The investment measure was embedded in a sectoral dialogue with the government conducted by KfW in close consultation with other donors.

Objective: As its overall objective, the programme was to make an efficient contribution to economic development, particularly in the Baku-Absheron region. The programme objectives were defined as follows: a) contribution to security of supply by improving the stability and reliability of power transmission in the northern regions and Baku-Absheron and b) raising technical safety standards in the rehabilitated facilities.

Target group: Particularly large consumers in the production sector (petroleum, chemicals and textile industry), commercial enterprises and all consumers connected to the relevant grid section.

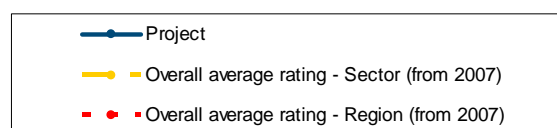
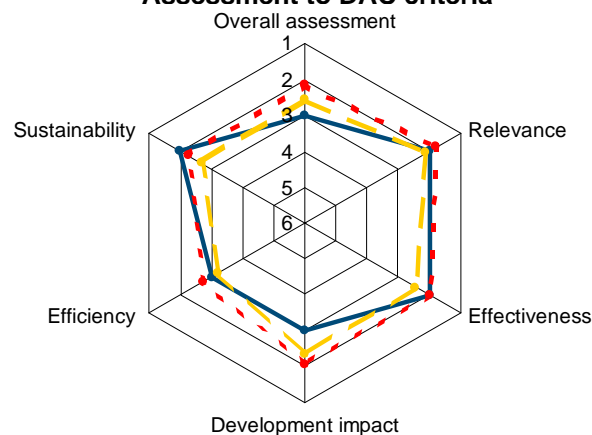
Overall rating: 3

Generally useful rehabilitation with positive direct effects, but little capacity-building impact. The evaluation was also difficult due to a lack of baseline data.

Of Note:

Ambitious sector-policy objectives cannot be achieved solely by defining conditionalities: Besides close consultation with other donors, they also require adequate local personnel capacities. Even under ideal conditions, we recommend a precise analysis of the political climate and the actual scope for reforms.

Assessment to DAC criteria



SUMMARY PERFORMANCE ASSESSMENT

Performance rating: Altogether, the programme is highly relevant and achieved its objective well (effectiveness). However, the low efficiency at sectoral level still today and the poor capacity-building impact of the programme detract from the overall assessment. Altogether, we allot the rating satisfactory for development-policy effectiveness (**Rating 3**).

The overall rating is based on the following subratings:

Relevance: The rehabilitation of obsolescent, i.e. extremely inefficient and failure-prone, power transmission facilities has been of high strategic relevance in Azerbaijan. Particularly improving security of supply in the load centres of the Republic of Azerbaijan (Baku, Absheron Peninsula) is very important from an economic perspective (efficient and reliable supply of large consumers in the production and commercial sector). By financing urgently needed rehabilitation measures in strategically important transformer stations, the programme intervened at particularly neuralgic points in power supply in Azerbaijan. It conformed to the priorities of German development cooperation at appraisal (with energy still a priority of German development cooperation in Azerbaijan today) and was closely aligned with the goal of the Republic of Azerbaijan and the programme executing agency, Azerenerji JSC. The programme did not, however, form part of a sectoral investment plan, which is still lacking, but was agreed on in the donor community and complemented other relevant programmes of international donors (Subrating 2).

Effectiveness: The objectives identified in the programme appraisal report and the relevant indicators defined are assessed as correct and appropriate. As a consequence of the investment, the losses in power supply were reduced, particularly among consumers in the production sector (above all the oil and gas industry) but also in households. The installation of modern switching technology in the rehabilitated transformer stations has made a contribution to substantially raising the technical safety standards in transmission technology (particularly through the installation of low-maintenance SF6 power switches). Accidents (also with injuries to persons) were commonplace before rehabilitation. Based on the available production data, there have been no more losses or accidents in the fully rehabilitated installations (110 kV switchgears Puta, Binagadi) since completion of the investment measures. This also holds for the subsections of the other transformer stations which were rehabilitated as part of the measure. It also attests to the soundness of the operating plan of the programme executing agency and/or the training and competency of the operatives (Subrating 2).

Efficiency: We assess programme efficiency, i.e. objective achievement in relation to allocated resources, as good altogether. The investment costs were rather low by international standards, which is attributable to the particularly good competition in the call to tender for supplies and services as part of a general contractor agreement. The costs remained below the set budget at programme appraisal by more than EUR 2.5 million. As a result, a number of complementary measures could be financed from the FC loan. Due to

the installation of the new switching technology, the self-consumption of electric power by Azerenerji JSC has also been reduced. Delays during construction (about 1 year) can be ascribed to various factors, one of which being the requirement that rehabilitation measures had to be carried out while guaranteeing normal operation of the transformer stations. This repeatedly led to problems, particularly in winter (peak load period). The production efficiency of the programme is thus assessed altogether as high. It has also made a contribution to the financial sustainability of Azerenerji JSC: The downtimes and accidents that regularly occurred in the unrehabilitated Soviet-style installations had caused injuries to persons and reduced income and/or raised costs for the company. This has been remedied by the programme.

The allocation efficiency can only be roughly assessed based on the available information (and/or lack of verifiable comparisons). The improved security of supply, particularly in the load centres in and around Baku (Absheron), can be expected to have made a contribution to economic development in the regions affected. Due to the tariff adjustment in 2007, the much higher end customer rates (currently about 6 EURc/kWh on average) of Azerenerji JSC will likely enable it to just about break even and ensure more efficient use of electric power by the final customer. At the sectoral level, however, only limited progress has been made in efficiency since programme appraisal. Despite reduced losses in the transmission and distribution grid, the rate of loss is still quite high at 27.6%. In addition, the indirect subsidisation of the price of electricity, due to the artificially low price at which Azerenerji can obtain gas for its power stations from the state-owned gas company SOCAR, economic cost recovery is still extremely low (estimated at approximately 40% of long-run marginal costs).

Summarising, we assess efficiency in objective achievement with the Subrating 3.

Impact: The overall objective of making an efficient contribution to economic development, particularly in the Baku-Absheron region, can be deemed to have been achieved, despite a lack of baseline data and indicators. The transformer stations either fully or partly rehabilitated as part of the programme play a key role in supplying major large consumers in the production sector in Azerbaijan. These industries, which have contributed more than 50% to national economic growth in recent years, depend on the reliable and efficient supply of electric power. Even if it cannot be quantified exactly, partly due to the missing baseline, the programme has thus had direct economic benefits. The KfW rehabilitation programmes (Rehabilitation Programmes in Electricity Transmission I+II) were the first of their kind in Azerbaijan after the disintegration of the Soviet Union and have contributed to establishing Western technology and safety standards in the country. The whole national power sector has been modernised since on the basis of Western (and particularly European) standards and norms. Finally, the programme made a contribution to climate protection due to the above-mentioned reduction of technical losses and the less energy-intensive operation of the new switchgears, although this was not explicitly defined as an objective at appraisal. As already indicated above, however, despite the originally defined

intentions, the programme has not been able to make any notable progress in effecting the sectoral reforms considered necessary by all Western donors (Subrating 3).

Sustainability: The programme has undoubtedly made a lasting contribution to improving supply security in the load region of Baku and Absheron. The installations are low-maintenance/maintenance-free and ought to have a long operating life (at least 20 years). The competent personnel of Azerenerji JSC were trained for the operation and maintenance of the installations as part of the general contractor agreement. Azerenerji JSC today conducts regular further training courses for personnel in its own training centre. As already noted at project appraisal, Azerenerji JSC has extremely well qualified technical staff at its disposal, as can be seen from the operatives staffing the individual transformer stations as well as the central load dispatch centre in Baku. The firm is also financially capable of keeping the installations operational; the profit it has made since the tariff increase in 2007 is however, partly due to the subsidised gas price. In addition, the investment budget of Azerenerji JSC is primarily financed from government grants. Altogether, the sustainability risks related to the sector and executing agency have declined since the ex-post evaluation of the first phase of the programme in 2006, largely due to the increased tariffs and collection efficiency of the executing agency. As we may expect continued support for Azerenerji JSC from the government in the medium term, based on the original design of the programme we assess its sustainability as in keeping with expectations (Subrating 2).

Notes on the methods used to evaluate project success (project rating)

Projects (and programmes) are evaluated on a six-point scale, the criteria being relevance, effectiveness, efficiency and overarching developmental impact. The ratings are also used to arrive at a final assessment of a project's overall developmental efficacy. The scale is as follows:

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| 1 | Very good result that clearly exceeds expectations |
| 2 | Good result, fully in line with expectations and without any significant shortcomings |
| 3 | Satisfactory result – project falls short of expectations but the positive results dominate |
| 4 | Unsatisfactory result – significantly below expectations, with negative results dominating despite discernible positive results |
| 5 | Clearly inadequate result – despite some positive partial results, the negative results clearly dominate |
| 6 | The project has no impact or the situation has actually deteriorated |

Ratings 1-3 denote a positive or successful assessment while ratings 4-6 denote a not positive or unsuccessful assessment

Sustainability is evaluated according to the following four-point scale:

Sustainability level 1 (very good sustainability) The developmental efficacy of the project (positive to date) is very likely to continue undiminished or even increase.

Sustainability level 2 (good sustainability): The developmental efficacy of the project (positive to date) is very likely to decline only minimally but remain positive overall. (This is what can normally be expected).

Sustainability level 3 (satisfactory sustainability): The developmental efficacy of the project (positive to date) is very likely to decline significantly but remain positive overall. This rating is also assigned if the sustainability of a project is considered inadequate up to the time of the ex post evaluation but is very likely to evolve positively so that the project will ultimately achieve positive developmental efficacy.

Sustainability level 4 (inadequate sustainability): The developmental efficacy of the project is inadequate up to the time of the ex post evaluation and is very unlikely to improve. This rating is also assigned if the sustainability that has been positively evaluated to date is very likely to deteriorate severely and no longer meet the level 3 criteria.

The overall rating on the six-point scale is compiled from a weighting of all five individual criteria as appropriate to the project in question. Ratings 1-3 of the overall rating denote a "successful" project while ratings 4-6 denote an "unsuccessful" project. It should be noted that a project can generally be considered developmentally "successful" only if the achievement of the project objective ("effectiveness"), the impact on the overall objective ("overarching developmental impact") and the sustainability are rated at least "satisfactory" (rating 3).