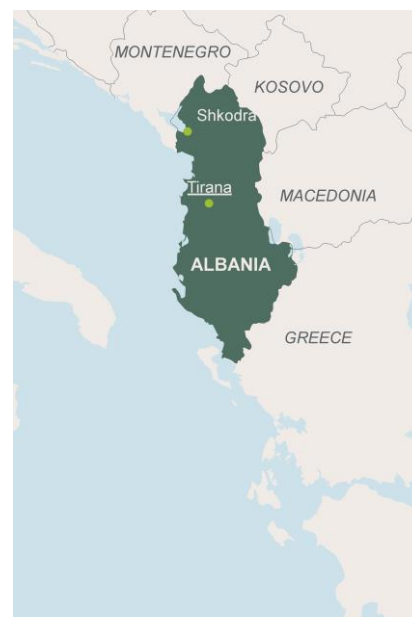


# Ex post evaluation – Albania

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**Sector:**Hydro-Electric Power Plants (CRS Code 23065 - Project A),  
Electrical transmission (CRS Code 23040 - Project B)  
**Programme/Project:** A) Electricity supply Southern Albania I / II,  
1998 65 841 / 2003 66 617\*, Training No. 1930 02 524/1930 02 201 /  
B) Transmission line Albania-Montenegro; 2001 40 798\*, Training component no.  
1930 03 167  
**Implementing agency:** Operatori Sistemit Transmetimit (OST) and Operatori  
Shperndarjes se Energjise Elektrike (OSHEE)



## Ex post evaluation report: 2016

		Project A (Planned)	Project A (Actual)	Project B (Planned)	Project B (Actual)
Investment costs (total)	EUR million	21.47	34.49	54.12	51.93
Counterpart contribution	EUR million	1.02	0.76	10.25	6.12
Funding	EUR million	20.45	33.73	43.87	43.81

\*) Random sample 2016

\*\*) Development loans / plus training measures amounting to EUR 0.84 million and EUR 0.46 million

**Summary:** Project A comprised measures to improve the electricity supply in southern Albania: mainly the renovation of two hydropower plants Bistrica I and II (22.5 MW and 5 MW) and measures regarding transmission and distribution as well as a training measure to strengthen the Regional Management Unit of the then implementing agency in reducing power losses and improving the collection rate. Project B) comprised the construction of a roughly 154 km long, 400-kV line between Tirana and Podgorica, including measures in the substations Elbasan 2 and Podgorica 2 as well as a training measure for regional bottleneck management.

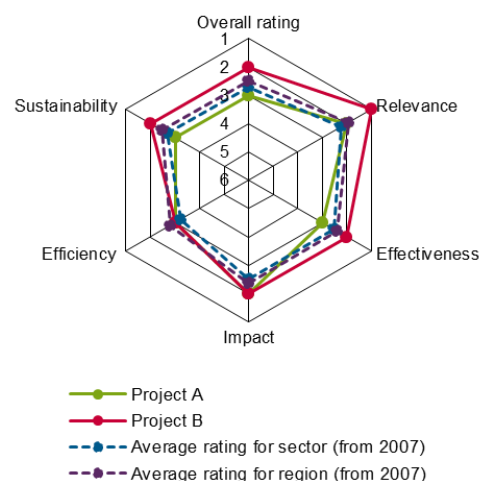
**Development objectives:** Project objective A was the long-term use (15-20 years after renovation) of the two hydropower stations as well as the improved and secure transmission and distribution of the energy generated there in the supply areas of Bistrica and Sarandë/Butrint. The development objective was contributing towards the cost-effective improvement of the electricity supply and thus the economic development of south-western Albania. Project objective B was (1) to make a cost-effective contribution to improving electricity supply in Albania, and (2) to support the accession of Albania to the Union for the Coordination of the Transmission of Electricity (UCTE, now the ENTSO-E) and (3) to create a regional electricity market. The development objective was to contribute to the economic development of Albania and to strengthen regional cooperation.

**Target group:** The target group was all consumers connected to the transmission and distribution grid in southern Albania (Project A) and in Albania (Project B).

## Overall rating: 3 for project A and 2 for project B

**Rationale:** Both projects tackled regional and/or national bottlenecks in electricity supply, and from today's point of view their relevance should generally be considered even higher as they represent the first building blocks of a future comprehensive expansion at both national and transnational level. The objectives were largely achieved. Project B) in particular made a significant contribution to setting up a regional high-voltage grid and to creating an electricity market. Sector reforms however suffered major delays and to some extent were not successful. If the current policy is continued then the sustainability of the projects can be expected.

**Highlights:** The main components of project A (hydropower plants Bistrica I and II) were privatised in 2013. The private operator fell insolvent in March 2016, but the power stations are still operating. The planned expansion of hydropower to south-eastern Europe is criticised by environmental organisations because of its land use. Hydropower project A was not affected by this criticism because only two hydropower stations built in 1966 were renovated and modernised.



## Rating according to DAC criteria

### Overall rating:

**3 (electricity supply, Southern Albania I and II),  
2 (transmission line Albania - Montenegro)**

### Relevance

Southern Albania was a structurally weak region of Albania at the time of the project appraisal (PA) for project A (1998), with its primary sector being agriculture. The region's potential related mainly to the expansion of tourism, due to its proximity to Corfu and the historical sites in Butrint. Due to outdated equipment in all areas (generation, transmission, distribution), the power supply was a major development bottleneck. The existing plants were predominantly of Chinese and Eastern European origin, and were mostly installed between 1950 and 1978 (the hydropower stations / HPSs Bistrice I and II were built in 1966). The output from the two HPSs covered around 50% of the peak load in the immediate southwestern Albanian supply region. Their production corresponded to about 90% of the electricity demand of the region in question, approximately 175 GWh.

Ensuring and expanding the power supply in Southern Albania was a high priority for regional development. Furthermore, from a technical point of view, supplying electricity to the network in the south of the country was important for its stability (80-90% of production in the north of the country). Project A) was in line with Albanian priorities and was well coordinated with donor community activities, in particular the "Power Transmission and Distribution Project" funded by the World Bank, the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB).

At the time of the PA for project B (2004), Albania's electricity supply was characterised by rising electricity demand with a comparatively constant level of production. The expansion of the transmission lines to neighbouring countries and thus the connection to the South Eastern European 400kV power grid was a high priority for Albania. The integration of the domestic electricity market into the European system and regulatory framework was also a political goal. The project was important for Montenegro because of the stabilisation of the network. In addition, revenue was expected from the transmission tariffs. The project was highly relevant from a regional point of view as well because the transmission line includes an important ring connection in South Eastern Europe, which comprises Albania, Montenegro, Kosovo, Macedonia and Greece. Finally, the line was required to meet the criteria of the European Network of Transmission System Operators for Electricity (ENTSO-E) with regard to connecting Albania to the European 400kV network (for safety reasons more than one 400kV connection must be in place, and at that time there was only one 400kV connection to Greece).

From today's point of view, the relevance of the two projects should generally be considered even higher than at the PA, as the projects represent the first building blocks in the future expansion of a comprehensive network at both national and transnational level.

In summary, both projects have high or very high relevance thanks to contributions aimed at ensuring the supply of electricity in Southern Albania (project A) and at ensuring the country's electricity supply and connection to the South Eastern European electricity network (project B). This evaluation also holds against the backdrop of the additional 400kV line between Albania and Kosovo that was completed recently, which should not be seen as "competition", but rather will continue to stabilise the cross-regional electricity network. For detailed information regarding the privatisation of the HPSs Bistrice I and II in 2013, see the section on Sustainability.

**Relevance rating: 2 for project A and 1 for project B**

### Effectiveness

The project objective of project A was the long-term use (15-20 years after renovation) of the two hydropower stations as well as the improved and secure transmission and distribution of the energy generated

there in the supply areas of Bistrica and the Sarandë/Butrint district. Furthermore, it was expected that the share of productive consumption would increase (currently around 50%).

The project objective of project B was (1) to provide a cost-effective contribution to improving electricity supply in Albania, (2) to promote the accession of Albania to what was then the Union for the Coordination of the Transmission of Electricity (UCTE, now the ENTSO-E) and (3) to contribute to the creation of a regional electricity market.

The attainment of the project objectives defined at the project appraisal (PA) can be summarised as follows:

Project A indicators	Status PA, Target value PA	Ex post evaluation
(1) Average annual production (GWh) during the first five years of operation after project completion	Status at PA: 140 GWh Target value: 160 GWh  Completion: 2006 (Bistrica I), 2008 (B. II)	Met, with a delay. 2007 2008 2009 2010 2011 2012 128 119 137 134 153 161  2013 2014 2015 148 168 166
(2) Technical and non-technical transmission and distribution losses in the Sarandë district with respect to the net electricity feed-in no later than two years after project completion	Status at PA: 35.9% Target value: maximum 25%  Completion: 2008	Largely met. 2009 2013 2014 2015 20.7 32.4 22.6 19.9  No data is available for 2010-2012 due to privatisation at the time

Due to the lower level of production, the indicators for project A were not fully met or were met only with delays. Despite this, the project contributed to securing the electricity supply in the region, in particular through the renovation of the substations and of the transmission line. However, at 3-4 MVA, the capacity utilisation of the transformers in the Sarandë and Gjirokastër substations is relatively low. This is because the conversion of the distribution network for the cities (not part of project A) to the 20kV level is going more slowly than expected (the project transformers operate at 20kV, while the old transformers operate at 6kV) – cost-covering tariffs are considered the most important factor here. The network feed-in is also important for the stability of the network. The training measure for the “Regional Management Unit” to reduce the distribution losses was unable to produce sustainable results following the restructuring of the implementing agency. Furthermore, invoicing is now centralised in Tirana and has been outsourced to a private company. In summary, the effectiveness of Project A is given a rating of 3.

Project B indicators	Status PA, Target value PA	Ex post evaluation
(1) Annual load shedding in Albania one year after start-up of line operation	Status at PA: 620 GWh Target value: under 100 GWh (Commissioning: 2011)	Met. According to the OST, there has been no load shedding since the start-up of the line operation
(2) Annual transit volume of electrical energy through the line three years after start-up of operation (2011)	Status at PA: 0 Target value: > 1,500 GWh	Met. 2011 2012 2013 2014 2015 585 1,092 1,250 2,045 1,636

The indicators for project B are fulfilled. As a result of the connection, Albania fulfils the n-1 criterion of the ENTSO-E with regard to its connection to neighbouring countries, thus reducing the network's probability of default (operability of the network even if one element fails). Albania is not yet a member of the ENTSO-E, but it will soon be granted full membership. The project has also contributed to the creation of a regional electricity market. Electricity trading in the region is permitted as part of the important South Eastern Europe ring connection between Albania, Montenegro, Kosovo, Macedonia and Greece. Line capacities are auctioned off by the "Coordination Office in South Eastern Europe" (SEE CAO) in monthly and annual auctions.

The software financed as part of the complementary measure is utilised and is of great benefit.

We rate the effectiveness of project B as good.

**Effectiveness rating: 3 for project A, 2 for project B**

### Efficiency

Project A worked extensively on all levels (electricity generation, transmission and distribution as well as loss reduction) to improve the electricity supply in Southern Albania. In terms of its design it has made an efficient contribution to improving the electricity supply in Southern Albania. Following an international tender, its implementation was awarded to a general contractor. The result of the tender was well above the original estimates, which are considered overly optimistic from today's perspective, meaning that additional financing was required. The renovation requirements, which were greater than previously anticipated, also resulted in higher costs. The project was therefore implemented in two phases. The specific costs for the renovation of the power stations are within the usual range at around 700 EUR/kW, however, the project implementation as a whole has been severely delayed.

In the appraisal report it was accepted that, had the planned rehabilitation measures not been carried out, electricity production in the two Bistrica power stations would likely have come to a quick standstill, and the maintenance of the planned electricity production (160 GWh/year) was attributable to this project alone; using the "sunk cost" method, the real dynamic production costs of hydropower generation in Bistrica were determined at less than 0.01 EUR/kWh (around 1.7 Lek/kWh). After an initial refusal, the new owner of the HPS allowed the KfW mission to visit the HPS following the intervention of the MEI, but provided no further information. For this reason, we made a rough calculation based on the "sunk cost" method and the actual renovation costs, and calculated dynamic production costs of 1.59 EURct/kWh. Overall, however, the electricity sector in Albania does not operate efficiently and cost-covering. The average tariffs for end-users between 2012 and 2014 were low at approximately 6.8 EURct/kWh. A new tariff structure was introduced as of 1 January 2015, with household tariffs set at 9 Lek/kWh (about 6.4 EURct/kWh).

As a result of the comparatively high costs and delayed project implementation as well as the inefficiencies in the sector, the project – to which no better alternative has been identified – is still assessed as satisfactory with regard to efficiency.

According to the results of the final inspection, project B was completed within the cost estimate. However, additional charges amounting to EUR 8.6 million were awarded to the general contractor by an international court of arbitration (due to the delays, amongst other things). According to the implementing agency OST, it was possible to reduce this figure to just under EUR 7 million in direct negotiations. Due to the low domestic costs, the total costs are still well below the estimates made at the PA, however. At around EUR 0.34 million/km, the costs of the line are considered appropriate by the implementing agency. In terms of raising efficiency, it should be noted that the line has been designed as a double circuit line on one subsection, with the Tirana-Kosovo line also running on the same pylons.

It was determined at the PA that the project would have good individual and macroeconomic profitability. Due to allocation problems in a regionally networked transmission system, these profitability calculations are considered arbitrary from today's perspective. For example, electricity was imported from Montenegro on the 400kV line and exported at the same time on the 220kV line. Given the expected utilisation of the

line, we assume efficient use. Overall, the project efficiency is considered to be satisfactory due to the delays and, above all, the sectoral inefficiencies in Albania.

**Efficiency rating: 3 for both projects**

## Impact

The development objective for project A was the cost-effective improvement of the electricity supply and thus the economic development of south-west Albania. Separate indicators were not defined; by fulfilling the project objective indicators, the ultimate objectives were to be considered fulfilled as well. However, the share of productive consumption, which was formulated at the objective level (i.e. “outcome”) at the PA, belongs – in terms of intervention logic – to a higher level (i.e. “impact”) as a matter of principle. This aspect is largely considered outdated by today’s assessment standards, however. After all, the productive share of electricity consumption according to OSHEE accounting is around 50%. Yet since tourists stay in private accommodations, for example, the share of productive consumption is likely to be higher and in line with the expectations as at the PA.

From today’s point of view, the climate impacts are emphasised in energy investments. The project made it possible to maintain the climate-friendly use of hydropower. It is questionable whether the project made an additional contribution to reducing emissions: if the 28 GWh attributable to the increased use of hydropower (from 140 to 168 GWh, see section on “Effectiveness”) were generated in Montenegrin or Kosovan coal power plants, this would result in annual savings of approximately 25,000 t/CO<sub>2</sub>.

The measures tackled a significant development bottleneck for the region. It can be assumed that the economic development of the region, and of tourism in particular (over 100,000 visitors p.a.), would not have been possible without the improved electricity supply. The regional administration was not able to provide data to substantiate this statement, however. Still, electricity consumption in the Gjirokastrë district (to which Sarandë belongs) – which was over 210 GWh in 2014 and 2015 – and revenues of 2.6 and 3.0 million Lek (approximately EUR 18.2 million and EUR 21.1 million) indicate significant economic activity (around 88,000 connections; productive share of electricity demand over 50%), although it is unclear to what extent these figures also include late tariff payments from previous periods.

There were no disadvantageous environmental effects with the project, as it only involved the renovation of existing plants.

Due to the importance of an improved electricity supply for the tourism sector, and thus for the economic development of the region, we assess the impact as good, despite the fact that the indicators for the project objective were only partially met on time.

The development objective of project B was to contribute to the economic development of Albania and to strengthen regional cooperation. Separate indicators were not defined; by fulfilling the project objective indicators, the development objectives were to be considered as fulfilled as well.

The measures focused on a substantial development bottleneck. Albania is regularly dependent on imports due to inadequate production capacities. These capacities are furthermore subject to considerable fluctuation due to the high share of hydropower. For example, over the past 10 years, between 2.94 TWh and 6.92 TWh were produced and between 1.24 TWh and 3.47 TWh were imported each year. Without the improved import options for electricity - and as a result of the lower production due to decreasing rainfall - considerable load shedding would have occurred, resulting in economic losses. It can furthermore be assumed that the economic development of the country would not have been of the same size (GDP growth between 1.4 and 2.8% since 2012) without the improved electricity supply. Among other things, regional cooperation has also improved, thanks to the auctioning of line capacities by the “Coordination Office in South East Europe” (SEE CAO) in monthly and annual auctions.

**Impact rating: 2 for both projects**

## Sustainability

The hydropower stations Bistrica I and II, which were renovated as part of project A, produce electricity and feed it into the national transmission network. From a technical point of view, and in view of the pro-

duction capacities located mostly in the north of the country, these power stations contribute to the stability of the network. As part of Albanian privatisation policy, the two power plants were privatised in 2013 and, following an international tender, sold to a foreign company at a purchase price of EUR 52 million. With this investment, the company in question aimed to reduce electricity costs for its steelworks located at Elbasan. From an economic perspective, the income from the hydropower stations remains with the owner. The transmission company OST receives the usual transmission tariffs. The privatisation – comprising a total of four hydropower stations with a purchase price of EUR 109.5 million – was supported by the IFC with up to EUR 66 million. In April 2016, the acquiring company fell insolvent, without this having affected plant operation to date.

At the time of the EPE, the future of the two hydropower stations is still unclear. It has been suggested by local dialogue partners that the maintenance and servicing of the power stations have been kept to a minimum since their privatisation, owing to the difficult financial situation of the owner. This assessment is supported by the visibly inadequate maintenance work that has been carried out on the hydro-engineering installations. We anticipate the continued operation of the renovated power plants (under whose ownership it is yet unknown); for the above reasons, however, we assess the sustainability of these project components (2/3 of the project costs) only as satisfactory.

We consider the sustainability of the project components “transmission line” and “substations” to be good, given the adequate financial situation of the OST, and the sustainability of the distribution components to be satisfactory given the poorer performance of OSHEE.

Based on the importance of electricity exchange with neighbouring countries, we can assume that the line is treated as a priority in terms of maintenance and servicing. The financial and technical options available should also allow the OST to ensure adequate maintenance of the line in the future. We therefore rate the sustainability of project B as good.

Ultimately, we expect that the sectoral reforms introduced will be continued and the efficiency of the sector will further improve.

**Sustainability rating: 3 for project A; 2 for project B**



### 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:

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

Rating levels 1-3 denote a positive assessment or successful project while rating levels 4-6 denote a negative 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. Rating levels 1-3 of the overall rating denote a "successful" project while rating levels 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" (level 3).