KfW Development Bank

Ex-post evaluation
110-kV Circuit Line South Albania, Albania

Title	110-kV Circuit Line South Albania		
Sector and CRS code	Electric power transmission and distribution (CRS code 23630)		
Project number	BMZ no. 2006 65 505, 2008 65 188 and 2014 70 095 (CM)		
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient/Project-executing agency	Ministry of Finance Albania / electricity transmission company OST		
Project volume/ Financing instrument	11.25 million EUR budget loans (Tranche I), EUR 37.75 million low interest loans (Tranche II), 2 million EUR grant (CM)		
Project duration	January 2010 – June 2020 and December 2018 – June 2021 (CM)		
Reporting year	2023	**Year of random sample**	2022

Objectives and implementation of the project

The objective underlying the ex-post Evaluation at outcome level was to contribute to an efficient and reliable energy supply that would be secured over the long term. Sustainable development in southern Albania was to be strengthened and a positive contribution to climate change mitigation made through a quantitatively and qualitatively improved electricity supply (impact level). The project included the building or rehabilitation of transmission lines and substations. A complementary measure financed the strengthening of the electricity distribution company OSSH, which is to operate the financed switchboard plants in the electricity distribution network.

Key findings

The project addressed significant bottlenecks in the electricity supply in southern Albania and is still highly relevant to the region and the Albanian energy sector. Overall, the project is rated as “successful” for the following reasons:

– The project was in line with Albanian priorities and plans to further expand and strengthen the transmission network.

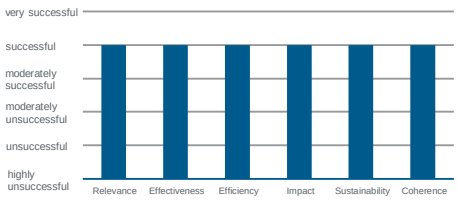
– Closing the power transfer ring (110 kV south ring) significantly improved the quality and quantity of electricity supply in southern Albania and created redundancy in the transmission. The security of supply created by this is central to the entire region of southern Albania.

– The improved electricity supply and security of supply supported economic development in southern Albania, which is mainly focused on the tourism sector.

– The transmission capacities and their expansion options have already been included in the project planning through forward-looking design. This marked the first milestone for the gradual expansion and grid connection of future renewable energies in southern Albania.

– The quality of the implemented infrastructure and its maintenance suggests sustainable use. The fact that the definition of the operating and maintenance concept, including budget, is still pending from OST, means that sustainability is not certain.

Overall rating: successful



Conclusions

– The creation of redundancy or the closure of parts of the power grid that are essential for redundancy are crucial for security of supply and have the potential to have particularly strong effects.

– A predictive design of the components of the power transmission system is particularly efficient in the event of foreseeable increases in demand as well as the expansion and connection of renewable sources of energy.

– If interrelated components such as transmission infrastructure, substations and grid connections are the responsibility of different operators, a clear concept with regard to implementation, handover and operation is required as early as possible in the planning phase.

Ex post evaluation – rating according to OECD-DAC criteria

Overview of sub-ratings

Relevance	2
Coherence	2
Effectiveness	2
Efficiency	2
Overarching developmental impact	2
Sustainability	2
Overall rating:	**2**

The BMZ projects are evaluated jointly. Because both BMZ numbers (two tranches) are designed identically (joint PA), their measures and results cannot be assigned to individual tranches and their effects cannot be distinguished from each other.

General conditions and classification of the project

The available electricity generation capacity in Albania was 1,450 MW at the time of the programme appraisal (2009). Hydropower was the dominant power generation technology, accounting for around 98% of the total domestic electricity generation of 2,947 GWh (2007). This resulted in an extreme dependence on annual precipitation volumes. In 2007, reduced electricity generation due to insufficient precipitation could only be compensated for by imports amounting to 2,935 GWh (around 50%) in order to meet the total Albanian electricity demand amounting to 5,882 GWh. However, due to insufficient capacities of the cross-border transmission lines, the growing demand in years with reduced electricity generation from hydropower could not be fully met by imports. Domestic power transmission capacities were also insufficient to ensure supply during peak periods, resulting in significant power outages that led to loss of production at businesses as well as adverse impacts on consumption and quality of life for private households. In particular, the southern Albanian electricity transmission and distribution network was in poor condition due to insufficient investment and maintenance. In addition, the reliability and stability of the electricity supply was low due to lack of meshing of the networks. Technical and non-technical losses in power transmission and distribution were comparatively high at more than 30%. The national economic damage caused by insufficient electricity supply was estimated to be at least 3% of gross domestic product (GDP) for 2007.

Albania has been undergoing a comprehensive transformation of its energy sector for years, with the aim of creating a more liberal, transparent and competitive market. Based on the requirements of the Energy Community and the Electricity Market Act of 2003, the first step was to unbundle the vertically integrated electricity company. At the time of the ex post evaluation (EPE), the majority of electricity generation is the responsibility of the state-owned electricity generation company Korporata Elektroenergjitike Shqiptare (KESH) and other private producers. The electricity transmission company Operatori i Sistemit të Transmetimit Sh.a. (OST/project-executing agency) is wholly owned by the state and, as in other countries in the region, is to remain under state influence in the future. The electricity distribution company Operatori i Shpërndarjes së Energjisë Elektrike Sh.A (OSHEE) was re-nationalised in 2014 following partial privatisation in spring 2009 (76% of the capital was acquired by the Czech electricity company CEZ). The legal unbundling of the electricity distribution company was completed in 2020 through the restructuring of the former integrated utility company OSHEE into a holding company of three subsidiaries, each authorised as a universal service provider (FSHU), electricity supplier (FTL) and distribution system operator (OSSH). The process of functional and accounting unbundling is ongoing. The regulatory authority (Ent Rregullator i Energjisë, ERE) is responsible for tariff setting, licensing, electricity sector supervision and consumer protection issues. Another step in the sector's reform towards a competitive market is the establishment of the Albanian electricity exchange in 2023.

Brief description of the project

In order to close the gaps in the existing 110 kV line network and to improve the quantitative and qualitative electricity supply in southern Albania, new transmission lines and substations were built or rehabilitated in the south-west and south-east. The project comprised three components with several investment measures (see annex Project measures and their results). As part of component 1, a 105 km long 110 kV transmission line was built in the south-west part of Albania and the associated switchboard plants were upgraded. Component 2 included the construction and rehabilitation of 143 kilometres of 110 kV transmission lines, as well as the rehabilitation and expansion of associated switchboard plants in south-eastern Albania. Component 3 included the building of 110/35/20 kV substations and their connection to the existing power distribution network in Orikum and Himare.

The objective of the additional complementary measure through advice in the areas of power distribution, human resources and corporate governance was to strengthen the power distribution company (now OSSH), which is also to operate the switchboard plants financed by the programme in the power distribution network. Beneficiaries were all electricity consumers connected to the grid in southern Albania.

Breakdown of total costs

In million EUR	Inv. (planned) Tranches I and II	Inv. (actual) Tranches I and II	Complementary measure (planned)	Complementary measure (actual)
Investment costs (total)	**51.7**	**49.1**	**2**	**1.9**
Counterpart contribution	2.7	0.1	–	–
Debt financing	49	49	2	1.9
of which BMZ budget funds	*49*	*49*	*2*	*1.9*

Map of the project country incl. project locations

Source: OpenStreetMap, own presentation.

Evaluation according to OECD-DAC criteria

Relevance

Policy and priority focus

The objectives of the project were in line with Albania's priorities as well as with the national strategies of the time and today. The priorities of the National Strategy for Development and Integration 2007-2013 included, in particular, in the energy sector, improving security of energy supply at affordable costs for Albanian citizens while minimising the environmental impact and the development of renewable energies as well as the reform and restructuring of the sector on the basis of market economy principles and integration into the European energy market.

Furthermore, the project's objective then as today is in line with the German federal government's objective of supporting Albania as a transformation partner country in the EU neighbourhood in political and economic change processes as well as in its convergence with the European Union (adoption of the "EU acquis", all rights, duties and obligations binding on EU members). The cooperation focuses in particular on the agreed core topics of "Climate and energy, just transition" and "Sustainable economic development, training and employment". The project is also integrated into the BMZ core topic strategy "Responsibility for our planet – climate and energy".

Focus on needs and capacities of participants and stakeholders

At the time of the project appraisal, network analyses revealed bottlenecks in the transmission network, particularly in southern Albania. The quantity (prevention of load shedding and transmission losses) and quality (particularly stabilisation of voltage) of the electricity supply in southern Albania could be greatly improved. The majority of the existing 110 kV overhead power lines in southern Albania were severely outdated and not sufficient to ensure supply during peak load times. The transmission network in this area consisted of numerous lines of relatively long length, which were connected radially to each other. Failures of the 110 kV overhead power lines in place at the time resulted in interruptions to the electricity supply throughout the region due to the lack of network meshing. Prior to the implementation of the project, the southern grid was also disconnected from the Albanian grid during periods of higher electricity consumption in the winter and summer months due to high load levels and low voltages, so that part of the southern grid had to be operated in island mode and supplied from Greece. The pipeline network therefore did not meet the requirements resulting from participation in the European interconnected network operation. In addition, due to the increased current flows and overload on numerous long overhead lines, the voltages in a number of switchboard plants were well below the permitted standard values during normal operation. Average voltage deviations from the standard value at the 110 kV level in the amount of around 21% significantly limited the functionality of the switchboard plants and the electricity supply to the ultimate buyers.

Consequently, the core problem was correctly identified. As a result, the project addressed the closure of the circular distribution main with the state power transmission company OST as the executing agency, which was responsible at the time as it is today. OST is also responsible for designing the transmission network. There is a dedicated unit responsible for analysing and designing the development of the transmission network at national level. It draws up and regularly updates a national development plan for the transmission network based on information from various stakeholders. It covers the next 10-15 years and serves as a reference master plan for the preparation of the annual investment plans.

Since transmission lines and substations are measures that are not aimed at certain target groups, there is no specific target group benefiting from the project in the narrower sense in which the needs and capacities of particularly disadvantaged or vulnerable groups would have been taken into account. This also applies to gender impact potential.

Appropriateness of design

The target system was conceptually comprehensible and verifiable (see Annex 1). The project was based on the following theory of change: A) Closure of the circular distribution main as well as construction, rehabilitation of further transmission lines, expansion of switchboard plants, connection of the 110 kV lines and construction of two substations as well as connections to existing distribution networks (output) and B) Strengthening of the management of the electricity distribution company OSSH (output of the CM) → Elimination of bottlenecks in the transmission network and improved transmission of electricity and feed-in to distribution networks →

Improvement of electricity supply (outcome) → More stable production conditions and higher productivity as well as the development of tourism → Contribution to sustainable economic development and the reduction of greenhouse gas emissions as well as local environmental damage (impact).

Transmission projects are primarily aimed at securing the power supply infrastructure and integrating renewable energies. Through the resulting energy efficiency gains and connected renewable sources of energy, they also contribute to the reduction of CO_2 emissions and are an important prerequisite for economic development. Specifically, the closure of the circular distribution main as well as the construction and rehabilitation of further transmission lines lead to the elimination of bottlenecks in the transmission network (reduction of load shedding and stabilisation of voltage) and enable a quantitatively and qualitatively improved electricity supply in southern Albania (outcome). As a result, on the one hand, frequent power cuts, which result in severe restrictions in almost all areas of daily life, and on the other hand, voltage fluctuations, to which many machines and systems react sensitively, are reduced. This leads to improved production (reduction of production losses) and investment conditions in the manufacturing industry. The tourism industry, which is important for the region, also benefits from a more stable electricity supply. Both are important for the sustainable economic and social development of southern Albania. In addition, fewer electricity transmission losses and the possible connection of electricity generation systems based on renewable energies in Albania contribute to reducing greenhouse gas emissions and thereby to climate change mitigation (impact).

The underlying theory of change and its impact relationships were plausible at the time of the appraisal and the ex post evaluation (EPE). The design was based on a holistic approach to sustainable development. The project was primarily aimed at ecological and economic sustainability. Ultimately, the project impacts the social dimension of sustainability through an efficient, reliable electricity supply secured over the long term.

The programme's design, including its technical, organisational and financial design, is considered to be suitable for contributing to the solution of the core problem: the closure of the 110 kV southern line is essential for the security of supply of the entire southern region of Albania. The measures and their scope are considered essential for the functionality of the system and are considered suitable – as conceptually intended – to close these gaps in the transmission network in southern Albania. The project is characterised by the forward-looking design of the power lines in the section from Babice to Sarande (component 1) with regard to the possibility of running a second power circuit in order to be able to meet higher demands with an increase in transmission capacity in the future. The project’s focus on the southern region of Albania is considered judicious. From the perspective of the EPE, the capacities of the partner government and OST, the only suitable executing agency for this project due to the amount of responsibility it entails, were realistically estimated and appropriately taken into account in the design.

The project was conceptually suitable for contributing to achieving the DC programme objective. The aim was to reliably and cost-efficiently supply households and companies with electricity and to make a positive contribution to global climate change mitigation by increasing energy efficiency on both the supply and demand side. Specifically, the project was able to contribute to the following objectives on a design level: “Achieving CO_2 savings” and “Contributing to sustainable economic and social development”.

Response to changes/adaptability

The criteria for measuring the transmission capacity of the lines were based on the technical, geographical and environmental aspects of the feasibility study. This contains the corresponding forecasts, which also included, inter alia, the long-term urban and tourist development of the areas concerned.

At the start of the project, the implementation of component 3 was initially removed from the design due to the privatisation of the electricity distribution company at the decision of the project-executing agency and resumed after the renationalisation of the electricity distribution company. This resulted in delays and additional costs in connection with the implementation consultant (see Production Efficiency).

The design of the programme was adapted in the western and eastern parts of the project in order to avoid national parks. These adjustments are positive from an environmental point of view, even though the routing has been extended compared to the original design.

Summary of the rating:

The project tackled a key bottleneck. The underlying theory of change and its relationships were plausible. The project was conceptually suitable for contributing to solving the core problem. It was integrated into the policies and priorities of both the Albanian government and the German government, and adequately took into account the capacities and potential of the Albanian partners. The project is still of great importance for the southern region of Albania, as its strategy focused on improving the electricity supply, which is an essential factor for the development of the region and also laid the first building blocks for the future expansion of renewable energies in the region, as well as taking into account the political objective of integration into the European energy market. Overall, the project's relevance is rated as successful.

Relevance: 2

Coherence

Internal coherence

The project is consistent with both the MDGs at the time as well as with Agenda 2030 and the Paris Climate Agreement (see Agenda 2030). The objectives of the project are in line with the German DC programme in Albania. Germany's involvement in the energy sector contributes to environmental and climate change mitigation, to improving the living conditions of the Albanian population and to sustainable economic growth. The Financial cooperation (FC) focuses on the expansion and modernisation of transmission networks, including their connection to regional network systems and promotion of renewable energies (hydropower), as well as increasing energy efficiency and supporting sector reforms. The combination of investments in infrastructure modernisation and reform financing is proving to be profitable. Synergies existed and continue to exist, in particular with the following financial cooperation projects:

1. Southern Albania electricity supply (BMZ no. 1998 65 841): Expansion of the network in the district of Sarande; the 110 kV transmission line from component 1 of the project evaluated here was connected to the renewed substation. This results in improved utilisation of generation capacities for southern Albania's electricity supply.
2. 400 kV transmission line Albania-Montenegro (BMZ no. 2001 40 798): Expansion of the capacity of the cross-border transmission line, thereby stabilising and improving the Albanian electricity supply.
3. Southern Albania Bistrica II electricity supply (BMZ no. 2003 66 617): Rehabilitation of two hydropower plants in Bistrica and contribution to Albania's electricity supply.
4. Energy sectoral programme (BMZ no. 2004 66 276/2005 70 093): Development and rehabilitation of small hydropower. The transmission lines built or rehabilitated as part of the project evaluated here enabled small hydropower plants to be connected to the grid, which increases grid security in southern Albania and improves the electricity supply.
5. 400 kV transmission line Albania-Kosovo (BMZ no. 2008 65 196): Expansion of the capacity of the cross-border transmission line will allow higher electricity imports for Albania, which will therefore also be available for supply in the south of the country.
6. Investment programme for electricity distribution (BMZ no.: 2016 67 518): The rehabilitation and expansion of the dilapidated electricity distribution network as well as the digitalisation of the communication and control systems are intended to reduce technical losses and make a significant contribution to Albania's reliable electricity supply.
7. Sector reform programme (BMZ no. 3010 00 421): Support the implementation of energy sector reforms to liberalise and build the energy market in line with EU regulations.

Content-related links to technical cooperation arise in the areas of energy efficiency and the expansion of renewable energies. The technical cooperation has supported energy efficiency measures at municipal level as well as the Albanian Ministry of Infrastructure and Energy since 2015 with an integrated specialist as an adviser on energy policy and since 2020 for the implementation of the Renewable Energies Act as well as the development of an electricity exchange.

External coherence

The project is still in line with Albania's development objectives and sector plans (see Relevance – alignment with policies and priorities). The project supported the identified need for investment in the Albanian transmission network. The transmission lines have been and will be further expanded in accordance with the needs identified in the master plan for the development of the OST electricity transmission network (see Sustainability – capacities of the parties involved and those affected). Complementary to the project, OST made investments to improve the transmission network, such as the installation of a 400 kV shunt reactor at the Zemblak substation. The implementation of further investments to supplement the project measures was planned by OST at the time of the EPE, e.g. the connection of all substations to the SCADA system.

The donor activities are coordinated by the Ministry of Infrastructure and Energy. Germany, Italy, France, Switzerland and Austria, as well as the World Bank Group, the EIB and the EBRD as multilateral donors, were and are important donors in the Albanian energy sector. The project was coordinated with the World Bank, the EBRD and the Cooperatione Italiana.

Summary of the rating:

The project was integrated into the country strategy and the energy priority area, and complemented the commitment of the DC instruments. The project also complemented and supported Albania's own efforts. Coherence is therefore considered successful.

Coherence: 2

Effectiveness

Achievement of (intended) targets

The objective underlying the Ex-post Evaluation at outcome level was to contribute to an efficient and reliable energy supply that would be secured over the long term.

The target achievement at outcome level is summarised in the table below:

Indicator	Status PA	Target value PA/EPE	Actual value PCR	Actual value Ex post evaluation
(1) Annual availability of the new electricity transmission and substation capacity created in southern Albania	0	≥98%	98.3%	97.5% and 99.99% respectively (2022) and 97.5% and 99.97% respectively (2021) Achieved (see explanatory notes)
(2) Deviation from 110 kV standard value to improve voltage profile	21%	maximum 5%	0.4%	2.3% (2021) and 2.2% (2022) Achieved
(3) Power transmission losses	8%	2%	2.3% (2020)	2.13% (2021) Achieved (see explanatory notes)

Contribution to achieving targets

Indicator 1: Annual availability was 97.5% as a result of planned outages due to maintenance, which totalled nine days in 2022. Looking at the unplanned outages, these were very low at 62 minutes in 2022. In 2021, the unplanned outages also only amounted to 162 minutes. Taking into account unplanned outages only, availability totals only 99.99%. A total of nine days for all planned maintenance on different sections has been factored in. This is considered appropriate for the required work. In view of the planned maintenance and the very low

number of unplanned outages, the availability is considered to be fulfilled overall. Without the implementation of the programme, the reported power outages of 4-12 hours in 2007 would undoubtedly have continued to increase with growing electricity demand.

Indicator 2: The deviation from the 110 kV standard value to improve the voltage profile was met at 2.2%. The improvement of the voltage profile through the reduction of the voltage deviation results from the building of the new transmission infrastructure and the associated load reduction in the transmission network.

Indicator 3: The power transmission losses were reduced from around 8% to 2.13% at the time of the EPE and are therefore marginally above the target value of 2%, which is tolerable.

By creating new transmission power and the loop, the voltage profile could be improved and the flexibility of the transmission network increased. The closure of the ring creates redundancy in the electricity grid and enables the fulfilment of the N-1 criterion of the Association of European Transmission System Operators (ENTSO-E).[1] OST has since become a member of ENTSO-E. Improving the grid's supply reliability also set the first milestone for the gradual expansion and grid connection of future renewable energy plants in southern Albania.

The use of the 110 kV line lies between Memaliaj-Kelcyre-Permet-Erseke-Korce during the dry summer months due to low power generation from the hydropower plants and average load at a utilisation of 25% to 30%. During the winter, with higher hydropower generation, grid utilisation increases, but is still below the payload, leaving the line with free capacities. This is to be assessed as positive, as it will be possible to cover increasing electricity demand in the future and enable the connection of new wind power and solar power plants.

Responsibilities are shared between OST and OSSH in each of the rehabilitated and new switchboard plants. The power transmission company OST is only responsible for the high voltage switching panels on the 110 kV side and the associated protection, control and telecommunications facilities. The medium voltage switching panels are assigned to the distribution company OSSH.

The substations in Orikum and Himare, which are connected to the 110 kv line from Babice to Sarande, were built by OST on behalf of the distribution system operator OSSH, as the distribution system operator underwent a privatisation/renationalisation process at the time of project planning. The substations are to be transferred to the now state-owned company OSSH. The new substations have also been prepared for transmission to the 20 kV distribution level. This is considered to be expedient as the planned conversion of the entire distribution network to 20 kV will enable more areas to be covered. The connection at the 20 kV distribution level is the responsibility of OSSH and has not yet been implemented. As a result, the capacities created by the 20 kV systems are not used at the time of the EPE, and it is unclear when they will be used. There is therefore a risk of unused assets.

The complementary measure with a focus on an efficient OSSH distribution company in the electricity distribution department was also key to achieving the project's objectives at outcome level. The aim of the programme was to support the Albanian government in overcoming the sector crisis in the distribution sub-sector, in particular by financing management support for the distribution company (now OSSH) in the areas of optimisation of distribution network operations and human resources, as well as general management and finance. This made an important contribution to the institutional reorganisation of the distribution sub-sector. This was also important for component 3, as the substations financed under it in Orikum and Himare will be transferred to the distribution company (now OSSH) and the necessary management skills must be available in OSSH. Despite the above-mentioned basic creation of the necessary capacities within the framework of the CM, the takeover of the above-mentioned substations is still pending at the time of the EPE (2023).

Regarding the optimisation of the distribution network operation, despite the target achievement previously stated, the total energy losses and the average duration of interruptions to the energy supply per customer remain high compared to European standards. Therefore, further efforts are needed in terms of total energy losses in the distribution network, including: the full implementation of the proposed consulting support measures by OSSHE as well as additional infrastructure investments in the distribution network area.

[1] Reduction of the probability of default of the network (functionality of the network even in the event of en element default)

The beneficiaries of the project are the electricity consumers connected to the grid in both cities and rural regions of Albania. Access to the measures implemented as part of the project shall be granted equally to all users. There are no restrictions, advantages or disadvantages for any group.

Quality of implementation

The quality of implementation and target achievement were positively influenced by the support of the project implementation unit (PIU) of the project-executing agency OST, which was responsible for the implementation of the project. The PIU was sufficiently equipped in its capacities. In addition, the quality of the implemented measures was ensured by the support of an implementation consultant. No deficiencies were identified during the EPE with regard to the proper implementation of the project components and their quality. The appraisal showed that the service provided was good quality and was in accordance with the specifications that had been laid out. Overall, project implementation was good quality.

Unintended consequences (positive or negative)

The impact on the environment in this sparsely populated region is normal for transmission line projects but is also at a low level. The impact involved a change in the landscape as a result of route construction. As part of the construction work for the transmission towers, access roads had to be built in the green landscape. However, these have partly grown back over time due to natural vegetation and recultivation. No people had to be resettled due to the building of the new overhead lines, as the area in southern Albania is not densely populated. Compensation for construction of transmission towers was given to landowners. The overhead lines have been designed to avoid crossing national parks and therefore reduce the impact on the flora in the project region. No unintended positive or negative effects can be determined beyond the above-mentioned effects.

Summary of the rating:

The project largely met the associated indicators and was able to make contributions towards creating an efficient and reliable electricity supply that is available over the long term. Despite the previously unused switchboard plants at the 20 kV distribution level of the Orikum and Himare substations, the expectations and targets were met overall. Against this background, the effectiveness is rated as successful when looking at the project as a whole.

Effectiveness: 2

Efficiency

Production efficiency

The project's measures were divided into three components during implementation. The design initially envisaged implementation in two components. The building of the substations in Orikum and Himare and their connection to the 110 kV grid was originally integrated into component 1. However, the measures in Orikum and Himare were removed from the design and not implemented by the project-executing agency at the start of the project. This made sense as the electricity distribution company was being privatised at the time. In 2014, the distribution sector went back under state administration and the state-owned electricity distribution company OSSH was founded. After the successful implementation of components 1 and 2 and the re-nationalisation of the electricity distribution company, the construction of the new substations was finally included in the programme again and financed from the project funds still available (component 3, see map of the project area).

For the implementation of the project, a term of 38 months was planned for the implementation of the delivery and service lots and 12 months for the tender and preparatory activities by the implementation consultant. Overall, the term was estimated at 50 months. The actual duration of the project was 3,106 months from the signing of the consulting contract until the takeover of component 3. This is primarily due to the above-mentioned decision to remove component 3 from component 1 first and only to include it in the project again and then implement it downstream after the implementation of component 1 and component 2. Exclusively taking into account the implementation time until completion of component 1 and component 2, the project duration is around 75 months. Completion of component 1 and component 2 took place within the corresponding contract deadlines. There was also no delay in the implementation of component 3.

The complementary measure could only be designed in 2014 after the above-mentioned renationalisation of the electricity distribution company (now OSSH) and is in connection with the implementation of the substations for the distribution network area, which was ultimately carried out as part of component 3.

The components were awarded in an international open tendering procedure. This gave all international and local participants the opportunity to bid. Due to the competition, it can be assumed that the funds are used economically. The total costs of the project correspond to the original cost estimates. The specific costs of the investment components are in the range of comparable transfer projects (international comparison). The initial cost estimate for the implementation consultant was also acceptable. However, this increased by 50% and is considered to be high at 10% in relation to total costs. This was due to the time extension of the implementation and additional expenditure arising from building a modified route to bypass the Logara National Park. The additional costs were financed from contingencies and did not lead to an increase in the total project costs.

Allocation efficiency

The project's measures closed the gaps in the transmission network in southern Albania. All implemented components are considered essential for the functionality of the system and are therefore considered efficient from an overall economic perspective. There were no expedient and cost-efficient alternatives to close the aforementioned gaps. The forward-looking design of the transmission towers of the section from Babice to Sarande (component 1), which can lead to a second circuit if demand grows due to an increase in transmission capacity, is also considered efficient.

The role of the regulator ERE and its decision-making is of particular importance for the operation of the transmission network by OST, as the transmission charge is determined by ERE. The amount of the transfer fee determines the company's income and the coverage of the costs of its activities. Transfer fees have increased in recent years, but remain at a level that does not fully cover costs. For example, the electricity transmission tariffs requested by OST from the regulatory authority for 2022-2024 equate to approximately 67% of the requested tariff. In principle, the Albanian budget continues to provide financial support to state-owned companies in the electricity sector in order to keep electricity tariffs unchanged for households and most companies. In the long term, this government subsidy is inefficient and will be increasingly difficult to maintain in the event of further external energy price increases. In addition, the low electricity price also promotes inefficient electricity use at the consumer level. Full covering of the costs can only be achieved with cost-oriented pricing as part of further reforms in the electricity sector. The project's measures had no influence on the previously presented tariff system. As a result, the impact of the measures on the income situation of OST remains low.

Summary of the rating:

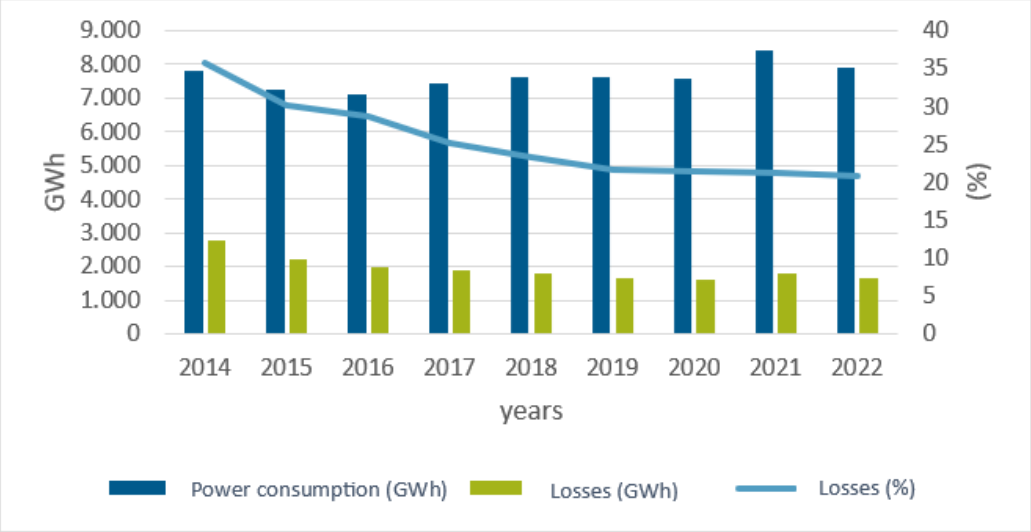
The implementation of the project is considered efficient from a macroeconomic perspective, as there were no sensible and cost-efficient alternatives to the implementation of the project. The specific costs of the project were appropriate. Despite the additional costs for the implementation consultant caused by the delay in the implementation of the components, the overall production efficiency is still rated as successful. Overall, the efficiency is rated as successful.

Efficiency: 2

Impact

Overarching developmental changes (intended)

Albania's electricity consumption has remained constant since 2014 and has only increased by 1.6%. However, electricity generation continues to be heavily dependent on hydropower due to ongoing insufficient diversification and has fluctuated strongly in recent years. In 2015, for example, electricity imports amounted to 12%, compared to 46% in 2017. Investments in electricity transmission infrastructure reduced losses from 35% (2014) to approximately 21% (2022). The majority of the losses are in the distribution network area, where investments are still necessary.



Source: Own presentation

The objective underlying the ex-post evaluation at impact level was to strengthen sustainable development in southern Albania and to make a positive contribution to climate change mitigation through a quantitatively and qualitatively improved electricity supply.

Target achievement at the impact level can be summarised as follows:

Indicator	Status PA	Target value at PA	Actual value at final inspection	Actual value at EPE
(1) Savings in CO_2 emissions (t/year)	0	10,000 [1)]	10,000	2,500 (in 2022) [2)] Not achieved

[1)] CO_2 coefficient: 0.400 t CO_2/MWh (calculation at appraisal)

[2)] CO_2 coefficient: 0.346 t CO_2/MWh (Combined Margin Greece: Calculation based on "Harmonized_IFI_Default_Grid_Factors_2021_v3.2_0")

Contribution to overarching developmental changes (intended)

Given the lower utilisation of the transmission line in 2022 (calculation basis; lower load flow, see Effectiveness – Contribution to achieving targets) and a slightly lower emission factor than assumed at the time of the audit, the saving of CO_2 emissions amounted to only 2,500 t CO_2 per year. However, the connection to the electricity grid already made by the transmission line (see Coherence – Internal coherence) as well as the future connection (newly added) of generation capacities from renewable sources of energy and the associated CO_2 emission savings are of much greater importance than the direct reduction in CO_2 emissions through reduced transmission losses.

As part of the EPE, it is only possible to evaluate the achievement of targets with regard to the sustainable development of southern Albania on a qualitative basis. Consideration of general economic key metrics would be inexpedient, as these depend on a wide range of influencing factors. The project's direct contribution to sustainable development in southern Albania cannot be ascertained from these. Even though it is not possible to directly attribute or reliably quantify the project's contribution to macroeconomic development, the relationship between electricity supply and economic development is plausible.[2] An efficient and reliable electricity supply that is secured over the long term, as well as sufficient generation, is an important prerequisite for economic development. The project made a (plausible) important contribution to the development of the region by closing the gaps in the transmission network in southern Albania and the resulting electricity supply that is secured over the long term.

[2] Stern, D. I, Burkes, P. J, and Bruns, S. B. (2017). The Impact of Electricity on Economic Development: A Macroeconomic Perspective. UC Berkeley: Center for Effective Global Action.

Since the project was completed, an improved quality of supply has been observed in all sections of the transmission lines and substations in this area (see Effectiveness – Achievement of (intended) objectives) for the consumer (private households and businesses). As the development of the region is largely dependent on tourism and electricity demand is therefore many times higher in the summer months, a secure electricity supply is important for the tourism sector. For example, during the on-site evaluation in January 2023, hotel employees reported that electricity supply had improved significantly. The last power outage had been six months prior (summer season 2022) and lasted only 30 minutes. Accordingly, power outages are no longer considered a problem for the region. It is obvious that tourism would have continued to grow regardless of the project. Without a secure electricity supply, more diesel generators would probably have been installed and therefore more CO_2 emissions would have been produced.

The creation of access to the transmission network for the expansion of renewable energy sources in this region is also important for further economic development. It was found that the region displayed a lot of potential for harnessing wind energy and there were several expressions of interest for wind turbines to be connected to the grid. In the near future, the increase in wind power capacity is likely to be the most important development for this region, underlining the future need for higher transmission capacities and the forward-looking design (see Relevance – Appropriateness of design).

With the results at impact level described above, the project helps achieve the DC programme objective *(private households and companies are reliably and cost-efficiently supplied with electricity. Increasing energy efficiency on the supply and demand side makes a positive contribution to global climate change mitigation.*) and contributes to the two programme target indicators of the DC programme *(sum of CO2* savings achieved by the modules as part of the DC programme as well as sustainable economic and social development). The project was in line with Albania's priorities and own efforts in the sector, and OST also made further complementary investments (see Relevance and Coherence). As a result, the project contributed to the development of the sector, but did not have an exceptionally model-like or broadly effective character.

Although the CM contributed to the capacity development of the distribution company OSSH (see Effectiveness/Sustainability), the challenges in the electricity distribution sector persist (see Effectiveness – Contribution to achieving targets).

Contribution to (unintended) overarching developmental changes

No unintended positive or negative development policy changes can be identified. There were only temporary minor effects at outcome level (see Effectiveness – Unintended effects).

Summary of the rating:

It can be assumed that the quantitatively and qualitatively improved electricity supply (outcome) contributes to the sustainable development of southern Albania (impact). Although the intended direct contribution to reducing CO_2 emissions through the reduced power transmission losses has not been achieved, the project also makes an indirect contribution that is more significant in terms of quantity through the (future) connection of new generation capacities from renewable sources of energy. In addition to the reduction in CO_2 emissions, the fact that there is a lot of potential for harnessing wind energy in southern Albania should provide further impetus for the economic development of the region. In summary, the developmental impact of the project is therefore evaluated as successful.

Impact: 2

Sustainability

Capacities of participants and stakeholders

OST is responsible for the design of the transmission network and continues to make investments in the transmission network on the basis of a master plan, which evaluates and checks the condition of the existing transmission network (see Relevance – Alignment with the needs and capacities of the parties involved and those affected). Based on the load forecasts over three periods of 5, 10 and 15 years, it proposes how to strengthen, expand and restructure the existing network in order to meet the expected transmission network requirements by 2032. The focus area is refurbishing substations as well as 110 kV and 220 kV lines to increase transmission

capacity across the country in order to in turn improve grid reliability, meet N-1 power supply safety criteria (n-1 criterion ENTSO-E) and reduce grid losses.

The project-executing agency is well-positioned in terms of staff and organisation. The exact budget for operation and maintenance work in connection with the project for the following years was still defined by OST at the time of the EPE and cannot be assessed for this reason.

OST's self-conception and image are characterised by motivation and ownership. The training level of the employees is high. Given the extensive experience gained, OST is able to respond adequately to technical problems.

Transfer fees have increased in recent years, but remain at a level that does not fully cover costs (see Efficiency – Allocation efficiency). There is a risk that this will continue with a corresponding impact on the income situation of OST. As the Albanian budget continues to provide financial support to state-owned companies in the electricity sector, sufficient financial resilience can still be assumed.

Contribution to supporting sustainable capacities

Training and further education measures of OST were not planned as part of the project, as OST has sufficiently qualified employees. However, OST was supported by the implementation consultant in the technical design and provision of services for the project, and trained by the suppliers of the most important components in how to use the technology that was foreseen for the project.

The complementary measure focused in particular on advising on the technical capacities and management of the utility company OSSH. The project strengthened the OSSH's management and control functions as well as its institutional capacities. The use of consulting has contributed to sustainable capacity development in this respect. The management's clear commitment to implementing all proposed measures, including those still in the implementation process, demonstrates the high importance of the consulting services provided for OSSH and contributes to the sustainable improvement of capacities.

Durability of impacts over time

During the on-site visit as part of the EPE, the systems and installed project components were found to be in good condition. Both the quality of the construction and the equipment as well as the operation and maintenance were generally acceptable. The on-site visit revealed that service provision was of good quality and according to the specifications that had been outlined. Most of the project’s components are low maintenance, meaning that maintenance costs are also low, especially for the first few years of operation. An operating and maintenance concept as well as the corresponding budget of OST are still urgently required in order to ensure that the results are long lasting.

Currently, the capacities created cover the transmission requirements and the forward-looking design of the power towers in the section from Babice to Sarande opens up the possibility of running a second power circuit in order to be able to meet higher requirements with an increase in transmission capacity in the future. However, in view of the probable scenario of increasing electricity demand, but also with regard to the future integration of newly built renewable energies, it will be necessary to review the need for further investments in the transmission line capacities and, if necessary, to renovate/improve the remaining old 110 kV lines of the south ring as well as the outdated distribution infrastructure in the region in accordance with the latest applicable standards in order to secure the positive effects of the project with regard to improving the quality and security of electricity supply in the southern region in the long term. In this context, a clear division of responsibilities as well as handover of the Orikum and Himare substations to OSSH is also important in order to implement an appropriate operating and maintenance concept. Since smooth operation is in the interest of the state, EPE assumes that the services will continue to be provided by OST until handover.

Summary of the rating:

Both the quality of the construction and equipment as well as the operation and maintenance were acceptable. The transmission capacities created will meet demand and the forward-looking design of the power towers will also be able to meet higher demands with an increase in transmission capacity. Due to the executing agency’s expertise, sustainable operation and sustainable effects of the project are to be expected. Sustainability is made less probable by the fact that the O&M concept, including budget, is still outstanding on the part of OST. The

same applies to the Orikum and Himare substations that have not yet been handed over. Overall, the project's sustainability is evaluated as successful.

Sustainability: 2

Overall rating: 2

The BMZ projects are evaluated jointly. Because both BMZ numbers (two tranches) are designed identically (joint PA), their measures and results cannot be assigned to individual tranches and their effects cannot be distinguished from each other.

The OECD DAC criteria (relevance, coherence, effectiveness, efficiency, impact and sustainability) are evaluated as successful as part of the ex post evaluation: The project tackled a significant bottleneck with a suitable design that was integrated into the policies and priorities of both the Albanian government and the German government, and which complemented Albania's own efforts as well as the DC instruments' involvement. There were no sensible and cost-efficient alternatives to implementing the project; it was implemented with reasonable specific costs. The overarching developmental impacts in the form of strengthening sustainable development in southern Albania through improved electricity supply as well as the direct and indirect avoidance of CO_2 emissions through the previous and future connection of renewable energy capacities to the electricity grid and their sustainability are also considered to be successful.

The relevance of the project and the achievement of the intended overarching developmental impacts were the main factors in the project being evaluated as successful. Even though the project is lacking in some areas, it meets expectations overall and can therefore be evaluated as successful.

Contributions to the 2030 Agenda

The global community has agreed on the Sustainable Development Goals (SDGs) of Agenda 2030 and the implementation of the Paris Agreement. The aim of the Paris Agreement is to limit global warming to well below 2°C compared to the pre-industrial era and, if possible, below 1.5°C. As a result of fewer generation losses and due to the possible (future) connection of (newly constructed) generation capacities, the project helps avoid the production of CO_2 emissions and contributes to achieving SDGs 13 (Climate action) and 7 (Affordable and clean energy), as the integration and dissemination of renewable energy has a direct impact on access to affordable, reliable, sustainable and modern energy as well as on the general fight against climate change and its effects. Furthermore, the improved transmission infrastructure is important for tourism development in southern Albania and therefore also contributes to environmentally sustainable economic development (SDG 8 Decent work and economic growth). With regard to the increasing importance of a diversified electricity generation matrix due to climate change, the project also helps build the resilience of the energy infrastructure, in particular due to the fact that the complementarity of wind power to hydro power makes it possible to connect further generation capacities from wind power (SDG 9 Industry, innovation and infrastructure).

Project-specific strengths and weaknesses as well as cross-project conclusions and lessons learned

The project had the following strengths and weaknesses in particular:

- Closing the power transfer ring significantly improved the quality and quantity of electricity supply in southern Albania and created redundancy. The ENTSO-E's N-1 criterion was thereby fulfilled, and OST has since become a member of ENTSO-E.

- The forward-looking design of the power towers in the section from Babice to Sarande opens up the possibility of running a second power circuit in order to be able to meet higher demands in the future by increasing the transmission capacity (see Efficiency – Allocation efficiency). The design set a first milestone for the gradual expansion and grid connection of future renewable energy plants in southern Albania.

- The process of privatisation and re-nationalisation of the distribution network company made it necessary to change the construction lots and led to delays and additional costs for the implementation consultant (see Efficiency – Production Efficiency). The two substations in Orikum and Himare have also not yet been valued.

Conclusions and lessons learned:

- The closure of parts of the electricity grid/ring that are essential for redundancy has the potential for particularly high impacts (see Overarching developmental impacts – Contribution to overarching (intended) developmental changes).

- A predictive design of the components of the power transmission system is particularly efficient in the event of foreseeable increases in demand as well as the expansion and connection of renewable energies.

- Insofar as components that build on each other, such as substations to be connected to the transmission structure and associated grid connections, are the responsibility of different operators, a clear concept for implementation, handover and operation is required as early as possible in the planning phase (see Effectiveness – Contribution to achieving targets).

Evaluation approach and methods

Methodology of the ex post evaluation

The ex post evaluation follows the methodology of a rapid appraisal, which is a data-supported qualitative contribution analysis and constitutes an expert judgement. This approach ascribes impacts to the project through plausibility considerations which are based on a careful analysis of documents, data, facts and impressions. This also includes – when possible – the use of digital data sources and the use of modern technologies (e.g. satellite data, online surveys, geocoding). The reasons for any contradicting information are investigated and attempts are made to clarify such issues and base the evaluation on statements that can be confirmed by several sources of information wherever possible (triangulation).

Documents:

Internal project documents (in particular module proposal, consulting reports and final inspection report), strategy papers, sector analyses, comparable evaluations, media reports.

Data sources and analysis tools:

Data collection on site, monitoring data from the project-executing agency, GPS data, satellite images, measurement data on the utilisation of the power lines, provided by the operator/distribution company.

Interview partners:

Discussions with the project executing agency and the BM beneficiary, Ministry of Energy, implementation consultant, hotel employees in Sarande and Korce.

The analysis of impacts is based on assumed causal relationships, documented in the results matrix developed during the project appraisal and, if necessary, updated during the ex post evaluation. The evaluation report sets out arguments as to why the influencing factors in question were identified for the experienced effects and why the project under investigation was likely to make the contribution that it did (contribution analysis). The context of the development measure and its influence on results is taken into account. The conclusions are reported in relation to the availability and quality of the data. An evaluation concept is the frame of reference for the evaluation.

On average, the methods offer a balanced cost-benefit ratio for project evaluations that maintains a balance between the knowledge gained and the evaluation costs, and allows an assessment of the effectiveness of FC projects across all project evaluations. The individual ex post evaluation therefore does not meet the requirements of a scientific assessment in line with a clear causal analysis.

The following aspects limit the evaluation:

None

Methods used to evaluate project success

A six-point scale is used to evaluate the project according to OECD DAC criteria. The scale is as follows:

Level 1 very successful: result that clearly exceeds expectations

Level 2 successful: fully in line with expectations and without any significant shortcomings

Level 3 moderately successful: project falls short of expectations but the positive results dominate

Level 4 moderately unsuccessful: significantly below expectations, with negative results dominating despite discernible positive results

Level 5 unsuccessful: despite some positive partial results, the negative results clearly dominate

Level 6 highly unsuccessful: the project has no impact or the situation has actually deteriorated

The overall rating on the six-point scale is compiled from a weighting of all six 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 (“impact”) and the sustainability are rated at least “moderately successful” (level 3).

List of abbreviations:

PCR	Project completion report
GDP	Gross domestic product
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Federal Ministry for Economic Cooperation and Development)
DAC	Development Assistance Committee
EPE	Ex post evaluation
ERE	Ent Rregullator i Energjisë (Regulatory Authority)
EUR	Euro
FC	Financial cooperation
FC E	FC Evaluation
HDI	Human Development Index
KESH	Korporata Elektroenergjitike Shqiptare (state-owned electricity generation company)
MP	Module proposal
OSHEE	Operatori i Shpërndarjes së Energjisë Elektrike Sh.A (state-owned electricity distribution company)
OST	Operatori i Sistemit të Transmetimit Sh.a. (state power transmission company)
PIU	Project Implementation Unit
PA	Project appraisal
TC	Technical cooperation
USD	US Dollar

Publication details

Contact:
FC E
Evaluation department of KfW Development Bank
FZ-Evaluierung@kfw.de

KfW Group
Palmengartenstrasse 5–9
60325 Frankfurt am Main, Germany

List of annexes:

Target system and indicators annex

Risk analysis annex

Project measures and results annex

Recommendations for operation annex

Evaluation questions in line with OECD DAC criteria/ex post evaluation matrix annex

Target system and indicators annex

Project objective at outcome level		Rating of appropriateness (former and current view)			
During project appraisal: The objectives of the project are to improve the quantitative and qualitative electricity supply in southern Albania and to reduce greenhouse gas emissions as well as local environmental damage.		The project purpose at outcome level is to be assessed as appropriate from the point of view at the time and today. From today's perspective, the reduction of greenhouse gas emissions has been the greater impact (contribution to environmental/climate protection). The main objective of transmission projects at outcome level is to secure the power supply infrastructure and to integrate renewable energies. The energy efficiency gains from the rehabilitation of transmission lines are justified as a secondary objective. Reformulation according to the state of the art.			
At EPE (if target is modified), contribution to an efficient, reliable and long-term secured electricity supply.					
Indicator	**Rating of appropriateness** (for example, regarding impact level, accuracy of fit, target level, smart criteria)	**PA target level** **Optional: EPE target level**	**PA status (2007)**	**Status at final inspection (2020)**	**Optional: Status at EPE (2022)**
Indicator 1 (PA) Annual availability of new power transmission and substation capacity created in southern Albania	The indicator and target level are appropriate. (Comparison of target level with other transfer projects). Only formulation adjustment according to state of the art. The focus was on the availability of the transmission lines. The SAIDI (average duration of power outages) and SAIFI (power outages) indices, which provide an assessment of the quality of the electricity supply, were not included because a significant reason for the power outages also lies in the distribution grid and is measured there, and the project has little influence on this.	≥98%	0	98.3% (the 130 MW transmission capacity created by the Babice – Sarande – Zemblak loop)	97.5% (2021 and 2022) (the 130 MW transmission capacity created by the Babice – Sarande – Zemblak loop)
Indicator 2 (PA) Deviation from 110 kV standard value to improve voltage profile	The indicator and target level are appropriate. Only formulation adjustment according to state of the art. A maximum deviation of 5% corresponds to the EU standard (grid code ENTSO-E). The value was calculated as an average of 15 measuring points.	5%	21%	0.4%	2.3% (2021) and 2.2% (2022)

NEW: Indicator 3 Power transmission losses	The indicator and target level for power transmission losses are appropriate. (Comparison of target level with other transmission projects)	2%	8%	2.3%	2.13% (2021)

Project objective at impact level	**Rating of appropriateness (former and current view)**
During project appraisal: Improved electricity supply is strengthening sustainable development in southern Albania and is making a positive contribution to climate change mitigation.	Appropriate, only clarification of the formulation. During the appraisal, it was assumed that the contribution of the FC module to the overarching development policy objective at impact level is regarded as achieved if the objective of the FC module is achieved at outcome level, i.e. no indicators were defined at impact level. This automatic achievement of the target at impact level is critical. In the final inspection, the targets at impact level were considered to have been demonstrably achieved by Albania's economic growth rates in recent years, as well as through the reduction in CO2 emissions achieved. However, the reference to the economic growth rates in Albania is very general and depends on a wide range of influencing factors, making it therefore rather unsuitable for measuring the direct contribution of the FC module. The evidence of the positive contribution to climate change mitigation through the reduced CO_2 emissions at outcome level is verifiable and assessed as appropriate. The indicator is moved from the outcome (PA) to the impact level (EPE). At impact level, the FC module contributes to both programme objective indicators of the DC programme (1. Sum of the CO2 savings achieved by the modules as part of the DC programme and 2. Sustainable economic and social development). DC programme objective: Households and businesses are supplied with electricity reliably and cost-effectively. Increasing energy efficiency on the supply and demand side makes a positive contribution to global climate change mitigation.
Sustainable development in southern Albania is strengthened and a positive contribution to climate change mitigation is made through a quantitatively and qualitatively improved electricity supply	

Indicator	**Rating of appropriateness** (for example, regarding impact level, accuracy of fit, target level, smart criteria)	**Target level PA / EPE (new)** [1)]	**PA status (2007)**	**Status at final inspection (2020)**	**Status EPE (2022)** [2)]
NEW: Indicator 1 Savings in CO_2 emissions (t/year)	Original indicator moved from outcome level to impact level "Reduction of CO_2 emissions by up to 10,000 t CO_2 per year by reducing power transmission losses from around 8% to 2%" moved from outcome to impact and the formulation adapted in accordance with state of the art.	10,000 t p.a.	0	10,000 t p.a.	2,500 t CO2/a

	The calculation of CO2 reductions is based on the assumption that all losses were covered by electricity imports. The calculation basis for the emission factor for 2007 refers to electricity imports from Kosovo. The calculation basis for the emission factor at the time of the EPE is based on the assumption that electricity imports for 2022 will take place via the grid connection point with Greece in Zemblak.				

[1)] CO_2 coefficient: 0.400 t CO_2/MWh (calculation at appraisal)

[2)] CO_2 coefficient: 0.346 t CO_2/MWh (Combined Margin Greece: Calculation based on “Harmonized_IFI_Default_Grid_Factors_2021_v3.2_0”)

Risk analysis annex

There is a risk that the **transfer fees** will remain at a level that does not fully cover costs and that the executing agency's financial situation will therefore only improve slightly. The executing agency's revenue structure is essentially dependent on the decisions of the regulatory authority (see Efficiency – Allocation efficiency).

Responsibilities are shared between OST and OSHEE in each of the rehabilitated and new switchboard plants. The power transmission company OST is only responsible for the high-voltage panels on the 110 kV side and the associated protection, control and telecommunications equipment. The medium voltage switching panels are assigned to the distribution company OSHEE. In the old switchboard plants in particular, old medium-voltage fields are connected to a very **poor distribution grid system, some of which is over 50 years old.** The maintenance groups at the distribution network level are in great need of rehabilitation and are not professionally repaired due to a lack of spare parts, which means there is an increased risk of malfunctions or failure (see Effectiveness – Contribution to achieving targets).

The substations in Orikum and Himare were built by OST on behalf of the distribution system operator OSSH, which was undergoing a privatisation/renationalisation process at the time of project planning. The substations are to be transferred to the now state-owned company OSSH. The connection on the 20 kV distribution side is the responsibility of OSSH and has not yet been carried out. There is a risk that the **capacities created by the 20 kV systems will not be used** (see Effectiveness – Contribution to achieving targets).

All risks should be included in the following table as described above:

Risk	Relevant OECD-DAC criterion
Risk that transfer fees will remain at a level that does not fully cover costs (ex-ante)	Efficiency, sustainability
Interference with operations due to a poor distribution network system (ex-ante)	Effectiveness, sustainability
Risk of unused assets (ex post)	Effectiveness

Project measures and their results annex

As part of the project, the gaps in the existing 110 kV line network in southern Albania were closed, the associated substations were built or rehabilitated, and the electricity distribution networks in Orikum and Himare were connected. The connection was made to the 35/10/6 kV level, but not to the intended 20 kV level. The 20 kV switchboard plant was financed with the project. It is currently not in use, as the connection to the 20 kV level has not yet been implemented by OSSH.

The project comprised **three components** with several investment measures:

Component 1: Transmission component in south-west Albania

> **Construction** of a **105-kilometre 110 kV transmission line** between Babice (Vlora) and Sarande as well as expansion work in the associated switchboard plants.

Component 2: Transmission component in south-eastern Albania:

> **Building and rehabilitation** of **143-kilometres** of **110 kV transmission lines** in the sections: Zemblak - Korce - Ereske - Permet - Kelcyre - Memaliaj, as well as rehabilitation and expansion work in the associated switchboard plants.

Component 3: Building of 110/35/20 kV substations and connection to existing power distribution network in Orikum and Himare

> The construction work included 110 kV open-air high voltage equipment, 110/35/20 kV power transformers, 35 kV and 20 kV SF6 insulated cabinets, connections between the 35 kV panels and existing 35 kV overhead lines, auxiliary equipment, power and control cables, associated protection and control equipment, telecommunications equipment, earthing and lightning protection equipment, small power and lighting equipment, air conditioning, etc.

No shortcomings were identified with regard to the proper implementation and quality of the project components.

Recommendations for operation annex

An analysis of the implementation of the recommendations made in the final inspection showed that they have already been implemented by a majority. The implementation of two open points regarding occupational safety measures is still pending. These include the installation of eyewash facilities in transformer stations with battery rooms and the affixing of warning signs to indicate the risk of tripping due to non-retractable handles for cable cover ducts.

Relevance

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension: Policy and priority focus			2	0	
Are the objectives of the programme aligned with the (global, regional and country-specific) policies and priorities, in particular those of the (development policy) partners involved and affected and the BMZ?	• What importance is given to the project by the Albanian Ministry of Energy/OST or does the project have with regard to the implementation of the national development strategy (2007-2013) and the energy strategy (2008-2010) as well as the process for integration into the European interconnected grid? • Does the programme contribute to compliance with the requirements of the acquis communautaire for a single European electricity market? • Was the need for adjustment to climate change seen as an accelerating factor for the project decision? • What are the future plans for the development of the energy sector in Albania (share of RE, electricity imports, expansion of network infrastructure)?	• Interview with Ministry of Energy and OST • National Development Strategy 2007-2013			
Do the objectives of the programme take into account the relevant political and institutional framework conditions (e.g. legislation, administrative capacity, actual power structures (including those related to ethnicity, gender, etc.))?	• How did the restructuring process of the electricity sector (particularly in the unbundling of generation, transmission and distribution functions) affect the implementation of the project or O&M? (KESH/OST/OSHEE interface) • How is the CM's contribution to achieving the module's objectives assessed? • Was there a prioritisation of investments in the transmission network area as opposed to the distribution network area? • What are the technical reference values for the indicators according to Alb. specifications? • How has the executing agency's financial situation developed (e.g. amount of non-cost-covering tariffs)?	• Executing agency information, interview with OSHEE • PCR			

Evaluation dimension: Focus on needs and capacities of participants and stakeholders			2	0	
Are the programme objectives focused on the developmental needs and capacities of the target group? Was the core problem identified correctly?	• How should the quality of the electricity supply be assessed before closing the circular distribution main? • How have system losses (technical/non-technical) developed since 2007? • Is the core problem still transmission or is it production and distribution that are heavily dependent on hydropower plants? • Is there any information about economic damage caused by the poor electricity supply at the time/today?	Information from the project-executing agency Synthesis of EPE, Interview with Ministry of Energy			
Were the needs and capacities of particularly disadvantaged or vulnerable parts of the target group taken into account (possible differentiation according to age, income, gender, ethnicity, etc.)? How was the target group selected?		Not relevant, as the project is not related to the target group.			
Would the programme (from an ex post perspective) have had other significant gender impact potentials if the concept had been designed differently? (FC-E specific question)		Not relevant, as the project is not related to the target group.			
Evaluation dimension: Appropriateness of design			2	0	
Was the design of the programme appropriate and realistic (technically, organisationally and financially) and in principle suitable for contributing to solving the core problem?	• Were the right executing agency and the right measures for solving the core problem identified? • What alternatives were considered? (different routing?) • Which criteria were selected for the dimensioning of the line? • What is the current load flow and utilisation? • Interpretation: Are the capacities still sufficient? How has power consumption increased? • CM: What were the perceptions of the cooperation with OSHEE? Did the management/employees encounter resistance to the	Information on executing agency and OSHEE, synthesis EPE, PV			

	new methods/investment concepts and how should the staff consistency be assessed? • How has the electricity sector developed since the project appraisal (generation, transmission, distribution, losses (technical, non-technical), collection rates, energy balance, etc.)? • Was the need for the CM foreseeable at PA and should this have been taken into account in the concept from the outset?	
Is the programme design sufficiently precise and plausible (transparency and verifiability of the target system and the underlying impact assumptions)?		PP
Please describe the theory of change, incl. complementary measures, if necessary in the form of a graphical representation. Is this plausible? As well as specifying the original and, if necessary, adjusted target system, taking into account the impact levels (outcome and impact). The (adjusted) target system can also be displayed graphically. (FC-E specific question)		PP
To what extent is the design of the programme based on a holistic approach to sustainable development (interplay of the social, environmental and economic dimensions of sustainability)?	• Will the project replace electricity from local diesel generators with renewable electricity from the grid? • What is the increase in power consumption over time? • Would additional local diesel generators be operated without the project? • How has the project region in southern Albania developed since the project appraisal? (Population, economic situation, industries, tourism, etc.) • Were there any special U&S risks associated with the project or were these taken into account?	Information from the project-executing agency, PP, PCR
For projects within the scope of DC programmes: is the	• Does the programme contribute to achieving the programme objectives?	Programme reporting 2020-2023

programme, based on its design, suitable for achieving the objectives of the DC programme? To what extent is the impact level of the FC module meaningfully linked to the DC programme (e.g. outcome impact or output outcome)? (FC-E specific question)					
Evaluation dimension: Response to changes/adaptability			2	0	
Has the programme been adapted in the course of its implementation due to changed framework conditions (risks and potential)?	• Were there any changes to the routing, e.g. due to land use rights, national parks? • What are the reasons for the removal of the measures in Orikum and Himare at the start of the project by the project-executing agency (separation of lot 3)? • What are the effects of the delay? (costs of implementation consultant, etc.)	PV, project executing agency information; final inspection			

Coherence

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension: Internal coherence (division of tasks and synergies within German development cooperation):			2	0	
To what extent is the programme designed in a complementary and collaborative manner within the German development cooperation (e.g. integration into DC programme, country/sector strategy)?	• Which complementary FC/TC measures were implemented in the energy sector?	Programme reporting 2020-2023			

Do the instruments of the German development cooperation dovetail in a conceptually meaningful way, and are synergies put to use?	• Sector reform programme, RE generation, transfer and distribution are taken into account. • What is the TC contribution?	Programme reporting 2020-2023			
Is the programme consistent with international norms and standards to which the German development cooperation is committed (e.g. human rights, Paris Climate Agreement, etc.)?	• What are the plans for the energy mix in the future, expansion of non-conventional renewable energies? Development of electricity imports? Where does the imported electricity come from? • Acquis communautaire, Grid Code ENTSO-E • Is distributed generation seen as an alternative to investments in network infrastructure? - Revised NDC Report 12/10/2021 – Mitigation Actions for the Energy Sector 2018–2030: Reduction of transmission and distribution losses by promoting distributed generation.	Interview with the Ministry of Energy, information on the project-executing agency			
Evaluation dimension: External coherence (complementarity and coordination with actors external to German DC):			2	0	
To what extent does the programme complement and support the partner's own efforts (subsidiarity principle)?	• Counterpart contribution	Information from the project-executing agency			
Is the design of the programme and its implementation coordinated with the activities of other donors?	• How closely did the programme cooperate with other donors such as the World Bank, etc.? • For which components were there overlaps with measures taken by other donors? • What does donor coordination in the sector look like? • What activities are/were carried out by other donors in the Albanian energy sector and are they complementary?	Programme reporting, project-executing agency information			
Was the programme designed to use the existing systems and structures (of partners/other donors/international organisations) for the implementation of its activities and to what extent are these used?	• Is there a central vehicle for the coordination and implementation of projects in the energy sector (master plan or similar)? • Was there a PIU with the executing agency?	Information from the project-executing agency			

Are common systems (of partners/other donors/international organisations) used for monitoring/evaluation, learning and accountability?	• Question to the operational department and OST as to the extent to which there is a common system. • How is sector planning/follow-up done at country level?	Information from the project-executing agency

Effectiveness

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension: Achievement of (intended) targets			2	0	
Were the (if necessary, adjusted) objectives of the programme (incl. capacity development measures) achieved? Table of indicators: Comparison of actual/target	--	EPE synthesis			
Evaluation dimension: Contribution to achieving targets:			2	0	
To what extent were the outputs of the programme delivered as planned (or adapted to new developments)? *(Learning/help question)*	• From OST's point of view, were the outputs implemented as planned and desired? • What were the reasons for the release and resumption of lot 3, which led to delayed implementation? • Were all planned measures implemented (incl. connection to local distribution networks in Orikum and Himare)?	Project executing agency information, synthesis EPE			
Are the outputs provided and the capacities created used?	• How much have the lines been used? • Current flow before and after end of circular distribution main? • Are all outputs in operation and used? • How have key data/indicators developed?	Project executing agency information, synthesis EPE			

To what extent is equal access to the outputs provided and the capacities created guaranteed (e.g. non-discriminatory, physically accessible, financially affordable, qualitatively, socially and culturally acceptable)?	• Do all have equal access to the grid, or were there any restrictions/improvements/benefits for grid users (distribution companies, consumers directly connected to the transmission grid and transit electricity customers)	Project executing agency information, synthesis EPE
To what extent did the programme contribute to achieving the objectives?		Final inspection, executing agency information, synthesis EPE
To what extent did the programme contribute to achieving the objectives at the level of the intended beneficiaries?	• Are there still bottlenecks in the southern Albanian transmission network? • How should the quality of the electricity supply be assessed after the closure of the circular distribution main?	Information from the project-executing agency EPE synthesis
Did the programme contribute to the achievement of objectives at the level of the particularly disadvantaged or vulnerable groups involved and affected (potential differentiation according to age, income, gender, ethnicity, etc.)?		Not directly relevant, as the project is not related to the target group.
Were there measures that specifically addressed gender impact potential (e.g. through the involvement of women in project committees, water committees, use of social workers for women, etc.)? (FC-E specific question)		Not directly relevant, as the project is not related to the target group.
Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the intended objectives of the programme? *(Learning/help question)*	• How was the solution to lot 3 found? • What if lot 3 had not been built? Could the objectives have been achieved anyway? • Did PIU coordination with OSSH work?	Final reporting, report Int. Consultant

Which external factors were decisive for the achievement or non-achievement of the intended objectives of the programme (also taking into account the risks anticipated beforehand)? *(Learning/help question)*	• Which external factors were relevant? Land use, energy sector crisis (influence on speed of project implementation, capacities OST)? • Precipitation development, hydrology, could the targets have been achieved in another year of drought?	Project executing agency information, synthesis EPE			
Evaluation dimension: Quality of implementation			2	0	
How is the quality of the management and implementation of the programme to be evaluated with regard to the achievement of objectives?	• How satisfied is OST with the preparation of the tender, implementation support by the consultant? • Was the lot division clear? • How is the structural quality to be assessed?	Information from the project-executing agency, final inspection			
How is the quality of the management, implementation and participation in the programme by the partners/sponsors evaluated?	• How was the participation of OST/PIU perceived?	Information from the project-executing agency, final inspection			
Were gender results and relevant risks in/through the project (gender-based violence, e.g. in the context of infrastructure or empowerment projects) regularly monitored or otherwise taken into account during implementation? Have corresponding measures (e.g. as part of a CM) been implemented in a timely manner? (FC-E specific question)		Not directly relevant, as the project is not related to the target group.			
Evaluation dimension: Unintended consequences (positive or negative)			2	0	
Can unintended positive/negative direct impacts (social, economic,	• How was the project received by the local population? Were there complaints?	Project executing agency information, synthesis EPE			

ecological and, where applicable, those affecting vulnerable groups) be seen (or are they foreseeable)?	• Did the project have unintended positive or negative effects?	
What potential/risks arise from the positive/negative unintended effects and how should they be evaluated?		
How did the programme respond to the potential/risks of the positive/negative unintended effects?		

Efficiency

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension: Production efficiency			2	0	
How are the inputs (financial and material resources) of the programme distributed (e.g. by instruments, sectors, sub-measures, also taking into account the cost contributions of the partners/executing agency/other participants and affected parties, etc.)? (Learning and help question)		PCR			
To what extent were the inputs of the programme used sparingly in relation to the outputs produced (products, capital goods and services) (if possible in a comparison with data from other evaluations of	• Competition in the tender ensures that the funds are used economically? How many bidders were there? • Was the lot division clear? • Would more bidders have been expected in the tender? • Question for OST: Specific costs for transformer stations, transmission lines per km, etc. on other projects in other regions in Albania	Project executing agency information, synthesis EPE			

a region, sector, etc.)? For example, comparison of specific costs.	• Comparison of the services provided and comparison with other projects. • How should the costs of the implementation consultant be evaluated?				
If necessary, as a complementary perspective: To what extent could the outputs of the programme have been increased by an alternative use of inputs (if possible, in a comparison with data from other evaluations of a region, sector, etc.)?	• Were alternatives considered (routing)? • Local RE projects expedient instead of transmission line? (How is utilisation actually, how has electricity demand increased? Load flow?)	Information from the project-executing agency			
Were the outputs produced on time and within the planned period?	• Why were there delays in tendering the lots? • Why was lot 3 removed from the original design? Were feared cost increases (PP 3.30) the reason for this? • Cost increase due to delays?	Final inspection, Information from the project-executing agency			
Were the coordination and management costs reasonable (e.g. implementation consultant's cost component)? (FC-E specific question)	• How can the effects of the time delays on the costs be seen (division into 3 lots).	EPE synthesis			
Evaluation dimension: Allocation efficiency			2	0	
In what other ways and at what costs could the effects achieved (outcome/impact) have been attained? *(Learning/help question)*		EPE synthesis			
To what extent could the effects achieved have been attained in a more cost-effective manner, compared with an alternatively designed programme?	• What alternatives have been observed?	PP, Information from the project-executing agency			

If necessary, as a complementary perspective: To what extent could the positive effects have been increased with the resources available, compared to an alternatively designed programme?	• See question on alternative measures.	EPE synthesis

Overarching developmental impact

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension: Overarching developmental changes (intended)			2	0	
Is it possible to identify overarching developmental changes to which the programme should contribute? (Or if foreseeable, please be as specific as possible in terms of time.)		Information on project-executing agency, synthesis EPE, reporting 2020-2023			
Is it possible to identify overarching developmental changes (social, economic, environmental and their interactions) at the level of the intended beneficiaries? (Or if foreseeable, please be as specific as possible in terms of time)	• Have environmental and social studies been carried out? • Are there any negative environmental effects in the nature reserve (Logara Pass)? • Alternative measures? • How were the land use rights acquired? • What is the impact on the quality of life of households? Have the measures made the electricity supply more stable? • Can positive environmental effects be proven by switching off diesel generators? • Can positive economic effects be identified, e.g. by stimulating the region/tourism, increasing productivity?	Project-executing agency information, progress reports of the implementation consultant, synthesis of EPE, reporting 2020-20230			
To what extent can overarching developmental changes be identified at the level of particularly disadvantaged or vulnerable parts of the		Not relevant, as the project is not related to the target group.			

target group to which the programme should contribute? (Or, if foreseeable, please be as specific as possible in terms of time)					
Evaluation dimension: Contribution to overarching developmental changes (intended)			2	–	–
To what extent did the programme actually contribute to the identified or foreseeable overarching developmental changes (also taking into account the political stability) to which the programme should contribute?	• Have there been changes in priorities in the energy sector due to changes in government?	Interview with the Ministry of Energy, information on the project-executing agency			
To what extent did the programme achieve its intended (possibly adjusted) developmental objectives? In other words, are the project impacts sufficiently tangible not only at outcome level, but at impact level? (e.g. drinking water supply/health effects)		EPE synthesis			
Did the programme contribute to achieving its (possibly adjusted) developmental objectives at the level of the intended beneficiaries?	See above.				
Has the programme contributed to overarching developmental changes or changes in life situations at the level of particularly disadvantaged or vulnerable parts of the target group (potential differentiation according to age, income,		Not relevant, as the project is not related to the target group.			

gender, ethnicity, etc.) which the programme was intended to help?					
Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the intended developmental objectives of the programme? *(Learning/help question)*					
Which external factors were decisive for the achievement or non-achievement of the intended developmental objectives of the programme? *(Learning/help question)*					
Does the project have a broad-based impact? - To what extent has the programme led to structural or institutional changes (e.g.in organisations, systems and regulations)? (Structure formation) - Was the programme exemplary and/or broadly effective and is it reproducible? (Model character)	• Question to OST/OSHEE • CM Development of measures and influence on structural changes/OSHEE organisation	Project executing agency information, synthesis EPE			
How would the development have gone without the programme? (Learning and help question)	• Question for OST • Shutdowns of 4-12 hours would increase further due to growing electricity demand, diesel generators would be switched on and sustainable development would be slowed down.	Project executing agency information, synthesis EPE			
Evaluation dimension: Contribution to (unintended) overarching developmental changes			–	0	

To what extent can unintended overarching developmental changes (also taking into account political stability) be identified (or, if foreseeable, please be as specific as possible in terms of time)?		
Did the programme noticeably or foreseeably contribute to unintended (positive and/or negative) overarching developmental impact?	See above.	
Did the programme noticeably (or foreseeably) contribute to unintended (positive or negative) overarching developmental changes at the level of particularly disadvantaged or vulnerable groups (within or outside the target group) (do no harm, e.g. no strengthening of inequality (gender/ethnicity))?	See above.	

Sustainability

Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Rationale for weighting
Evaluation dimension: Capacities of participants and stakeholders			2	0	
Are the target group, executing agencies and partners able and willing (ownership) to maintain the positive effects of the programme over time (after the end of the promotion) on an institutional, personnel and financial level?	• How is the O&M budget of OST to be assessed? • How is the qualification of the O&M staff to be assessed? • What are the planned investments in transmission and distribution lines, and where are these investments made geographically?	Project executing agency information, synthesis EPE			

	• Economic growth and increase in electricity demand – are further/other measures necessary for ensuring that the programme continues to have positive effects?				
To what extent do the target group, executing agencies and partners demonstrate resilience to future risks that could jeopardise the impact of the programme?	• Contribution to resilience, n-1 criterion ENTSO-E? • Is the budget for maintenance secured? • Politically influenced decisions of the regulator ERE (tariffs, etc.)? • Depending on the development of demand, possible overloading of lines?	Annual Report ERE 2020, Synthesis EPE			
Evaluation dimension: Contribution to supporting sustainable capacities:			2	0	
Did the programme contribute to the target group, executing agencies and partners being institutionally, personally and financially able and willing (ownership) to maintain the positive effects of the programme over time and, where necessary, to curb negative effects?	• Ownership OST/OSHEE • Organisational structure of OSHEE	Information on project-executing agency and OSHEE, synthesis EPE			
Did the programme contribute to strengthening the resilience of the target group, executing agencies and partners to risks that could jeopardise the effects of the programme?	• What are the risks that jeopardise the effects of the programme? • What effect does the circular distribution main have on the resilience of the electricity supply? • Are the impacts of the CM on OSSH sustainable?	Information on project-executing agency and OSHEE, PV, synthesis EPE			
Did the programme contribute to strengthening the resilience of particularly disadvantaged groups to risks that could jeopardise the effects of the programme?		Not directly relevant, as the project is not related to the target group.			
Evaluation dimension: Durability of impacts over time			2	0	

How stable is the context of the programme (e.g. social justice, economic performance, political stability, environmental balance)? (*Learning/help question*)		
To what extent is the durability of the positive effects of the programme influenced by the context? *(Learning/help question)*		
To what extent are the positive and, where applicable, the negative effects of the programme likely to be long-lasting?	• How were the recommendations of the final inspection implemented? • What are the future investment needs? • How is the investment and maintenance behaviour of OST and OSHEE assessed?	Final inspection, project-executing agency information, synthesis EPE