

Ex-post evaluation

Rehabilitation of the Péligre hydroelectric power plant, Haiti

Title	Rehabilitation of the Péligre hydroelectric power plant		
Sector and CRS code	Hydropower plants (23220)		
Project number	2009 67 232		
Client	BMZ		
Recipient/project sponsor	Haiti Ministry of Economy and Finance / Electricité d'Haïti (EDH)		
Project volume/ Financing instrument	Approx. EUR 87 million total volume, of which EUR 28 million is a grant (FZ), EUR 28 million is a grant (Inter-American Development Bank, IDB) and EUR 31 million is a loan (OPEC Fund for International Development, OFID)		
Project duration	February 2011 – June 2022		
Reporting year	2025	Year of random sample	2025

Project objectives and implementation

The underlying objective at the outcome level was to secure Haiti's electricity supply through the Péligre hydropower plant. The objective at the impact level was to ensure that sufficient electricity was available for the country's reconstruction and sustainable economic development, to improve living conditions and to avoid climate-damaging emissions from electricity generation.

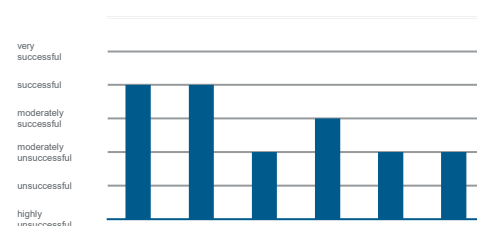
The project involved the rehabilitation of the Péligre hydropower plant with an installed capacity of 54 MW. The rehabilitation of the transmission line to Port-au-Prince, which was initially planned, was removed from the project.

Key findings

The development policy effectiveness is limited by ongoing technical problems and the sustainability of the project is seriously jeopardised. The project is assessed as "rather unsuccessful" for the following reasons:

- By rehabilitating Haiti's largest hydropower plant, the project aimed to secure electricity generation in order to avoid an even more drastic power shortage, thereby addressing a key bottleneck.
- However, the Péligre hydroelectric power plant is generating significantly less electricity than intended, as only two or fewer turbines have been in operation since 2019 due to ongoing problems with the rehabilitated turbines.
- In the context of the project, however, the rehabilitation of the Péligre hydroelectric power plant was the only option that could be implemented in the short term to secure the electricity generation volumes necessary for Haiti.
- Due to the fact that generation is falling short of what is possible, the development policy impacts in terms of ensuring a sufficient electricity supply for reconstruction and sustainable economic development, improving living conditions and avoiding climate-damaging emissions from electricity generation are significantly lower.
- Against the backdrop of ongoing problems with the power plant's turbines, the continuing weak capacity of Electricité d'Haïti (EDH) and progressive sedimentation in the reservoir, it is unlikely that the rehabilitation will achieve its intended goal of extending the operating life from 20 to 25 years, i.e. until 2038 or 2043, will be achieved.

Overall assessment: moderately unsuccessful



Conclusions

- When rehabilitating hydropower plants that depend on water from multi-purpose reservoirs, it is essential to examine scenarios during the planning stage to determine the extent to which emptying the reservoir is necessary for implementation and what risks and costs are associated with each scenario. Emptying can have significant ecological and social impacts, while not emptying can result in significantly higher implementation costs.
- It is essential for the enforcement of warranty claims that their deadlines are based on the date of commissioning and not on the date of delivery.
- In the case of weak carriers, the suspension of planned training measures should be avoided even if cost increases require new priorities to be set, as these measures, together with spare parts for weak carriers financed from project funds, are crucial for maintaining operations.

Ex-post evaluation – assessment according to OECD DAC criteria

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List of abbreviations:

PCR	Final completion report
GDP	Gross domestic product
BMZ	Federal Ministry for Economic Cooperation and Development
CRI	Cash Recovery Index
DAC	Development Assistance Committee
EDH	Electricité d'Haïti
EPE	Ex-post evaluation
EUR	Euro
FC	Financial cooperation
FC E	FC Evaluation
GWh	Gigawatt hour
HDI	Human Development Index
IDB	Inter-American Development Bank
kW	kilowatt
kWh	kilowatt hour
MTPTC	Ministry of Public Works, Transport and Communications
MW	Megawatt
OFID	OPEC Fund for International Development
PA	Project appraisal
PAR	Project appraisal report
PP	Project proposal
SDGs	Sustainable Development Goals
TC	Technical cooperation
USD	US dollar
WKW	Hydroelectric power plant

General conditions and classification of the project

The Péligre hydroelectric power station is Haiti's largest power station for generating electricity from renewable energies. The Péligre dam was built between 1953 and 1956 to control flooding and irrigation in the Artibonite River valley. The power plant, with three turbine-generator sets, was built between 1969 and 1975. With an installed capacity of 18 MW per turbine, it was Haiti's largest HPP at the time of the project appraisal (2010) and remains so today, as well as being the country's main source of electricity from renewable energy. The electricity generated is mainly used to supply the capital Port-au-Prince, 90 km away, which, as the country's economic centre, suffered from chronic power shortages. Until the project was reviewed (2010), there had been no significant technical upgrades to the hydroelectric power plant. The power plant was in a critical condition with frequent interruptions and outages. As a result of ageing, the power plant generated only around 162 GWh per year in the years prior to the project review (2010), instead of the theoretically possible 320 GWh. At the same time, the Haitian electricity sector was and still is heavily dependent on imported fossil fuels and characterised by chronic undersupply. The impending failure of the Péligre hydroelectric power plant meant that there was a risk that this dependency would increase even further.

On 12 January 2010, Haiti was rocked by a severe earthquake. It caused devastating destruction, especially in the capital Port-au-Prince, and claimed an estimated 230,000 lives. The country's infrastructure was severely damaged.

The aim of the project was to rehabilitate the Péligre hydroelectric power plant and the transmission line to Port-au-Prince. Although this was not destroyed in the earthquake, it was at risk of failure at any time due to its age. Given the importance of the Péligre hydroelectric power plant for the electricity supply, it was essential to secure the electricity supply to the capital of Haiti and the country as a whole for reconstruction after the severe earthquake. The project was co-financed with other donors. In addition to KfW, the Inter-American Development Bank (IDB) and the OPEC Fund for International Development (OFID) were also involved in the financing.

The framework conditions for implementation were already difficult during the preparation of the project and became even more challenging during the implementation phase. The security situation in the country deteriorated dramatically, making it difficult for international experts to carry out their work. This was compounded by the COVID-19 pandemic in 2020, which resulted in further travel restrictions.

The project was prepared and implemented under an emergency procedure (point 47 of the FZ/TZ guidelines) following the severe earthquake mentioned above. Even during the project review, it was clear that the implementing agency, Electricité d'Haïti (EDH), was in a weak position. During the ex-post evaluation (EPE), EDH did not respond to requests for information, meaning that the EPE is based largely on data from the final review (AK) and information from an interview and written correspondence with the IDB.

Haiti is not an official partner country of German development cooperation. There are no ongoing financial cooperation projects in Haiti.

Brief description of the project

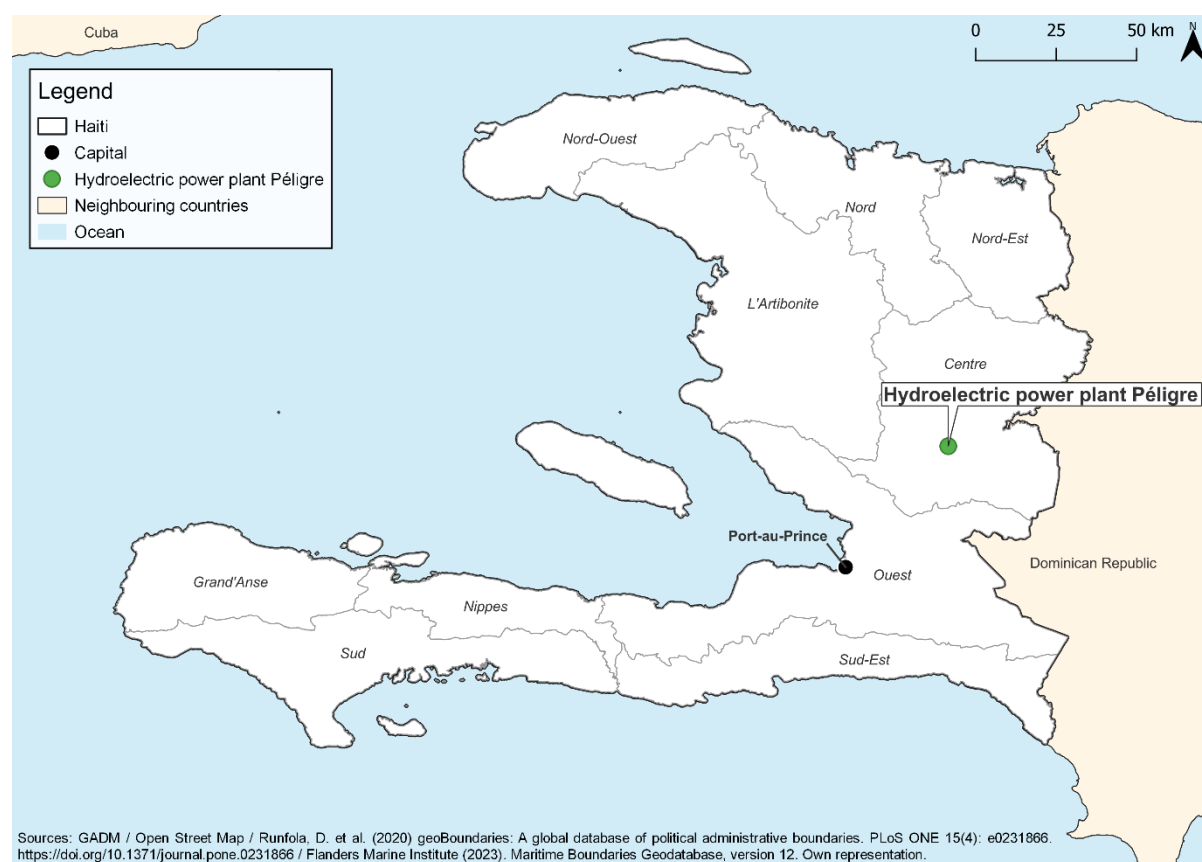
In order to secure the electricity supply necessary for reconstruction after the severe earthquake and for economic development in the country and the capital of Haiti, while avoiding climate-damaging emissions from electricity generation, the project financed the rehabilitation of the Péligre hydroelectric power plant. The measures included the rehabilitation of the three turbines, generators, transformers and switchgear, the installation of a SCADA system, the cleaning of the inlets and the repair and sealing of the inlet valves, renovation work on the radial sluices of the flood relief system, the repair and sealing of the roof of the power plant and the construction of a water-oil separation basin.

Breakdown of total costs

In EUR million	Inv. (plan)	Inv. (actual)
Total costs	35	87
Own contribution	0	0
External financing ¹	35	87 ²
<i>of which BMZ funds</i>	<i>10</i>	<i>28</i>

Map of the project country including project location

Figure 1 – Map of the project region



¹ Including co-financing from the Inter-American Development Bank (IDB) and the OPEC Fund for International Development (OFID)

² The costs for the Péligre hydroelectric power plant were broken down in US dollars as part of the project. The EPE used a EUR:USD exchange rate of 1:1.15, which is the average exchange rate over the project period (2010-2022). The actual total costs were calculated on the basis of the financial contributions of the individual donors and amounted to around USD 100 million. (a) FZ (grant): EUR 28.0 million; (b) IDB (grant): USD 32.5 million (~EUR 28 million); (c) OFID (loan): USD 35.4 million (~EUR 31 million).

Assessment according to OECD DAC criteria

Relevance

1. *Alignment with policies and priorities*

The project's objectives were in line with the Millennium Development Goals (in particular Development Goal No. 7, "Ensure environmental sustainability"), the current Agenda 2030 (in particular SDG 7, "Affordable and clean energy") and the Paris Climate Agreement. Furthermore, the project's objectives were and remain in line with the German Federal Government's goal of protecting the global climate and the environment.

The project's objectives were in line with the 2006-2011 strategy for the development of the electricity sub-sector drawn up by the Ministry of Public Works, Transport and Communications (MTPTC), which is responsible for energy. Among other things, this strategy provided for the rehabilitation of existing generation and distribution facilities. The project's objectives also corresponded to the strategy paper on growth and poverty reduction adopted by the Haitian government in 2007, which accorded particular importance to improving infrastructure, especially in the energy sector. After the earthquake, the Haitian government also placed emphasis on rebuilding the electricity sector in its action plan for the national recovery and development of Haiti in March 2010. The key elements here were: (i) restoring the existing generation infrastructure, (ii) increasing energy transmission capacity and improving the management of the distribution network, (iii) expanding electricity distribution by increasing capacity where profitability levels are favourable, and (iv) increasing generation capacity.

2. *Alignment with the needs and capacities of stakeholders and beneficiaries*

Haiti is – and has been for decades – the poorest country in the Western Hemisphere, suffering from political unrest, gang crime, environmental disasters and associated humanitarian crises. The economic and social problems have also affected the electricity sector. At the time of the audit (2010), the coverage of the population's electricity needs was one of the lowest in the world. An estimated 10% of the population of 9.6 million had access to grid electricity from the state-owned energy supplier EDH. According to the World Bank³, just under 50% of the population had access to electricity in 2022, including off-grid approaches. However, this information should be treated with caution, as the data is inconsistent and varies from source to source. Furthermore, the electricity supply is not reliable, as electricity is only available for a few hours a day and is sometimes unavailable for long periods of time.

While EDH was one of the best-managed energy supply companies in Latin America in the 1970s and 1980s, it has deteriorated dramatically since then. Purchase prices that did not cover costs and high raw material costs left no financial leeway for replacement investments or preventive repairs. As a result, the country's energy infrastructure was and remains in a dilapidated state. In the years prior to the project review, only 122 to 152 MW of a comparatively modest total installed capacity of 267 MW was available.

In addition, the Haitian electricity sector was and continues to be heavily dependent on imported fossil fuels. Due to budgetary constraints on fuel imports, the Péligre hydroelectric power plant, as the main source of renewable energy, contributed up to 50% of the electricity actually generated at the time of the review. The remainder was generated by thermal power plants with diesel engines. In the following years, electricity generation from fossil fuels increased significantly to meet demand, reaching a share of over 90% of the electricity mix in 2015. This has further increased Haiti's dependence on imported fossil fuels, which is driving up the cost of energy supply and drastically reducing the scope for investment and maintenance.

The core problem of even more dramatic energy shortages than those already existing at the time, which would hamper reconstruction after the earthquake and further impair the economic situation in the country, was correctly identified. Consequently, the project addressed the rehabilitation of the largest hydroelectric power plant in the country, which was in a critical condition. It was thus able to contribute to solving the core problem. This is considered appropriate from both a contemporary and a current perspective, especially since the development of potential wind and photovoltaic energy in Haiti had not yet progressed in 2010 and the investment costs at that

³ See: [Access to electricity \(% of population\) - Haiti | Data](#)

time were also significantly higher than the estimated costs for the rehabilitation of the Péligre hydroelectric power plant.

Since electricity generation and its feed-in to the national grid are measures that do not directly benefit the target group, there is no specific target group in the narrower sense that would have benefited from the project and whose needs and capacities would have had to be taken into account, particularly those of disadvantaged or vulnerable groups. This also applies to potential gender impacts. Further potential through other conceptual designs is also not apparent ex post.

3. Appropriateness of design

The design of the measure, including its technical and organisational aspects, was appropriate and is considered, both at the time and today, to be suitable for contributing to the solution of the core problem described. The project aimed to rehabilitate the Péligre hydroelectric power plant in Haiti. This is by far the largest hydroelectric power plant in the country, which at times contributed 50% of the national electricity supply. Due to the financial situation of the energy supply company EDH, no renovations or repairs had been carried out on the hydroelectric power plant for a long period of time. The condition of the plant was so poor that an interruption in electricity production was to be expected. Therefore, from both a contemporary and current perspective, it seems appropriate that the project focused on rehabilitating the Péligre hydroelectric power plant in order to secure the electricity supply from a source that is less dependent on raw material prices, more efficient in macroeconomic terms and more climate-friendly. In addition to the rehabilitation of the Péligre hydroelectric power plant, the original project concept also envisaged the rehabilitation of the transmission line to Port-au-Prince. From both a contemporary and current perspective, the rehabilitation of the hydroelectric power plant in conjunction with the rehabilitation of the transmission line appears sensible in order to efficiently ensure the transport of the electricity produced to the point of consumption.

The cost estimates were based on previous studies, in particular a feasibility study from 2008. Against this background, the project concept also appeared appropriate from a financial point of view at the time of the PP. However, during implementation it became apparent that the hydroelectric power plant was in a much worse condition than assumed, with the result that the estimated costs could not cover the actual requirements and planned measures (see 8. *Contribution to the achievement of objectives*).

The project concept envisaged the Ministry of Public Works, Transport and Communications (MTPTC) and the state-owned energy supply company EDH as the implementing agencies for the project. Their capacities were assessed realistically. Financial constraints and the political appointment of senior management positions with frequent staff changes weakened the institution's performance. Against this backdrop, reservations were already expressed during the PP phase regarding the institution's capacities and performance. Due to EDH's financial, organisational and technical weaknesses, as with other donor-financed projects, an interministerial steering committee, a project coordination unit and a technical unit for the programme were planned at EDH.

The project was based on the following chain of effects: Provision of the grant (input)→ Rehabilitation of the Péligre hydroelectric power plant and the transmission line to Port-au-Prince (output)→ Reliable feed-in of electricity generated in a manner that is independent of raw material prices, macroeconomically efficient and climate-friendly into the national grid (outcome)→ Contribution to climate protection (by avoiding CO₂ emissions) as well as to reconstruction and economic development (impact). The underlying chain of effects and its interrelationships were fundamentally plausible at the time of the audit and at the time of the EPE. Only with regard to the outcome does the EPE focus on securing the electricity supply through the Péligre hydropower plant (see below).

The assumption that the rehabilitation of the hydropower plant would contribute to climate protection at the impact level by avoiding CO₂ emissions during electricity generation is also considered plausible from today's perspective. It is also considered plausible that the secure and sufficient power supply ensured by the rehabilitation is an important basis for post-earthquake reconstruction and economic development. Even if it is not possible to directly or quantitatively attribute the contribution to Haiti's overall economic development, the connection between power supply and economic development is plausible.⁴ The importance of the Péligre hydroelectric power plant as a central pillar of Haiti's electricity supply and its significance for the security of supply in Port-au-Prince underline the attributed overarching effects at the impact level.

⁴ See: Stern, D. I., Burkes, P. J., and Bruns, S. B. (2017). The Impact of Electricity on Economic Development: A Macroeconomic Perspective. UC Berkeley: Centre for Effective Global Action.

In line with the chain of effects, the target system was fundamentally designed to be conceptually comprehensible and verifiable. However, the target formulations, indicators and value assignments were only partially appropriate at the time of the PP and were adjusted accordingly during implementation and the EPE (see *Appendix 1*):

- The target formulation at the outcome level was modified as follows during the EPE: "Securing the electricity supply through the Péligre hydropower plant". The original target formulation, "Reliable feed-in of electricity generated in a manner that is independent of raw material prices, macroeconomically efficient and climate-friendly into the national grid", was fundamentally appropriate for capturing the benefits of the project. However, the target formulation was adjusted as part of the EPE in order to better reflect the future positive state achieved as a result of the use of the output in line with the state of the art.
- The indicator originally listed at the outcome level regarding the reduction of CO₂ emissions was moved to the impact level during the EPE, where it is usually located.

The concept pursued a holistic approach to sustainable development. The project primarily aimed at ecological and economic sustainability, as the rehabilitation of the hydroelectric power plant represented an ecologically and macroeconomically cost-effective solution at the time of the PP to meet electricity demand and reduce dependence on fossil fuels. Ultimately, however, the project also has an impact on the social dimension of sustainability through an efficient, reliable and secure long-term electricity supply.

4. Adaptability – response to change

At the time of the PP (2010), it was planned that the reservoir would be completely emptied. This was based on the 2008 feasibility study. The reservoir had been emptied regularly since 1990 in order to maintain the hydroelectric power plant's underwater facilities and clean the ground near the dam. Most recently, the reservoir had been emptied during the dry season in 2002, 2004 and 2006 in order to carry out maintenance and cleaning work. However, for political reasons and due to risks regarding social acceptability⁵, the decision was made at the start of implementation not to empty the reservoir. This change in strategy was based on a presidential decision. This delayed implementation and necessitated costly underwater work. To take these developments into account, the contributions of the three financiers, KfW, IDB and OFID, were increased. At the same time, the project concept was adjusted: the originally planned rehabilitation of the transmission line between the Péligre hydroelectric power plant and the capital Port-au-Prince was removed from the project. The IDB mobilised the necessary funds for this and financed the rehabilitation of the transmission line separately.

Summary of rating

The project addressed a key bottleneck and was conceptually suitable for helping to solve the core problem. It was in line with the policies and priorities of both the Haitian and German governments. Against this background, its relevance is rated as successful.

Relevance: 2

⁵ The Péligre reservoir is used for multiple purposes, i.e. it is not only used to generate electricity, but also to supply the irrigation areas below and to provide flood protection. Downstream agriculture is highly dependent on water inflows from the reservoir, so completely emptying the reservoir over a period of several months could have caused social upheaval. In addition, a complete interruption of electricity production for several months would have jeopardised the security of supply to the capital. There were also concerns about grid stability.

Coherence

5. Internal coherence

At the time of the audit, there was no German development cooperation programme with Haiti. At the time of the audit, there were no German activities in Haiti's energy sector other than the project described here. This was prepared and implemented as a matter of urgency in the aftermath of the severe earthquake.

German development cooperation also implemented further measures in the areas of poverty reduction and local development. It was therefore not possible to develop a concept for the measure based on division of labour and complementarities. Nevertheless, joint reporting was carried out for all financial cooperation and technical cooperation measures currently being implemented in order to provide a consolidated overview of developments in the country and at partner level. At the time of the EPE, Haiti is not a partner country of German development cooperation, but the project is embedded in the BMZ's regional strategy for bilateral cooperation with the Caribbean.

The project is consistent with both the former MDGs and the current Agenda 2030 and the Paris Climate Agreement (see *alignment with policies and priorities and Agenda 2030*).

6. External coherence

The project took up measures from the 2006-2011 strategy for the development of the electricity sub-sector of the Ministry of Public Works, Transport and Communications (MTPTC), which is responsible for energy. Among other things, this strategy provided for the rehabilitation of existing generation and distribution facilities. EDH was founded in the 1970s to operate the Péligre hydroelectric power plant and the national electricity grid. The project thus made use of existing national structures for implementation. It also built on procedures established by other donors with Haitian partners by setting up an interministerial steering committee, a project coordination unit and a technical unit for the programme.

The project was co-financed by the IDB, OFID and KfW under the leadership of the IDB. Close, regular and joint progress reviews were carried out. The IDB and World Bank continue to be active in Haiti with projects in the energy sector.

Summary of rating:

The project was implemented as a stand-alone project. It was in line with the international norms and standards to which German development cooperation is committed. In addition, the project supported the measures envisaged in the national strategy for the development of the electricity sub-sector to rehabilitate existing generation capacities, making use of existing national structures and building on procedures established with other donors. Coherence is therefore considered to have been successful.

Coherence: 2

Effectiveness

7. Achievement of (intended) objectives

The objective adjusted within the framework of the EPE was to secure electricity generation at the Péligre hydro-power plant.

EDH did not respond to requests within the framework of the EPE. As a result, no recent data (from 2022 to 2025) that can be evaluated with regard to target achievement is available at the time of the EPE to determine whether the targets have been achieved. The target value adjusted in the report to the BMZ, which is based on the operation of the three turbines, is used to assess the achievement of the indicator targets. Information on the status of outstanding repair work and on whether three or fewer turbines are in operation comes from interviews and written correspondence with the IDB, as well as from publicly available documents.

The achievement of the target at the outcome level can be summarised as follows:

Table Target achievement Outcome:

Indicator	Status PA	Target value BMZ report/EPE	Actual value at EPE (2025)
(1) Available capacity of the hydroelectric power plant in a normal hydrological year	Annual average: 10–30 MW	23 MW (average output for 3 turbines)	Not met (fewer than 3 turbines in operation since 2019)
(2) Electricity generation in a normal hydrological year (GWh/a)	162 GWh	201 GWh (for 3 turbines)	Not met (fewer than 3 turbines in operation since 2019)

8. Contribution to the achievement of objectives

In the case of PP, the project involved the rehabilitation of the Péligre hydroelectric power plant and the rehabilitation of the transmission line between Péligre and the capital Port-au-Prince. Four outputs were to be achieved: the restoration of the full installed capacity of the power plant's three machines (output 1); improving the efficiency of the machine sets (output 2); restoring the full transmission capacity of the high-voltage line to Port-au-Prince (output 3); sustainably reducing operational failures and extending the operating life by a further 20-25 years (output 4).

During the implementation of the Péligre hydroelectric power plant project, it was discovered that the plant was in much worse condition than assumed. This led to more complex and therefore more cost-intensive rehabilitation work and the cancellation of individual measures. As a result, some of the measures originally planned could not be implemented, such as the renewal of the bottom outlet, the construction of a new administration building and training and further education for EDH staff.

Contrary to the original plan, which was based on the feasibility study, it was decided at the start of implementation that the reservoir would not be emptied (see 4. *Response to changes/adaptability*). This resulted in complex underwater work, delays and further significant cost increases. As a result, the rehabilitation of the transmission line was outsourced. IDB provided separate financing for this. The rehabilitation of the transmission line was successfully completed, and the electricity generated at the Péligre hydroelectric power plant can now be efficiently transported to Port-au-Prince.

The main focus of the rehabilitation was the repair of the power plant's three turbines. Turbine G3 was the first to be rehabilitated and went into operation in July 2016. The rehabilitation of the other two turbines was staggered and slightly delayed. The second turbine, G2, went into operation in January 2018. The rehabilitation work was completed and the third and final turbine, G1, went into operation in May 2018.

Only in 2018 were all three turbines in operation at the same time, albeit not for the whole year. Problems with turbine G3 first arose in January 2019. It was not possible to recommission it until October 2020. Turbine G1 has been out of operation since April 2020. Despite various expert opinions and lengthy negotiations with the general contractor, no agreement could be reached on the necessary repairs. Due to the significant delays in the rehabilitation of the power plant and the agreed warranty⁶, no warranty claims could be made for the work. The necessary repair work had not been carried out by the time of the EPE, although the IDB had provided additional financing for this purpose. The exact extent of the damage was not foreseeable at the time of the EPE. According to the IDB, the plan is to first contract consultants through the IDB to assess the condition of the plant on site. Based on this, the IDB states that a repair plan will be developed and implemented. Given the adverse circumstances, timely implementation does not seem likely. The AK states that turbines G1 and G2 are likely to have similar problems to turbine G3 (wear and tear on the shaft seal) and that, without appropriate technical adjustments or repairs, the turbines may be reduced in output or fail, further limiting the available capacity and generation.

The target values for available capacity and electricity generation, which are based on the only year in which three turbines were in operation, cannot be achieved with two or fewer turbines in operation. To make matters

⁶ The guarantee was granted for 36 months after delivery rather than after commissioning.

worse, progressive sedimentation and periods of drought are also likely to have a negative impact on the achievement of the target values. The reason for the silting up of the reservoir is extensive deforestation in the region above the dam and water management of the reservoir that is only partially optimised for electricity generation (due to the high demand for irrigation water below the plant).

In addition to the above-mentioned challenges, the security situation in the country deteriorated increasingly, which had a negative impact on the implementation of the project. The completion of work was delayed and, in some cases, made impossible because the necessary specialist personnel were unable to travel to the country.

9. *Quality of implementation*

Close and constructive dialogue between the donors involved in the financing – IDB, OFID and KfW – made it possible to respond to developments in implementation and find common ground for necessary adjustments. In addition, the IDB mobilised additional funds to finance measures that could no longer be financed within the scope of the project (rehabilitation of the transmission line to Port-au-Prince) or that went beyond the original scope (repair work).

During the project review, it had already been established that the implementing agency EDH was in a weak position (see 3. *Adequacy of the design*). Individual operational review criteria relating to the economic performance of the implementing agency were not met. Frequent personnel changes in the management of EDH and in the responsible ministry proved challenging. Initially, there were significant shortcomings in the cooperation with the project coordination unit (PCU) (e.g. long processing and response times). This was exacerbated by the fact that the consultant did not initially have a permanent presence on site and at the implementing agency. With the consultant's on-site presence, implementation and cooperation with the implementing agency improved.

There were repeated differences between EDH and the general contractor. During implementation, the general contractor repeatedly threatened to suspend work due to outstanding reimbursements of taxes and duties paid. In addition, the general contractor sometimes made disproportionate additional claims for additional work and delays.

10. *Unintended effects (positive or negative)*

No lasting negative environmental or social impacts were expected from the implementation of the measures, nor did any occur during the course of the project. As the project involved the rehabilitation of an existing facility, the measures implemented did not require any additional land area or resettlement. In order to reduce the social impact of the project during implementation, the reservoir was not completely emptied (see 4. *Response to change/adaptability*).

Summary of rating

The target values at the outcome level were not achieved. Although the Péligre hydroelectric power plant does secure the power supply in part, this is to a significantly lesser extent than intended, as two or fewer turbines are in operation instead of all three. A further deterioration in the power plant's performance and generation cannot be ruled out in the future. Against this background, the effectiveness is considered to be rather unsuccessful.

Effectiveness: 4

Efficiency

11. Production efficiency

The cost of rehabilitating the hydroelectric power plant and the transmission line to Port-au-Prince was estimated at USD 40 million during the project appraisal (2010), with the estimate for the base costs without contingencies set at just under USD 35 million. Ultimately, the final cost of rehabilitating the hydroelectric power plant (excluding the rehabilitation of the transmission line and other measures that were not implemented) amounted to approximately USD 100 million (EUR 87 million)⁷. The total cost was thus around 250% higher than the original total cost. The following aspects were the primary reasons for the enormous increase in total costs: (i) the condition of the machinery was worse than originally planned; (ii) the political risk in Haiti (security situation) and increased material costs, which led to significantly higher offer prices; (iii) the occurrence of unforeseen additional work (e.g. underwater work and additional repairs to the machinery); (iv) economically sensible additional investments (e.g. replacement of stators instead of just cleaning) and (v) cost increases due to significant delays caused by, among other things, EDH's weak ownership. The total costs were financed by the following co-financing: (a) FZ (grant): EUR 28.0 million; (b) IDB (grant): USD 32.5 million (~EUR 28 million); (c) OFID (loan): USD 35.4 million (~EUR 31 million).⁽⁶⁾

A study published in 2020 and prepared by the IDB, entitled "⁸", included a linear regression model for the rehabilitation of HPPs. According to this model, the costs for the rehabilitation of the Péligre HPP were retrospectively estimated at USD 92.3 million. The actual costs for rehabilitating the Péligre HPP were just under 10% higher than the costs calculated on the basis of the model. In view of the uncertainties of the model, the project was still within budget according to the IDB. Accordingly, the costs of rehabilitating the HPP can still be considered reasonable given the circumstances.

During the project preparation for the rehabilitation of the Péligre hydroelectric power plant, the specific costs were estimated at USD 740/kW. At the end of the project, they amounted to just under USD 2,000/kW. In a global comparison, the costs for the rehabilitation of the Péligre hydropower plant were roughly on a par with those for a new build⁹. The costs per kW for the rehabilitation of other hydropower plants in Latin America were significantly lower. In Brazil, the rehabilitation of the Furnas and Luiz Carlos Barreto de Carvalho hydropower plants was completed in 2020 at a total cost of around USD 660 million. The two power plants have a combined capacity of 2,266 MW. This corresponds to a cost of just under USD 300/kW (2020). At the time of the EPE, the IDB is also financing the rehabilitation of a hydroelectric power plant in Paraguay with a capacity of 210 MW. The estimated cost of the rehabilitation is around USD 730/kW.

However, the above comparison with a new building does not take into account local circumstances (e.g. availability of qualified companies and personnel on site; security situation; approval processes; performance of the operator), which represent a key cost factor. This also applies to rehabilitation projects, where, in addition to the points mentioned above, the wide variety of rehabilitation content and scope makes it difficult to compare the specific costs of rehabilitation projects.

EDH was supported by an implementation consultant during the implementation phase. The costs for the consultant were originally estimated at around 9% of the base costs and amounted to approximately 8% of the total costs after implementation. Given the difficult conditions, the additional work and supplementary investments mentioned above, the weakness of EDH and the delays in implementation, these costs appear reasonable.

The estimated project duration from the conclusion of the FC financing agreement to the AK was extended from 48 to approximately 136 months. The significant extension of the duration is mainly due to the difficult underwater work that was essential for the start of work on the remaining two turbines. Further delays were due, among other things, to unforeseen additional work and problems with the turbines that arose from 2019 onwards.

⁷ The actual total cost was calculated on the basis of the financial contributions of the individual donors and amounted to around USD 100 million. The EPE was calculated using a EUR:USD exchange rate of 1:1.15, which is the average of the exchange rates over the project period (2010-2022).

⁸ See IDB Project Completion Report on the rehabilitation of the Péligre hydropower plant (HA-L1032 and HA-L1038).

⁹ See IRENA (2012): [Renewable Energy Cost Analysis Series, Volume 1: Power Sector, Issue 3/5, Hydropower](#)

Although the increased total costs appear understandable, given the extent of the cost increases and the exclusion of several measures originally planned, production efficiency is generally considered to be rather unsuccessful.

12. Allocation efficiency

With regard to operating costs and electricity sales prices, due to a lack of cooperation and information from EDH, the figures used by AK must be relied upon. In its revised budget of April 2018, EDH reported general operating costs not related to the Péligre hydroelectric power plant in the amount of 19.24 US\$₂₀₁₈/kWh excluding tax, compared to an average electricity sales price excluding tax of 17.39 US\$₂₀₁₈/kWh at the applicable exchange rate (66 HTG/USD).

The acquisition costs for electricity from fossil fuel-fired power plants, which also contribute to the electricity supply in Port-au-Prince, ranged between 15.30 and 19.90 US\$₂₀₁₈/kWh in 2018. According to AK, the cost price per billable kWh from the Péligre hydroelectric power plant was around US\$2.10₍₂₀₁₈₎/kWh at the same time. Given the significantly higher electricity procurement costs from fossil fuel power plants, the Péligre hydroelectric power plant thus relieves the burden on EDH and at least partially offsets the high costs of purchasing energy from independent power producers. There is no information available to indicate that the proceeds from the sale of electricity from the Péligre hydroelectric power plant are used to finance the sustainable operation of the plant (e.g. procurement of spare parts). It therefore stands to reason that the proceeds from the Péligre hydroelectric power plant are used – at least in part – to cross-subsidise the high costs of electricity from fossil fuels.

At the time of project preparation, the construction of a new hydroelectric power plant in the same region (Plateau Central) was in the study phase. The costs for the construction of the new hydroelectric power plant with a capacity of 32 MW were estimated at USD 191 million in 2010. This meant that the estimated costs for the new construction were just under USD 6,000/kW. The final costs per kW for the rehabilitation (just under USD 2,000/kW) were thus still significantly below the estimated costs per kW for the construction of the new hydroelectric power plant. Apart from the aforementioned construction of a new hydroelectric power plant, which had not materialised by the time of the EPE, there was no alternative in Haiti that could be implemented in the short term to rehabilitate the Péligre hydroelectric power plant and secure the power supply at the level of the Péligre hydroelectric power plant's capacity, which contributed up to 50% of the national power supply at the time of the audit.

Even though other technologies were not an option due to their preparation time and the short time frame, the cost of rehabilitating the hydroelectric power plant (just under USD 2,000/kW) seems reasonable, even when compared to the costs of wind and photovoltaics (PV) at the time. At the time of implementation (2010), the average global cost of wind energy was around USD 2,000/kW and for PV power plants around USD 4,700/kW. There were no large PV plants in Haiti at the time of project preparation. At the time of the EPE (2025), the IDB financed the country's largest PV project with a capacity of 13.4 MW (compared to the 23 MW of the Péligre hydroelectric power plant when operating the three turbines), which is connected to a 5 MW storage system. The cost of this project is estimated at USD 1,700/kW.

Summary of rating

Overall, production efficiency is considered to be rather unsuccessful. In contrast, allocation efficiency is more positive: electricity generation from the Péligre hydroelectric power plant was the cheapest alternative compared to electricity supply from fossil fuel power plants (based on data from 2018) and, given the short time frame, the only alternative. Alternatives would have required a longer preparation time or would not have been cheaper at the time. It stands to reason that the proceeds from the hydroelectric power plant are used to cross-subsidise the purchase of electricity from other (fossil fuel) power plants in order to meet the massive shortfall in electricity demand. Given that a failure of the WKW would have had a massive impact on the country's electricity supply, the overall efficiency is assessed as moderately successful despite the enormous cost overrun.

Efficiency: 3

Overarching development policy impacts

13. Overarching (intended) developmental changes

The impact target adjusted within the framework of the EPE was to ensure that sufficient electricity is available for reconstruction and sustainable economic development, that living conditions are improved and that climate-damaging emissions from electricity generation are avoided.

At the time of the PP, renewable energies accounted for around 50% of the electricity mix, primarily generated by the Péligre hydroelectric power plant. In the following years, the share of electricity generated from fossil fuels increased steadily, peaking in 2015-2017 and most recently reaching a share of around 80%. This means that renewable energies account for 20% of the electricity mix. A large part of this continues to come from the Péligre hydroelectric power plant. The grid emission factor (GEF) used by PP was 511 t/GWh and the GEF published by the UNFCCC for 2021 was 765 t/GWh. This means that climate-damaging emissions from electricity generation have increased since the time of the audit.

As with effectiveness, the target value adjusted in the reporting to the BMZ, which is based on the operation of the three turbines, is used to assess the achievement of the indicator target. Information on the status of outstanding repair work and whether three or fewer turbines are in operation comes from interviews and written exchanges with the IDB, as well as from publicly available documents.

The achievement of the target at the impact level can be summarised as follows:

Table: Target achievement at impact level:

Indicator	Status PA	Target value BMZ report/EPE	Actual value at EPE (2025)
CO ₂ emissions avoided (t/year)	0 (total failure of the hydroelectric power plant) 82,782 t/a ¹⁰ (multi-year average before implementation)	102,711 (with three turbines in operation)	79,205 (average for 2019/20 with GEF of PA) 118,575 (average value for 2019/20 with GEF 2021)

14. Contribution to overarching (intended) developmental changes

The rehabilitation preserved Haiti's environmentally friendly hydropower potential and avoided climate-damaging emissions from electricity generation. Without the rehabilitation, the hydropower plant would have been at risk of total failure and electricity generation would have had to be replaced by fossil fuel power plants. Data on total electricity production in Haiti also suggest that the amount of electricity produced from fossil fuels in absolute terms will continue to fluctuate between 2018 and 2022, depending on electricity generation from renewables, primarily from the Péligre hydroelectric power plant.¹¹ Each kWh produced in Péligre thus replaces electricity from fossil fuel power plants and contributes to the avoidance of CO₂ emissions.

If the GEF (511t/GWh) used as the basis for PP (2010) and also for the adjusted indicator target value is applied, the target value for avoided CO₂ emissions would not be achieved with two or fewer turbines in operation since 2019. Based on a GEF (765t/GWh) published by UNFCCC in 2021, the targeted avoidance of CO₂ emissions would be achieved with two turbines. However, this is solely due to the sharp increase in the GEF from 511t/GWh to 765t/GWh. This reflects the 80% increase in the share of fossil fuels in electricity generation outlined in 13. *Overarching (intended) development policy changes*, and thus runs counter to the intended effects of reduced emissions in electricity generation.

However, progressive sediment deposits and periods of drought are proving challenging. The storage capacity of the reservoir is shrinking due to sediment deposits, meaning that less water is available for power generation

¹⁰ The base value and target values were calculated on the basis of the grid emission factor (GEF) of 511t/GWh used during the PP.

¹¹ [Haiti - Countries & Regions - IEA](#) and [Haiti - Electricity generation 2023 | countryeconomy.com](#)

during the dry season. By 2040, the lake's storage capacity is expected to be completely exhausted and the hydroelectric power plant will only be able to operate as a run-of-river power plant. The reason for the silting up of the reservoir is extensive deforestation in the region above the dam and water management of the reservoir that is only partially optimised for electricity generation (due to the high demand for irrigation water below the plant). If the silting up of the reservoir is not counteracted, there is a risk that the target value cannot be achieved in the long term, even with three turbines available in terms of avoided CO₂ emissions.

Ensuring the supply of electricity is just as important for economic development as sufficient production. The Péligre hydroelectric power plant is a central pillar of Haiti's electricity supply and contributes to the security of supply in Port-au-Prince. Between 2016 and 2019, the power plant's net contribution to the high-voltage grid of the Port-au-Prince metropolitan area amounted to around 68% of the electricity generated. As economic development depends on multidimensional factors, it is not possible to reliably quantify the contribution to reconstruction and overall economic development. Although direct positive effects of the Péligre hydroelectric power plant's electricity generation on Haiti's economic development appear plausible, particularly in view of the importance of the Péligre hydroelectric power plant for Haiti's electricity supply (see 3. *Concept*), these are likely to be less than possible given the continuing massive shortfall in electricity supply. No statements can be made on the status of reconstruction. Any efforts are likely to have been thwarted by the deteriorating security situation in the country.

Haiti's gross domestic product (GDP) developed positively between 2016 and 2018. Since 2019, however, the country has been recording negative GDP growth rates. However, this development is due less to the reduced electricity generation at the Péligre hydroelectric power plant than to the security situation, which has deteriorated dramatically since 2018 and is having a massive impact on economic development and living conditions. Measured by the Human Development Index (HDI), living conditions in the country initially improved in the period after the earthquake until 2019. Since then, Haiti's HDI value has declined and only experienced a slight increase in 2022, without however reaching the 2018 value again.

15. Contribution to overarching (unintended) developmental changes

There is no evidence of unintended development policy changes.

Summary of the rating

Since, apart from 2018, it was not possible to operate all three turbines simultaneously in any year after the completion of the rehabilitation, the power plant's output was lower and, accordingly, so were the savings in climate-damaging emissions from electricity generation. The development policy effects in the area of climate protection are not being achieved to the intended extent. Given the importance of the Péligre hydroelectric power plant for the national electricity supply, it is plausible that the power plant's electricity generation has a direct impact on economic development. However, as economic development depends on multidimensional factors, it is not possible to reliably quantify the contribution to overall economic development. The reduced electricity generation and the tense security situation are likely to have had a negative impact on economic development and the improvement of living conditions. The project falls well short of expectations in terms of its overall development policy impacts. The overall development policy impacts are therefore assessed as rather unsuccessful.

Overall development policy impacts: 4

Sustainability

16. Capacities of stakeholders and beneficiaries

There is no reliable information available on EDH's current financial situation. According to the IMF report, EDH's chronic losses are largely covered by the budget.¹² During the implementation period, transfer payments from the public budget to EDH amounted to just under 2% of GDP.¹³ In absolute terms, according to IMF data, EDH has been receiving fewer transfer payments from the state since 2019.¹⁴ The transfer payments include: (i) lost tax revenue (including sales taxes levied on electricity consumption that are not paid to the government); (ii) payment

¹² IMF (2020): [Haiti: 2019 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Haiti](#)

¹³ IMF (2020): [Haiti: 2019 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Haiti](#)

¹⁴ IMF (2023): [Haiti: Request for the Disbursement Under the Credit Facility – Press Release; Staff Report; and Statement by the Executive Director for Haiti](#) and IMF (2025): [Haiti: Staff-Monitored Programme – Press Release and Staff Report](#)

guarantees in the form of electricity purchases from independent power producers to settle electricity generation bills that were not paid by EDH; (iii) the payment of independent producers' bills for the purchase of fuel in the amount of EDH's payment arrears.¹⁵ No information is available on the background to the reduction in transfer payments.

In recent years, measures have been taken to improve EDH's financial situation.¹⁶ In 2020, EDH began replacing traditional postpaid meters with prepaid meters to reduce electricity theft and combat the accumulation of unpaid bills, which have long affected EDH's economic situation. A total of 70,000 prepaid meters were to be installed.¹⁷ However, transmission and distribution losses remain high. The Cash Recovery Index (CRI), which measures the proportion of electricity paid for in relation to electricity generated, has increased since the start of the project implementation from just under 32% (2007/2008) to over 55% (2018/2019)¹⁸, but remains very low. In 2023, EDH implemented a tariff increase to improve financial sustainability and reduce dependence on government subsidies.¹⁹ It is not possible to assess exactly how these measures will affect EDH's financial situation.

EDH's capacity to operate the hydropower plant is weak. In order to secure the operation of the Péligre hydropower plant in the short term, the IDB financed a maintenance contract with a specialised company until 2022 following the rehabilitation. However, this contract did not cover the procurement of necessary spare parts and tools. EDH itself has not yet been able to raise the necessary funds to ensure a functioning spare parts management system. At the time of the EPE, the IDB planned to conclude further maintenance and repair contracts in order to restore the power plant to full operational capacity.

In view of EDH's continuing financial difficulties, declining government transfers, lack of spare parts management and poorly developed capacities for operating the rehabilitated plant (see *section on supporting sustainable capacities*), the agency's resilience to respond to technical problems is considered weak. However, the project has helped to secure EDH's renewable energy generation capacity. This has reduced dependence on electricity generated from imported fossil fuels. This is likely to have a positive effect on EDH's strained financial situation.

17. Contribution to supporting sustainable capacities

Training and further education measures within the framework of the project were originally planned by the general contractor and the implementation consultant. Ultimately, however, the contract with the general contractor only included a few basic training courses for EDH staff. The training courses originally planned by the implementation consultant were not carried out in order to save costs.

18. Durability of impacts over time

The quality of the rehabilitation of the Péligre hydroelectric power plant is rated as mediocre in the ex-post evaluation. Several of the three turbines have been out of service since the rehabilitation. One turbine has not been in operation since April 2020. In addition, there have been problems with the shaft seal of another turbine, which are likely to be due to a design fault by the general contractor and could also affect the shaft seals of other turbines. It cannot therefore be ruled out that the same problems will occur with the other turbines in the future.

Although EDH guarantees the operation of the hydroelectric power plant, no information is available on maintenance and its scope. However, as previously stated, the operator's capacities are weak due to tight financial constraints, a lack of spare parts management and insufficient training and further education in operation and maintenance. In addition, the security situation in the country makes it difficult for foreign companies to carry out maintenance and repair work, and international companies have limited interest in contracts in Haiti.

To make matters worse, progressive sedimentation and periods of drought are having a negative impact on the water inflow and thus on the power generation potential of the Péligre hydroelectric power plant. Without countermeasures, the lake's storage volume is expected to be completely depleted by 2040, and the hydroelectric power plant will only be able to operate as a run-of-river power plant. This will significantly limit power generation capacity, especially during the dry season (December to April).

¹⁵ IMF (2025): [Haiti: Staff-Monitored Programme – Press Release and Staff Report](#)

¹⁶ December 2024, IMF: [Haiti: 2024 Article IV Consultation – Press Release, Staff Report, and Statement by the Executive Director for Haiti](#)

¹⁷ December 2024, IMF: [Haiti: 2024 Article IV Consultation-Press Release, Staff Report, and Statement by the Executive Director for Haiti](#)

¹⁸ IMF (2020): [Haiti: Selected Issues in: IMF Staff Country Reports Volume 2020 Issue 122 \(2020\)](#)

¹⁹ December 2024, IMF: [Haiti: 2024 Article IV Consultation-Press Release, Staff Report, and Statement by the Executive Director for Haiti](#)

The EPE concludes that it is unlikely that the 20 to 25-year extension of the operating life (i.e. until 2038–2043) targeted by the rehabilitation will be achieved.

Summary of rating

Even during the project review, it was clear that the EDH had very weak capacity. Persistent problems with the power plant's turbines meant that, with the exception of 2018, all three turbines were never in operation and therefore less electricity was produced than expected. The security situation in the country makes it difficult for international companies to maintain and repair the hydropower plant. In addition, progressive sedimentation is limiting the storage volume of the lake and, without countermeasures, will have a long-term negative impact on the electricity generation potential of the Péligre hydropower plant. It is unlikely that the rehabilitation will achieve the targeted extension of the operating life from 20 to 25 years. Sustainability is assessed as rather unsuccessful.

Sustainability: 4

Overall assessment

The project addressed a key bottleneck in the reconstruction process following the devastating earthquake in 2010 and in economic development by securing the power generation capacity of Haiti's largest hydroelectric power plant, which is of paramount importance for the country's electricity supply. It was in line with the policies and priorities of both the Haitian and German governments.

The project was in line with international norms and standards to which German development cooperation is committed. In addition, the project supported measures envisaged in the national strategy for the development of the electricity sector to rehabilitate existing generation capacities, making use of existing national structures and building on procedures established with other donors.

Although the Péligre hydroelectric power plant does secure the electricity supply to some extent, this is to a much lesser extent than intended, as only two or fewer turbines are in operation due to ongoing technical problems with the rehabilitated turbines, rather than all three. A further deterioration in the power plant's performance and generation is likely in the future. Against the backdrop of ongoing problems with the power plant's turbines, EDH's continued weak capacity and progressive sedimentation in the reservoir, it is considered unlikely that the rehabilitation will achieve its intended goal of extending the plant's operating life by 20 to 25 years, i.e. until 2038 or 2043.

The total costs were significantly higher than the estimated costs for the rehabilitation. Nevertheless, compared to electricity supply from fossil fuel power plants, electricity generation from the Péligre hydroelectric power plant was the cheapest and, at the same time, the only option that could be implemented in the short term to secure the electricity generation volumes necessary for Haiti.

After completion of the rehabilitation, the hydroelectric power plant's output was lower than possible, with the exception of 2018, and the savings in climate-damaging emissions from electricity generation were correspondingly lower. Given the importance of the Péligre hydroelectric power plant for the national electricity supply, it is plausible that the plant's electricity generation has a direct impact on economic development. The reduced electricity generation, as well as the tense security situation, are likely to have had a negative impact on economic development and the improvement of living conditions, with the security situation probably being the more significant factor in this regard.

Overall rating: 4

Contributions to Agenda 2030

The international community has agreed on the Sustainable Development Goals (SDGs) of Agenda 2030 (UN, 2025) and the implementation of the Paris Climate Agreement (UNFCCC, 2015). The aim of the Paris Agreement is to limit global warming to well below 2°C and, if possible, below 1.5°C compared to pre-industrial levels. By generating electricity from renewable energies and avoiding CO₂ emissions, the project contributes to SDGs 13 (measures to combat climate change) and 7 (ensuring access to affordable, reliable, sustainable and modern

energy for all), as the rehabilitation of the Péligre hydroelectric power plant and thus the securing of electricity supply from renewable energies 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. Given the importance of the Péligre hydroelectric power plant for Haiti's national electricity supply, securing electricity generation from renewable energies could also contribute in principle to environmentally sustainable economic development (SDG 8), but this is hampered by other factors (see 14. *Contribution to overarching (intended) development policy changes*).

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

The strengths and weaknesses of the project include in particular

- Despite the enormous cost increase, the rehabilitation of the country's largest hydroelectric power plant was the most cost-effective option in the short term for securing large-scale renewable energy generation capacity.
- Political, environmental and social considerations arising from the fact that the Péligre reservoir is used for multiple purposes (irrigation below the reservoir, flood protection, electricity generation) were addressed in the project and implemented accordingly.
- The guarantee provided by the general contractor after delivery instead of after commissioning meant that, due to delays in project implementation, warranty claims could no longer be made after commissioning. As a result, the general contractor was no longer liable for repairing damage.
- The institutional weaknesses of the project sponsor were clearly identified during the project review. Training courses originally planned by the implementation consultant were not carried out for cost reasons.
- A spare parts inventory was not established.

Conclusions and lessons learned:

- Large hydroelectric power plants that are of outstanding importance for electricity generation and cannot be replaced in the short term may, despite (very) high rehabilitation costs, represent the most cost-effective option for securing generation capacity in the short term when compared with alternatives.
- When rehabilitating hydroelectric power plants whose reservoirs are used as multi-purpose basins, it is essential to develop and weigh up the scenarios for implementation – (partial) discharge or no discharge – including cost estimates and associated risks, as this has an enormous impact on the overall costs in addition to environmental and social effects.
- In the case of warranty periods in turnkey projects, it is very important that these are based on commissioning and not on the delivery date.
- In the case of weak operators, planned training and further education measures must be implemented even if cost increases require new prioritisation of the measures to be financed.
- In addition, for institutions with weak (financial) capacities, the financing of essential spare parts from project funds should be considered so that they are able to carry out repairs or have them carried out at short notice despite insufficient financial resources.

Evaluation approach and methods

Methodology of the ex-post evaluation

The ex-post evaluation follows the methodology of a rapid appraisal, i.e. a data-based, qualitative contribution analysis, and represents an expert opinion. The project is attributed effects based on plausibility considerations, which are based on a careful analysis of documents, data, facts and impressions. Where possible, this also includes the use of digital data sources and modern techniques (e.g. satellite data, online surveys, geocoding). The causes of any contradictory information are investigated, attempts are made to resolve them, and the assessment is based on statements that are confirmed by several sources of information (triangulation), where possible.

Documents:

Internal project documents, consulting reports, reports from other donors, strategy papers, context, country and sector analyses, media reports.

Data sources and analysis tools:

Data from project literature, qualitative interviews

Interview partners:

KfW stakeholders, technical experts, other donors

The analysis of the effects is based on assumed cause-and-effect relationships, documented in the impact matrix developed during the project appraisal and updated during the ex-post evaluation, if necessary. The evaluation report sets out arguments as to why certain influencing factors were identified for the effects observed and why the project under review probably made a certain contribution (contribution analysis). The context of the development measure is taken into account in terms of its influence on the results. The conclusions are put into relation to the availability and quality of the data basis. An evaluation concept serves as the reference framework for the evaluation.

On average, the method offers a balanced cost-benefit ratio for project evaluations, with the knowledge gained and the evaluation effort being in equilibrium, and allows for a systematic assessment of the effectiveness of DFG projects across all project evaluations. Individual ex-post evaluations cannot therefore meet the requirements of a scientific assessment in the sense of a clear causal analysis.

The following aspects limited the evaluation:

- Desk evaluation: Given the precarious security situation in Haiti, it was not possible to conduct an on-site visit with discussions with the implementing agency and a visit to the WKW.
- Insufficient data: The lack of responsiveness on the part of the implementing agency meant that the ex-post evaluation was largely based on data already available to AK. More recent detailed data on the operation and failures of the Péligre hydropower plant and on its condition were not available.

Methodology for assessing success

A six-point scale is used to assess the project in line with the OECD DAC criteria. The scale values are as follows:

- Level 1** Very successful: results significantly above expectations
- Level 2** Successful: results fully in line with expectations, without significant shortcomings
- Level 3** Moderately success: below expectations, but positive results predominate
- Level 4** Moderately unsuccessful: significantly below expectations and negative results dominate despite recognisable positive results
- Level 5** Unsuccessful: despite some positive partial results, the negative results clearly dominate
- Level 6** Highly unsuccessful: the project is useless or the situation has deteriorated

The overall rating on the six-point scale is based on a project-specific weighting of the six individual criteria. Levels 1–3 of the overall rating indicate a 'successful' project, while levels 4–6 indicate an 'unsuccessful' project. It should be noted that a project can generally only be classified as "successful" in terms of development policy if the achievement of project objectives ("effectiveness") and the effects at the overall objective level ("overarching development policy effects") as well as sustainability are rated at least as "limited success" (level 3).

The annex to this report is available upon request (German only).

Imprint

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