OPERATION EVALUATION SUMMARY

Bucharest Wastewater Treatment Plant, Glina

Romania

August 2013

EBRD EVALUATION DEPARTMENT

European Bank
for Reconstruction and Development

Operation Evaluation

Summary

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Operation Evaluation

Summary

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Industry:	MEI	**Portfolio:**	Public/non sovereign
Disbursement:	21 June 2007		
Investment type:	Debt	**Environmental category:**	B/1
Total amount:	€108.3 million	**Board approval:**	29 November 2005
EBRD amount:	€10 million		

1 Executive summary

In 2005, the Board approved a loan of €10 million to co-finance construction of the Bucharest Wastewater Treatment Plant (WWTP). This was a public non-sovereign loan to the City of Bucharest with a 15-year maturity and a four-year grace period. Co-financing included a €73.3 million sovereign grant from EU ISPA (Instrument for Structural Policies for Pre-Accession) and a €25 million sovereign loan from the EIB (European Investment Bank). The completed plant is to be operated by Apa Nova, an international engineering firm, under a concession agreement and is intended to bring Bucharest into full compliance with the EU Wastewater Treatment Directive. The project comprised the first of two investment phases, each planned to treat 50 per cent of the projected wastewater load. Phase I (this project) was designed to treat 50 per cent of the projected wastewater load. Phase II will treat the remaining 50 per cent. Phase II is to be co-financed with EU Cohesion Funds beginning in 2013. Negotiations for the EBRD's participation are underway.

The operation team's self-assessment (Operation Performance Assessment or "OPA") acknowledges that without the EBRD's loan the project would have gone forward as a sovereign only project. The EBRD's presence, via a loan to the City, gave the City a much greater role. The EBRD put emphasis on the need to establish a wastewater treatment tax and required the City to provide financial reporting against international standards to support improved financial discipline. It also brought greater transparency by requiring monitoring of construction and operating arrangements; development of a tariff structure that covers WWTP operations and maintenance (O&M) costs; as well as repayment of the debt through a special account. The EU-ISPA appreciated the EBRD's involvement in the financing as the EBRD brought experience in promoting cost recovery for wastewater projects.

Findings

Complex concession contracts and debt service

The project required that a new wastewater tax be implemented prior to first disbursement. The City was responsible for raising the wastewater tax but needed to agree with Apa Nova on how the tax would be collected, which required an amendment to Apa Nova's existing concession agreement. Although it seemed straightforward, Apa Nova used this as an opportunity to clarify with the City how funds would be allocated in the event customers did not pay the full amount. The company's management wanted this clear in the concession agreement as Apa Nova is responsible for collecting the tax. The revised amendment was also an opportunity to address other factors outside the remit of this project which in turn resulted in delays in implementing the tax.

Compliance with EU Environmental Standards

The project was expected to be designed in line with the EU environmental standards for urban wastewater treatment. The initial EU project approval was not specific regarding the level of treatment required by the WWTP. Given the uncertainties associated with a project of this scale and magnitude, the EU decision initially provided for a two-phased WWTP, split in two equal lines, and therefore only half of the wastewater generated by the City of Bucharest would comply with national and EU standards at the end of this project. In fact, the preliminary design prepared in 2004 indicated a total capacity one-third larger than the eventual 2008 detailed design. This had a significant impact on the design of line 1 and subsequent phasing approach. As the plant (Stage I and II) was only designed to treat half 1990's design load, it remains unclear if this plant will achieve full EU compliance. This can now only be achieved by expanding line 2. Population growth also needs to be anticipated. The plant was initially designed based on conditions from 30 years ago. The Bank experienced the same issue with the Saint Petersburg Southwest Wastewater Treatment plant, which has also been built based on an old design.

- Population growth projections and changes in environmental standards must be anticipated for the countries that are EU candidates, prior to their integration into the EU.

Use of a Public Private Partnership (PPP)

The operator of this project is an international engineering firm with extensive sector experience in in Romania and elsewhere. The Bank has supported PPP in the water supply sector and, through this project, is supporting PPP in wastewater via a restructuring of the initial PPP contract. Experience on these two projects highlighted several generic points regarding PPPs – the need for an adequate legal framework and the benefits of partnering with appropriate technology, management skills and know-how.

2 What were the project ratings?

Table 1. Summary of ratings

Relevance	
Additionality (Fully verified, largely verified, partly verified, not verified)	Largely verified
Effectiveness	
Achievement of operation objectives (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Project financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Efficiency	
Bank handling (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Bank investment performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Impact and sustainability	
Transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Environmental and social performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Extent of environmental and social change (Outstanding, substantial, some, none/negative)	Some
Overall performance rating (Highly successful, successful, partly successful, unsuccessful)	Successful

3 How relevant was this project to the EBRD's mandate?

3.1 What was the rationale behind this project?

The project was consistent with the MEI sector policy and the Romania country strategy at the time. The country strategy looked to investments in the MEI sector and collaboration with EU ISPA on wastewater projects. It also anticipated working closely with EIB.

3.2 What was the Bank's additionality in the project?

Table 2. Additionality ratings

Additionality (Fully verified, largely verified, partly verified, not verified)	Largely verified

At appraisal, the Bank was considered additional for the added value brought to the transaction that differed from the role played by EU-ISPA and EIB. The Bank's loan supported an innovative project-finance structure based on ISPA grant co-financing. EU-ISPA provided technical assistance to ensure appropriate institutional capacity at the municipal level. This was particularly important for a complex project which was to be financed in two phases, with the second phase financed under EU Cohesion Funds. The Bank's involvement in the project during Phase I helped leverage both EU-ISAP and EIB financing. EU-ISPA supported the EBRD's involvement, as the EBRD was able to assist with implementation issues which the EU-ISPA, as a granting agency, could not easily address. In addition, the Bank's tenor of 15 years was longer than the tenor of Bucharest's Eurobond.

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The EU felt that the EBRD's involvement in the financing, given its experience in promoting cost recovery in water projects, as well as its role in financing PPPs such as the Apa Nova PPP, helped to ensure that the project would be sustainable and implemented in a cost-efficient manner over the long-term.

4 How effectively were project objectives met?

Table 3. Rating of objectives

Achievement of objectives (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Company financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Project financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good

4.1 What were the objectives and to what extent were they achieved?

Construction of the Glina WWTP (line 1) - Achieved

The Glina WWTP is designed to treat the wastewater flow from the City of Bucharest. Bucharest is listed as major pollution hot-spot along the Danube and was one of the few European capitals without wastewater treatment. Completion of the Glina WWTP is therefore seen as the most important environmental project in Romania and is critical to achieving Romania's commitments to the EU.

The initial design for the treatment of Bucharest's wastewater was developed in 1983–85 and construction commenced in 1985. However, following the overthrow of former dictator Nicolae Ceaușescu and a subsequent ecological accident, the project was abandoned. Discussions with EU-ISPA began in 2000 to restart it and a number of options were considered for the rehabilitation of the wastewater treatment plant as part of a detailed cost-benefit analysis. The Romanian authorities, along with the EU, chose to maximise the use of existing assets. In addition, the City population had grown leading to a larger pollution load, thus requiring a larger plant than the 1983 design. A two-phased approach to construction was selected to allow certain design parameters to be adjusted, thus line 2 will now need to have a larger capacity than line 1.

Design and tendering for the new/rebuild line 1 took place under EU-ISPA procurement procedures. The EBRD was not involved in the review of the Environmental Impact Assessment (EIA), approved in 2004, nor in the decisions regarding the design of the plant. However, it was involved in the tendering process, working with the other lenders on the award and on monitoring construction of the plant. Completion was achieved in April 2011.

Stage 1 includes primary treatment for the total input flow; secondary biological treatment (including nitrogen and phosphorus removal) for 50 per cent of the flow; sludge drying; and treatment facility (including anaerobic digesters) for both lines. While line 2 can be designed to handle the additional load, it is unclear if and how the primary treatment facility and the sludge drying plant will be expanded. The treated portion meets EU environmental standards but more than 50 per cent remains untreated, pending Stage 2.

4.2 How did the project/company perform financially?

The City of Bucharest, as the borrower, is covered in the OPA under project financial performance. The City has maintained a strong financial balance throughout the life of the project, with growth in revenues and budget surplus well above the Board paper projections. Romania and Bucharest have been negatively impacted by the global financial crisis but through 2011, the ratio for current surplus to current revenues was maintained at 26 per cent. In 2005, the City issued a €500 million bond, due payable in 2015. The City also has a €51.5 million district heating loan from EIB and the EBRD (€15 million from the Bank's account) disbursed in 2002 which is currently being repaid. With respect to the water and wastewater sector, as discussed below, tariffs have increased and collection rates remain high.

ANB, as operator of the water and wastewater systems, has constantly performed above appraisal estimates. ANB is not only responsible for water treatment and distribution and the wastewater collection system under their existing PPP, but, via this project, is now responsible for O&M for Glina. ANB anticipated this and has had several years to plan for its role as operator of Glina WWTP. In 2010 the wastewater tariff (including VAT) increased to €0.70 per cubic meter and the combined water and wastewater tariff is now €1.30 per cubic meter, thus the cost of water and wastewater is almost equal. By comparison, in 2011-12, Thames Water in the UK charged £1.17 per cubic meter for water and £0.59 for wastewater.

The economic internal rate of return (EIRR) for this project is estimated at 6.07 per cent, an increase over the appraisal estimate of 3 per cent, which reflects the positive socio-economic benefits accruing from this project. While the financial internal rate of return (FIRR) without the EU grant component is negative (negative 0.39 per cent), it is estimated at 12.44 per cent with the grant, also an increase above the appraisal.

5 How efficiently was the project handled?

Table 4. Efficiency ratings

Bank handling (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Bank investment performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good

5.1 How well did the Banking team handle the project?

Project due diligence

The Banking team worked with the City, EU-ISPA and EIB to structure the project to achieve the expected outcomes. The utility is owned by the City who therefore has a direct interest in the project. The EBRD's decision to loan directly to the City was also politically important. The National and City governments have,

at times, been headed by different political parties which has led to different approaches to project implementation. By bringing the City directly into the financing structure, this potential friction was reduced.

The City is the beneficiary of the loan and, as owner of the utility, was responsible for the project design and construction phase. By assuming responsibility for investments in the wastewater sector, the City was able to blend grant financing with its PPP. ANB took over the operation of the WWTP once commissioned under the terms of the revised concession contract. Thus the PPP objective was met. ANB was involved in the decision process throughout all stages of the project

Project monitoring

Reporting on project monitoring was completed biannually through 2009 and annually thereafter. The most recent completion report notes that the wastewater treatment plant is now fully operational; tariff receipts fully cover operational expenditure and debt service requirements; an escrow agreement is in place for collections; and the concession with ANB has been amended to enable collection of the tariff.

Bank handling – environment

The EU-ISPA provided TC to support preparation of an EIA prior to the EBRD's involvement in the project. Its project information sheet states that:

> "*The rehabilitation of the Bucharest Wastewater treatment Plant at Glina falls under Annex I of the Environmental Impact Assessment (EIA) Directive 85/337/EEC (as amended by 97/11/EC). The EIA process has been completed in 2004 with the issuing of the environmental permit in June 2004 by the competent authority, the Ilfov Environment Protection Agency. Public consultation has been undertaken*."

EIB has stated similarly in its public disclosure document.

Appendix 1 of the Bank's 2003 Environmental Policy states that greenfield wastewater treatments plants with a capacity exceeding 150,000 population equivalent should be screened Category A. Nevertheless, the project was screened Category B/1. The Board was not informed that there had been an EIA nor of the decisions of EU-ISPA or EIB. There would have been little value in further consultation and disclosure but the Bank could have simply accepted the approved EIA, screened the project Category A/1 consistent with the Bank's Policy, posted the PSD for 60 days and then proceeded. The only additional burden would have been the longer period for posting the PSD. This was a missed opportunity to support other EU institutions in promoting EIA best practice.

5.2 How well did the Bank's investment perform?

This is a municipal loan and has fully disbursed. A special tariff was established to repay the loan via an escrow account. The tariff is collected by ANB and the account is administered by the City of Bucharest. The loan is repaying on schedule.

6 What impact did the project have and was it sustainable?

Table 5. Transition and environmental impact ratings

	OPA	EvD
Realised transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, negative)	Good	Good
Potential transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Risk to potential transition impact (Excessive, high, medium, negligible, low)	Low	Low
Overall transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Environmental and social performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Environmental and social change (Outstanding, substantial, some, none/negative)	Some	Some

6.1 Were the expectations for transition realised?

Table 6. Transition impact benchmarks

Objective	Benchmark	Status (achieved, partly achieved, not achieved)
1. Commercialisation	1.1. Tariffs set to cover debt service and operating costs of WWTP	Delayed
2. Private sector involvement	2.1. ANB to operate the WWTP	On track
3. Transfer and dispersion of skills	3.1 Implementation of project management TC	Achieved
	3.2. Transparent procurement in the turnkey contract	Achieved
4. Demonstration effect	4.1 Effective project management: timely and cost completion of WWTP	Partially achieved
5. Setting standards for corporate governance	5.1 Transparent operating arrangements between ANB and Municipality (including amendments to the concession contract.)	Partially achieved

6.2 What was the impact on the environment?

This project was screened Category B/1 under the Bank's 2003 Environmental Policy. A Category A/1 rating would have been consistent with national requirements and with EU-ISPA and EIB screening (see section 5.1.3); however, at the point that the EBRD entered the project, site selection and design decisions had been made and therefore screening the project B/1 reflected the level of further environmental due diligence the EBRD could undertake.

With support from EU-ISPA, an EIA was prepared in 2004, went through public consultation and was approved by the component authorities. Unfortunately, this EIA is not part of the Bank's electronic records nor is it readily available on the web. Stage II is clearly a Category A-level project and will require a new EIA. The existing project was an opportunity to collect baseline data for the follow-on EIA. For a plant (Stage II) that is meant to be designed and built in the next three years, this lack of data could result in a costly delay.

Environmental and social performance

The sponsor has submitted annual updates on implementation of the Environmental Action Plan (EAP) although the last available update via Project Link was posted in 2010 for 2009. The initial EAP focused on construction related concerns. The Environment and Sustainability Department (ESD) conducted a site visit in 2010 during which the EAP was updated, closing out many of the construction related tasks. The updated EAP addressed operation of the plant and recommended a programme to monitor industrial pollution. This is an ambitious undertaking and it is not clear how the Bank will monitor effectiveness of this programme without regular reporting.

Extent of environmental and social change

The Board paper and the OPA define the key environmental benefit to be a reduction of pollution entering the Dambovita River, which flows into the Arges River, which will result in less pollution entering the Danube river (approximately 73 kilometres away) and the Black Sea (approximately 400 kilometres downriver). The volume of flow from the Arges River is less than 10 per cent of the flow in the Danube. It is reasonable to assume that Glina will have a positive impact but the project design did not include any data collection on downstream biodiversity or river quality, nor did it include modelling of impacts. This is a missed opportunity to tell a positive story.

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