DANUBE POLLUTION REDUCTION PROGRAMME

NATIONAL REVIEWS 1998
SLOVENIA

PROJECT FILES

MINISTRY OF ENVIRONMENT AND PHYSICAL PLANNING

in cooperation with the

Programme Coordination Unit
UNDP/GEF Assistance

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Preface

The National Reviews were designed to produce basic data and information for the elaboration of the Pollution Reduction Programme (PRP), the Transboundary Analysis and the revision of the Strategic Action Plan of the International Commission for the Protection of the Danube River (ICPDR). Particular attention was also given to collect data and information for specific purposes concerning the development of the Danube Water Quality Model, the identification and evaluation of hot spots, the analysis of social and economic factors, the preparation of an investment portfolio and the development of financing mechanisms for the implementation of the ICPDR Action Plan.

For the elaboration of the National Reviews, a team of national experts was recruited in each of the participating countries for a period of one to four months covering the following positions:

- Socio-economist with knowledge in population studies,
- Financial expert (preferably from the Ministry of Finance),
- Water Quality Data expert/information specialist,
- Water Engineering expert with knowledge in project development.

Each of the experts had to organize his or her work under the supervision of the respective Country Programme Coordinator and with the guidance of a team of International Consultants. The tasks were laid out in specific Terms of Reference.

At a Regional Workshop in Budapest from 27 to 29 January 1998, the national teams and the group of international consultants discussed in detail the methodological approach and the content of the National Reviews to assure coherence of results. Practical work at the national level started in March/April 1998 and results were submitted between May and October 1998. After revision by the international expert team, the different reports have been finalized and are now presented in the following volumes:

Volume 1:	Summary Report
Volume 2:	Project Files
Volume 3 and 4:	Technical reports containing: - Part A : Social and Economic Analysis - Part B : Financing Mechanisms - Part C : Water Quality - Part D : Water Environmental Engineering

In the frame of national planning activities of the Pollution Reduction Programme, the results of the National Reviews provided adequate documentation for the conducting of National Planning Workshops and actually constitute a base of information for the national planning and decision making process.

Further, the basic data, as collected and analyzed in the frame of the National Reviews, will be compiled and integrated into the ICPDR Information System, which should be operational by the end of 1999. This will improve the ability to further update and access National Reviews data which are expected to be collected periodically by the participating countries, thereby constituting a consistently updated planning and decision making tool for the ICPDR.

UNDP/GEF provided technical and financial support to elaborate the National Reviews. Governments of participating Countries in the Danube River basin have actively participated with professional expertise, compiling and analyzing essential data and information, and by providing financial contributions to reach the achieved results.

The National Reviews Reports were prepared under the guidance of the UNDP/GEF team of experts and consultants of the Danube Programme Coordination Unit (DPCU) in Vienna, Austria. The conceptual preparation and organization of activities was carried out by **Mr. Joachim Bendow**, UNDP/GEF Project Manager, and special tasks were assigned to the following staff members:

- Social and Economic Analysis and Financing Mechanisms: **Reinhard Wanninger**, Consultant
- Water Quality Data: **Donald Graybill**, Consultant,
- Water Engineering and Project Files: **Rolf Niemeyer**, Consultant
- Coordination and follow up: **Andy Garner**, UNDP/GEF Environmental Specialist

The **Slovenian National Reviews** were prepared under the supervision of the Country Programme Coordinator, **Mr. Mitja Bricelj**. The authors of the respective parts of the report are:

- Part A: Social and Economic Analysis: **Mr. Marjan Ravbar**
- Part B: Financing Mechanisms: **Mr. Janez Kimovec**
- Part C: Water Quality: **Mr. Boris Kompare**
- Part D: Water Environmental Engineering: **Mr. Uros Kranjc**

The Ministry of Environment and Physical Planning

The UNDP/GEF Danube Pollution Reduction Programme,
Danube Programme Coordination Unit (DPCU)
P.O.Box 500, 1400 Vienna – Austria
Tel: +43 1 26060 5610
Fax: +43 1 26060 5837

Vienna – Austria, November 1998

Table of Contents

Agricultural Sector

Project 1

Wastewater Treatment Plant of the Farm Podgrad

Date of first setting up: 22.12.98

Project Title

Construction of the Liquid Manure Treatment Plant Podgrad as a turn-key project

Responsible/Legal Body

Dominika Štabuc Starčevič, M.Sc., directress of Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company)

Authority/Company

Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company)

Name

Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company)

Address

Podgrad 38, 9250 Gornja Radgona, Slovenia

Telephone

+386-69-61242

Fax

+386-69-61242

e-mail

Project Target:

Reduction of consequences of immoderate environmental load of Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company), in compliance with the regulations about allowed parameters for discharge to the Mura River (Rule issued by the Government of the Republic Slovenia for nature protection Nr. 355-13-05/90 dated 7th June 1996) and with the current Slovene legislation.

Investment Costs:

The investment costs for the construction of the treatment plant according to the contract dated 28th Oct. 1998 amount to:

SIT 230.000.000 (US$ 1.395.000)

Status of Project:

ongoing project:

- in year 1998 an international public competition for the construction of the treatment plant as a turn-key project was performed (Official Gazette of the Republic of Slovenia, Nr. 24/98, 27th March 1998, page 2645);
- on 28th Oct. 1998 the contract for the construction of the treatment plant was signed with the German company LINDE KCA DRESDEN;
- on 9th Dec. 1998 an outline scheme was finished (by the performer projecting company PIN Ltd., Maribor);
- on the 10th Dec. 1998 an application to the Ministry for Environment and Physical Planning was made, regarding a call for a location visit with treating and working out the outlines for the contents and extent of the documentation for the purpose of issuing a unified building permission.

Language of Project Documents:

Project Title

Full title of the project/programme

Construction of the Liquid Manure Treatment Plant Podgrad as a turn-key project

Investor Details

Authority/Company

Public authority or private company

Name: Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company)

Address: Podgrad 38, 9250 Gornja Radgona, Slovenia

Telephone: +386-69-61242

Fax: +386-69-61242

Contact Persons

Responsible persons for the project ready for additional information

Dominika Štabuc Starčevič, M.Sc., directress of Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company)

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

GLAS 2000, joint-stock company

Partizanska 3-5

2000 Maribor, Slovenia

Tel.: +386 62 229-8640

Fax: +386 62 229-8641

e-mail: glas.2000@siol.net

Contact Person: Tomaž Orešič, B.Sc.

Legal/Financial Status

Legal Status of the investor

Prašičereja Podgrad is registered as a joint stock company at the regional court of Murska Sobota. The base capital of the company amounts to SIT 228.000.000 (US$ 1.380.000).

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The operational fields of the company are breeding of pigs, services for stockbreeding without veterinary service, production of prepared fodder for domestic animals, mediation in sale of agricultural raw material, animals, textile raw materials and semimanufactures, wholesale trade with cereals, seeds and fodder.

The annual income of the company amounts to SIT 800.000.000 (US$ 4.850.000).

The number of people employed in the company is 58.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Pig Farming Podgrad performed in year 1998 an international public competition for the construction of the treatment plant as a turn-key project - Official Gazette of the Republic of Slovenia, Nr. 24/98, 27th March 1998, page 2645. The aim of the international public competition has been to get an overview of technologies used in the world and to get the possibility of quality technical and commercial evaluation on basis of the following criteria:

- proposed technology and meeting the outlet parameters required, with the possibility of later achievement of future parameters as directed by law (ordinance is being prepared)
- price,
- operational costs,
- reference designs.

The documentation of the competition has been bought by 13 companies, 9 tenders from Slovenia, Austria, Germany and the USA arrived in time. The supervisory council of Pig Farming Podgrad nominated an competition commission, consisting of three people, that opened the tenders on 13th May 1998 and that lead later, together with the consulting company, further competition activities. On the basis of known criteria the competition commission chose the German company LINDE KCA DRESDEN to be the performer of the treatment plant, so Pig Farming Podgrad signed with them the contract for the construction of the treatment plant on 28th Oct. 1998.

Institutions/Enterprises beside the Investor

Competition documentation and project management of the construction: GLAS 2000, joint-stock company.

Environmental impact assessment: VG Biro Maribor.

The project documentation is being elaborated by a sub-performer of the company LINDE KCA DRESDEN (projecting company from Slovenia) in compliance with the contract of performing the work as turn-key project.

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
Structural project
Non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The selected technology consists of the following treatment phases of waste liquid manure:

- separation (decanter centrifuge),
- denitrifikation,
- reduction of organic carbon,
- nitrification,
- final treatment,
- long-lasting low aeration of treated water fraction in existing lagoons.

At the moment a project of constructing a system of rinsing the sewers with recurrent liquid manure is going on, whose consequence will be a reduction of stench emission from stables, a reduction of water use and a reduction of liquid manure quantity at the inlet of the treatment plant form present 130 m^3/day to 70 m^3/day.

The term for putting the treatment plant into operation is 12 months from the signing of contract (10 months for finishing the work and two months for putting into operation, test operation and instructing).

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to:
Health benefits
Aquatic environment (fish, etc.)
Recreation
Aestethics
Biodisversity
Economic development
Transboundary effects

Assumed/calculated deterioration without project measures

The procedure of ensuring the outlet parameters for discharge to the Mura River is going to take place in two phases. The reason for the two-phase approach to the legal outlet parameters is the possibility of partial reduction of investment and operational costs on basis of performed measurements upon establishment of stable operation of the treatment plant. In the first phase, the contract between the customer and performer of the treatment plant ensures the achievement of outlet parameters as stated in the rule issued by the Government of the Republic Slovenia for nature protection Nr. 355-13-05/90 dated 7th June 1996.

At the same time, the contract technically and commercially defines the option (chemical/physical treatment), that will ensure the outlet parameters stated in the Order on emission of substances from sources of pollution (Official Gazette of the Republic of Slovenia, Nr. 35/96) and in the Order on emission of substances at evacuation from facilities of mass stockbreeding, the latter being formed from proposed text. The option of chemical/physical treatment will be realized after establishment of regular operation of the treatment plant and after precise measurements of load of the Mura River with the liquid phase from Pig Farming Podgrad.

Status of Project Preparation

Description of the actual status of project studies and reports:
Prefeasibility level
Feasibility level
Application/license
Bidding/selection of construction company

Project documents/summary in English (y/n)

An outline scheme for construction of the treatment plant has been finished.

The environmental impact assessment and the location documentation are being elaborated.

A call of a prelocation visit with treating and working out the outlines for the contents and extent of the documentation for the purpose of issuing a unified building permission is under preparation.

Technology Proposed

Mechanical separation of solid substance with overflow, anaerobic/aerobic treating of water fraction with reduced quantity of solid substance by denitrification and nitrification, by the process of aerobic-heterotropicly activated sediment and separation of excess bio-sediment that is accumulated in the basin.

Ownership of Project Site

Status of proprietary rights

The area that is the subject of intervention is located in the region of the settlement Podgrad and is managed by the planning and town planning conditions of the community of Gornja Radgona (Official Gazette of the Republic of Slovenia, Nr. 7/95). The entire location of the project is in property of Prašičereja Podgrad d.d. (Pig Farming Podgrad, joint-stock company).

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Public and people involved by the project respectively will be included in the prelocation visit with treating, and later at public hearings. Because of general public interest in eliminating the sources and consequences of immoderate environmental load caused by Pig Farming Podgrad, no opposition of the public regarding the project realization is expected.

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

The environmental impact assessment is being prepared (the contract with VG Biro Maribor has been signed).

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The treated water fraction is discharged to the Mura River, a boundary river between Austria and Slovenia.

Primary Effects of Project

Description of the effects of the project on different geographical levels

In addition to the immoderate environmental load of the Mura River with waste liquid manure, the main reason for the beginning of sanitation programme has been the stench emission, in the area of Podgrad as well as immoderately to Austria (Bad Radkersburg to the north of the Mura River).

The stench emissions are going to be significantly reduced by the construction of the treatment plant. The basin for collection of waste liquid manure will be closed, the air will be pumped out and used for aeration in the basin for the nitrification process. The deposition in existing (sanitized) lagoons will not cause additional stench emissions since the liquid phase had already been biologically treated, the purpose will only be an additional reduction of COD.

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
During construction period
During operation period
Other economic benefits

It is difficult to evaluate the economic project benefits directly. The written order of the Ministry for Environment and Physical Planning and (present and future) regulations about legal substance emission from sources of pollution impose the Pig farming Podgrad to perform a sanitation programme. In case the programme is not finished, the farm might not have the possibility of further performing the pig farming.

The exempting from the ecological tax represents a direct economic benefit for Pig farming Podgrad.

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

No EIRR has been calculated.

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

Real investment costs for construction of the treatment plant according to the contract dated 28th Oct. 1998 amount to:

SIT 230.000.000 (US$ 1.395.000).

The price is valid for turn-key project, including project documentation and spare parts for a 2-year operation.

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

The approximate annual operational costs, calculated when technically and commercially evaluating the tenders in the competition procedure, amount to:

SIT 7.000.000 (US$ 42.000). The usual spare parts for a 2-year operation are included in the investment costs (6.1).

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

No FIRR has been calculated.

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 2

Wastewater Treatment Plant Farm Nemščak in Jezera of Ižakovci

Project Title

Reconstruction of the Wastewater Treatment Plant for Pig Farmings Nemščak and Jezera of Ižakovci.

Responsible/Legal Body

Agriculture Management Rakičan (Kmetijsko Gospodarstvo Rakičan d.d.)
Mirko Horvat, B.Sc., managing director

Authority/Company

Name

Agriculture Management Rakičan (Kmetijsko Gospodarstvo Rakičan d.d.)

Address

Lendavska 5, 9 000 Murska Sobota, Slovenia

Telephone

+386-69-21-200

Fax

+386-69-22-185

e-mail

Project Target:

Treatment Wastewater of Pig Farm Agriculture Management Rakičan

Investment Costs:

SIT 900.000.000,00 (US$ 5.350.773)

Status of Project:

Acquirement Permit of construction.

Present of Project:

Execution of Phase 1 (recycling washing out channel)

Feature of Project:

Phase 2 - biogas and anaerobic treatment
Phase 3 - aerobic treatment and biological lagoon

Project Title

Full title of the project/programme

Reconstruction of Wastewater Treatment Plant for Pig Farmings Nemščak and Jezera of Ižakovci

Investor Details

Authority/Company

Public authority or private company

Name

Agriculture Management Rakičan (Kmetijsko Gospodarstvo Rakičan d.d.)

Address

Lendavska 5, 9 000 Murska Sobota, Slovenia

Telephone: +386-69-21-200

Fax: +386-69-22-185

Contact Persons

Responsible persons for the project ready for additional information

Mirko Horvat, B.Sc., managing director

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

- Šefer Conzalt, Chemical Institute,1 000 Ljubljana
- ZEU Murska Sobota

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The operational fields of the company are breeding of pigs, agriculture

The annual income of the company amounts to SIT 3.800.000.000 (US$ 22.592.152).

The number of people employed in the company is 355.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)

Wastewater Treatment according to the Decree on the Emission of Wastewater from greater pig farming.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company

Final Projects designed, Acquisition of the permit of construction, Contract of construction prepared for signature.

Project documents/summary in English (y/n)

Yes.

Technology Proposed

Special requirements

Ownership of Project Site

Status of proprietary rights

Acquire

Special Project Items

Additional remarks on project description

In accordance with legislation

Project Effects and Interactions

Public's Expression of Interest

- description of public participation/involvement measures
- attitude of concerned people to the project
- results of social acceptance assessment

Environmental Impact Assessment

- planned
- in progress
- finished/completed
- accepted
- rejected or not accepted

Elaborated

Sensitivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project:

Mura River

Primary Effects of Project

Description of the effects of the project on different geographical levels

International

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Taxation

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

No

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

SIT 900.000.000 (US$ 5.600.000).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

SIT 20.000.000 (US$ 118.906).

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Non lucrative, except production of electricity for Wastewater Treatment Plant.

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency (US $)	Requested Currency	Non-secured Currency
(1) Equity of project owner	1.783.590		
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget	2.378.121		
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget	1.189.060		
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Industrial Sector

Project 3

Wastewater treatment plant Brewery Laško

Project Title
Wastewater treatment plant Brewery Laško

Responsible/Legal Body
Pivovarna Laško (Laško Brewery)

Authority/Company
Pivovarna Laško (Laško Brewery)

Name
Franc Rojnik

Address
Trubarjeva 28, 3270 Laško

Telephone
+386 734 800

Fax
+386 731 817

e-mail

Project Target:
Reduction in quantity of wastewater, keep the production of excess sludge as low as possible, use of biogas for water heating.

Investment Costs:
The estimated costs of measures to reduce the quantity of wastewater and for the construction of pretreatment are DM 4,2 mio or SIT 399 mio (US$ 2,6 mio).

The estimated costs for the construction of the second stage of the biological treatment plant are DM 17 mio or SIT 1615 mio (US$ 10,6 mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

Investor Details

Authority/Company

Public authority or private company

Name: Pivovarna Laško (Laško Brewery)

Address: Trubarjeva 28, 3270 Laško

Telephone: +386 734 800

Fax: +386 731 817

Contact Persons

Responsible persons for the project ready for additional information

Franc Rojnik

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The main operational fields of the company is beer production (ca. 1,2 mio h/year), production of soft drinks and bottling of water.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The construction of anaerobic treatment and the use of biogas for energetic purposes, outlet to an aerobic biological treatment plant at a different location that treats also municipal wastewater from Laško town is recommended.

The construction of the entire treatment at the factory site is not possible because of limited space, and it is not reasonable because of treatment of municipal wastewater.

There is ca. 4.200 m^3/day of wastewater produced, the load is 7.000 kg COD/day.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/licence
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Flotation, anaerobic UASB plant, post aeration, air treatment, outlet to a biological treatment plant at a different location (pressure pipeline);

excess sludge from pretreatment is pumped to the second stage of the biological treatment plant, where it is machine thickened and carted away to the final disposition site;

pretreatment: reduction of COD 70-85%, reduction of BOD5 75-90%.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs of measures to reduce the quantity of wastewater and for the construction of pretreatment are DM 4,2 mio or SIT 399 mio (US$ 2,6 mio).

The estimated costs for the construction of the second stage of the biological treatment plant are DM 17 mio or SIT 1615 mio (US$ 10,6 mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 4

Wastewater Treatment Plant of the Brewery Union, Ljubljana

Project Title
Wastewater treatment plant of the Brewery Union, Ljubljana

Responsible/Legal Body
Pivovarna Union (Brewery Union)

Authority/Company
Pivovarna Union (Brewery Union)

Name
Mr. Ulčar, B.Sc.

Address
Pivovarniška ulica 2, 1000 Ljubljana

Telephone
+386 61 1717217

Fax
+386 61 1717302

e-mail

Project Target:
Reduction in quantity of wastewater, keep the production of excess sludge as low as possible, use of biogas for water heating.

Investment Costs:
The estimated costs of measures to reduce the quantity of wastewater and for the construction of pretreatment are DM 6,3 mio or SIT 598,5 mio (US$ 3,9 mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

Investor Details

Authority/Company

Public authority or private company

Name: Pivovarna Union **(**Brewery Union)

Address: Pivovarniška ulica 2

Telephone: +386 61 1717217

Fax: +386 61 1717302

Contact Persons

Responsible persons for the project ready for additional information

Mr. Ulčar, B.Sc.

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The main operational fields of the company is beer production (ca. 1,1 mio h/year), production of soft drinks and bottling of water. It has its own drinking water intake.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Ctakeholders
Location
Site
Existing use of site

The construction of anaerobic treatment and the use of biogas for energetic purposes, outlet to the central treatment plant Ljubljana is recommended.

The construction of the entire treatment at the factory site is not possible because of limited space.

There is ca. 4.500 m^3/day of wastewater produced, the load is 9.500 kg COD/day.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Flotation, anaerobic UASB plant, post aeration, air treatment, outlet to public sewage;

excess sludge is machine thickened and carted away to the final disposition site;

reduction of COD 70-85%, reduction of BOD5 75-90%.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs of measures to reduce the quantity of wastewater and for the construction of pretreatment are DM 6,3 mio or SIT 598,5 mio (US$ 3,9 mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 5

Wastewater Treatment Plant of the Paper Factory ICEC Krško

Project Title
Wastewater treatment plant of the Paper Factory ICEC Krško

Responsible/Legal Body
Paper Factory ICEC Krško

Authority/Company
Paper Factory ICEC Krško

Name
Justina Šepetavec

Address
Tovarniška 18, 8270 Krško

Telephone
+386 608 21 110

Fax
+386 608 22 077

e-mail

Project Target:
Reduction in quantity of unsolved substances in wastewater, reduction of COD and BOD5.

Investment Costs:
The estimated costs for the construction of the treatment plant are DM 28 mio or SIT 1660 mio (US$ 17,4 mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

Investor Details

Authority/Company

Public authority or private company

Name: Paper Factory ICEC Krško

Address: Tovarniška 18, 8270 Krško

Telephone: +386 608 21 110

Fax: +386 608 22 077

Contact Persons

Responsible persons for the project ready for additional information

Justina Šepetavec

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The main operational fields of the company are paper and cellulose production.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The construction of physical-chemical treatment (flotation), anaerobic pretreatment for highly loaded water, aerobic biological treatment for pretreated highly loaded water and low loaded water is recommended.

The construction of the anaerobic pretreatment in the factory, the construction of aerobic biological stage outside of the factory area.

There is 47.500 m^3/day of wastewater produced, the load is 17.000 kg BOD5/day.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

DAF flotation, anaerobic UASB plant, air treatment;

aerobic sequential biological treatment plant;

excess sludge from flotation, from biological pretreatment and treatment is machine thickened and carted away to the final disposition site.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the construction of the treatment plant are DM 28 mio or SIT 1660 mio (US$ 17,4 mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds / requirements			

Project 6

Wastewater Treatment Plant of the Paper Factory Sladkogorska (or Paloma)

Project Title
Wastewater treatment plant of the Paper Factory Sladkogorska (or Paloma)

Responsible/Legal Body
Tovarna papirja Paloma (Paper Factory Paloma)

Authority/Company
Tovarna papirja Paloma (Paper Factory Paloma)

Name
Andrej Kokalj

Address
Sladki Vrh 1, 2213 Sladki Vrh

Telephone
+386 62 644460

Fax
+386 62 644458

e-mail

Project Target:
Reduction in quantity of unsolved substances in wastewater, the use of anaerobic treatment is not appropriate because of low water temperature.

Investment Costs:
The estimated costs for the construction of the treatment plant are DM 4,8 mio or SIT 456 mio (US$ 3,0 mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

Investor Details

Authority/Company

Public authority or private company

Name: Tovarna papirja Paloma (Paper Factory Paloma)

Address: Sladki Vrh 1, 2213 Sladki Vrh

Telephone: +386 62 644460

Fax: +386 62 644458

Contact Persons

Responsible persons for the project ready for additional information

Andrej Kokalj

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The main operational field of the company is paper production.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The construction of physical-chemical treatment (flotation) and aerobic biological treatment is recommended.

The construction of the entire treatment at the factory site.

There is 9.600 m^3/day of wastewater produced, the load is 5.500 kg COD/day.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/licence
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

DAF flotation, aerobic sequential biological treatment plant;

excess sludge from flotation and from biological pretreatment is machine thickened and carted away to the final disposition site.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the construction of the treatment plant are DM 4,8 mio or SIT 456 mio (US$ 3,0 mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 7

Wastewater Treatment Plant Pomurka Murska Sobota

Project Title
Wastewater Treatment Plant Pomurka Murska Sobota
Responsible/Legal Body
Pomurka Murska Sobota (meat processing)
Mr. Benko Alojz
Authority/Company
Name
Pomurka Murska Sobota (meat processing)
Address
Lendavska 11, 9 000 Murska Sobota
Telephone
+386-69-32-440
Fax
+386-69-22-007
e-mail
Project Target:
Investment Costs:
Status of Project:
Language of Project Documents:

Remark: Treatment of wastewater on Wastewater Treatment Plant Murska Sobota!

Project 8

Wastewater Treatment Plant Leather Processing Industry of Vrhnika

Project Title

Wastewater Treatment Plant Leather processing industry of Vrhnika

Responsible/Legal Body

Mrs. Barbka Klemenc

Authority/Company

Name

Leather processing industry of Vrhnika

Address

Tržaška 31, 1 360 Vrhnika

Telephone

+386-61-754-211

Fax

+386-61-756-128

Project Target:

Investment Costs:

Status of Project:

Remark: Leather processing industry of Vrhnika is in reorganization process and can not collaborate on this Project.

Municipal Sector

Project 9

Wastewater Treatment Plant Municipal Celje

Date of first setting up:

Project Title

Central Wastewater Treatment Plant Celje – outline solution with new input data

Responsible/Legal Body

VODOVOD-KANALIZACIJA d.o.o. (Waterworks-sewage Ltd.)

Authority/Company

VODOVOD-KANALIZACIJA d.o.o. (Waterworks-sewage Ltd.)

Name

Marko Planinšek, B.Sc.

Address

Lava 2a, 3000 Celje

Telephone

+386-63-4250315 (4250301)

Fax

+386-63-451543

e-mail

Project Target:

Disburdening of precipitation water, complete treatment including phosphorus (it is not yet clear, if the treatment of phosphorus will be necessary).

Investment Costs:

The estimated costs of construction are DM 19 Mio or SIT 1805 Mio (US$ 11,8 Mio). The inlet canal and the disburdening facility for precipitation water are not included.

Status of Project:

The finished outline solution will be used for checking the location of the wastewater treatment plant and will be used as a basis for composition of the environmental impact assessment.

Project Title

Full title of the project/program

Central Wastewater Treatment Plant Celje – outline solution with new input data

Investor Details

Authority/Company

Public authority or private company

Name: VODOVOD-KANALIZACIJA d.o.o. (Waterworks-sewage Ltd.)

Address: Lava 2a, 3000 Celje

Telephone: +386-63-4250315 (4250301)

Fax: +386-63-451543

e-mail:

Contact Persons

Responsible persons for the project ready for additional information

Marko Planinšek, B.Sc.

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Planning/consulting
Construction
Licensing/monitoring

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

Sewage canal to the foreseen location of the treatment plant has to be built, disburdening of precipitation water has to be arranged. The treatment plant should be built in two phases (first 70.000 PE, then enlargement to 85.000 PE).

Parameters for the final situation: rainless inlet: 29.000 m^3/day, pollution load: 5.110 kg BOD5.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/licence
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Mechanical-biological treatment plant with separate treatment of excess sludge. A sequential biological treatment plant after the CAST method with nitrification and denitrification and in the end phase with combined chemical-biological treatment of phosphorus is foreseen.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

- planned
- in progress

in progress

- finished/completed
- accepted
- rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs of construction are DM 19 Mio or SIT 1805 Mio (US$ 11,8 Mio). The inlet canal and the disburdening facility for precipitation water are not included.

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 10

Wastewater Treatment Plant Municipal Črnomelj

Project Title

Wastewater treatment plant municipal Črnomelj
WWTP Črnomelj

Responsible/Legal Body

Občina Črnomelj (Community Črnomelj)

Authority/Company

Občina Črnomelj (Community Črnomelj)

Name

Major Andrej Fabjan

Address

Trg svobode 3, 8340 Črnomelj

Telephone

+386 68 52040

Fax

+386 68 51117

e-mail

Project Target:

Finishing the sewage, disburdening of precipitation water, completion of 2nd treatment phase (repeated biological treatment), phosphorus treatment will probably not be necessary, construction of a facility for machine sludge thickening.

Investment Costs:

The estimated costs for the reconstruction and enlargement of the treatment plant, together with construction of precipitation basin, are DM 3,7 Mio or SIT 323 Mio (US$ 2,1 Mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

WWTP Črnomelj

Investor Details

Authority/Company

Public authority or private company

Name: Občina Črnomelj (Community Črnomelj)

Address: Trg svobode 3, 8340 Črnomelj

Telephone: +386 68 52040

Fax: +386 68 51117

Contact Persons

Responsible persons for the project ready for additional information

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The first phase with capacity 5.000 PE has been constructed: aerobic stabilization with nitrification/denitrification and silos for stabilized sludge that is thickened on a mobile facility for machine sludge thickening. A part of the Črnomelj town is not connected to the treatment plant because of lack of sewage. The parameters of final load are: the rainless inlet is about 2.500 m3/day, the pollution load 600 kg BOD5.

The treated water is discharged to Lahinja.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/licence
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Mechanical pre-treatment, aerobic sludge stabilization with intermittent nitrification/denitrification, silos for sludge.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

- planned
- in progress
- finished/completed
- accepted
- rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The Lahinja River has relatively bad hydrological properties.

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the reconstruction and enlargement of the treatment plant, together with construction of precipitation basin, are DM 3,7 Mio or SIT 323 Mio (US$ 2,1 Mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 11

Wastewater Treatment Plant Municipal Krško

Project Title
Central Wastewater Treatment Plant of town Krško – outline scheme
Responsible/Legal Body
OBČINA KRŠKO (Community of Krško)
Authority/Company
OBČINA KRŠKO (Community of Krško)
Name
Darko Anžiček
Address
Cesta krških žrtev 14, 8270 Krško
Telephone
+386 608 22771
Fax
+386-608-21995
e-mail
Project Target:
see enclosure
Investment Costs:
Status of Project:

Project Title

Full title of the project/programme

Central Wastewater Treatment Plant of town Krško – outline scheme

Investor Details

Authority/Company

Public authority or private company

Name: OBČINA KRŠKO (Community of Krško)

Address: Cesta krških žrtev 14, 8270 Krško

Telephone: +386-608-22771

Fax: +386-608-21995

e-mail:

Contact Persons

Responsible persons for the project ready for additional information

Darko Anžiček

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Planning/consulting
Construction
Licensing/monitoring

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed /calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Working out the location plan

Technology Proposed

see enclosure

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

ENCLOSURE

Title:	Central wastewater treatment plant of town Krško – outline scheme
Project Nr.:	6K747
Date:	December 1998
Responsible project manager:	Dušan Zgonik, B.Sc.
Responsible designer:	Radoslav Vodopivec, B.Sc.

Short summary:

The Community of Krško wants to solve the problems of collecting and treating wastewater of Krško town including industry in next time period. The Sava River through Krško is first of all polluted because of all the sewage outlets, and particularly that of the factory ICEC. For this reason and because of the necessity to lift the situation of the Sava River to a higher quality class, it is necessary to complete the existing sewage system and to construct a wastewater treatment plant, and to optimize the operation of existing facilities.

The outline scheme showed that there are two concepts of wastewater treatment for the Krško town and for the factory ICEC.

After the first treatment concept the wastewater from ICEC is treated separately from all other industrial waste water and wastewater from town Krško.

The second treatment envisages a common treatment of municipal wastewater from Krško town and wastewater from ICEC.

The analysis of investment and operational costs as well as other important viewpoints (treatment of totally different kinds of waste water, time spent on adjustments of the construction, problems with handling the excess sludge,...) showed that it is reasonable to proceed as follows:

1. As pre-treatment of highly concentrated technological wastewater from cellulose production an anaerobic pre-treatment and gas production should be envisaged. Since it is possible to use the gas energetically, it is reasonable to perform the anaerobic pre-treatment in the factory itself.
2. It is reasonable to realize the treatment of municipal wastewater and final treatment of wastewater from ICEC at a biological treatment on two separate treatment plants, but at a common location, because of common functions (common infrastructure, personnel and monitoring as well a common treatment of the sludge produced).

For municipal wastewater a construction of the central wastewater treatment plant Krško with capacity ca. 20000 E (5.500 m^3/day) is foreseen. For the ICEC biological wastewater treatment plant the foreseen capacity is 110000 E (47.680 m^3/day).

The amount of investment is SIT 1700 million, ca. 30% the central treatment plant and ca. 70% the biological treatment plant for waste water from ICEC.

Project 12

Wastewater Treatment Plant Municipal Lendava

Project Title
Wastewater treatment plant municipal Lendava
Responsible/Legal Body
Občina Lendava (Community Lendava)
Authority/Company
Občina Lendava (Community Lendava)
Name
Kasaš Štefan
Address
Trg ljudske pravice 5, 9220 Lendava
Telephone
+386 69 789400
Fax
+386 69 75252
e-mail
Project Target:
Complete treatment including phosphorus because of bad recipient.
Investment Costs:
The estimated costs for the construction are DM 8 Mio or SIT 760 Mio (US$ 5,0 Mio).
Status of Project:
Language of Project Documents:

Project Title

Full title of the project/programme

WWTP Lendava

Investor Details

Authority/Company

Public authority or private company

Name: Občina Lendava (Community Lendava)

Address: Trg ljudske pravice 5, 9220 Lendava

Telephone: +386 69 789400

Fax: +386 69 75252

Contact Persons

Responsible persons for the project ready for additional information

Kasaš Štefan

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The sewage network is only partly constructed, a common treatment plant for municipal water and for pre-treated technological water form factory Lek is foreseen.

The rainless inlet is about 5.500 m^3/day, the pollution load 2.500 kg BOD5.

The treated water is discharged to Ledava.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Construction of the whole line of water and sludge treatment: biological stage, chemical phosphorus treatment, machine sludge thickening.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The Ledava River has bad hydrological properties, the river is transboundary.

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the construction are DM 8 Mio or SIT 760 Mio (US$ 5,0 Mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 13

Wastewater Treatment Plant Municipality Ljubljana

Project Title

Wastewater treatment plant municipality Ljubljana

Responsible/Legal Body

Vodovod – Kanalizacija Ljubljana (Waterworks-sewage Ltd.)

Authority/Company

Vodovod – Kanalizacija Ljubljana (Waterworks-sewage Ltd.)

Name

Mr. Anton Krajnc

Address

Krekov Trg 10, 1000 Ljubljana

Telephone

+386 61 1729400

Fax

+386 61 314681

e-mail

Project Target:

Step-by-step approach to legislation requirements. That means that nitrogen compounds have to be treated as well. It is not clear, if phosphorus elimination will be necessary at all since the present phosphorus value is low and it is expected that the phosphorus value after ca. 30% reduction in the biological stage will not exceed the allowed parameters.

Investment Costs:

The estimated costs for the construction of the second phase are DM 70 Mio or SIT 6650 Mio (US$ 43,5 Mio).

The estimated costs for the construction of the entire (all three phases) treatment plant (the value of existing facilities is not taken into account) are DM 110 Mio or SIT 10450 Mio (US$ 68,3 Mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

WWTP Ljubljana

Investor Details

Authority/Company

Public authority or private company

Name: Vodovod – Kanalizacija Ljubljana (Waterworks-sewage Ltd.)

Address: Krekov Trg 10, 1000 Ljubljana

Telephone: +386 61 1729400

Fax: +386 61 314681

Contact Persons

Responsible persons for the project ready for additional information

Mr. Anton Krajnc

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The disburdening of precipitation water is not regulated. There is a variant of construction of a precipitation basin before the central treatment plant, but it is still in the phase of studies. The first phase of the treatment plant (mechanical treatment) is finished. There are preparation works for the 2nd phase going on (nitrification and anaerobic sludge treatment with machine thickening). In the 3rd phase the nitrification and denitrification is arranged, in the 4th phase combined chemical-biological phosphorus treatment is arranged if necessary.

The rainless inlet is about 150.000 m^3/day, the pollution load 36.000 kg BOD5.

The treated water is discharged to Ljubljanica.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Construction of the whole line of water and sludge:

Primary sedimentation tanks, biological stage, combined chemical-biological phosphorus treatment, space reservation for sand filters (far future – barraging the Sava River for hydroelectric power stations);

Pre-thickening of biological sludge, anaerobic treatment of sludge in digesters, machine sludge thickening, reserve for construction of sludge drying, complete line of biogas.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the construction of the second phase are DM 70 Mio or SIT 6650 Mio (US$ 43,5 Mio).

The estimated costs for the construction of the entire (all three phases) treatment plant (the value of existing facilities is not taken into account) are DM 110 Mio or SIT 10450 Mio (US$ 68,3 Mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 14

Wastewater Treatment Plant Municipality Ljutomer

Project Title

Central Wastewater Treatment Plant

Responsible/Legal Body

Authority/Company

Občina Ljutomer (municipality Ljutomer)

Name

Mayor of the Ljutomer Commune, Mr. Jožef Špindler

Address

Vrazova 1, 9420 Ljutomer, Slovenia

Telephone

+386-69-849044

Fax

+386-69-81610

e-mail

Project Target:

1. Location plan for the Central wastewater treatment plant Ljutomer
2. Outline scheme for the Central wastewater treatment plant Ljutomer
3. It is necessary to get the design for building permission and design for construction

Investment Costs:

Construction work: 234.831 SIT (US$ 1.535)

Machine equipment and installation: 160.169 SIT (US$ 1.047)

Electrical installations: 40.000 SIT (US$ 261)

Total: 435.000 SIT (US$ 2.843)

Status of Project:

Ongoing project, the location plan is being acquired. It is necessary to get the project documentation (design for building permission, design for construction) for the Central wastewater treatment plant.

Language of Project Documents:

Project Title

Full title of the project/programme

Location plan for the Central Wastewater Treatment Plant Ljutomer

Investor Details

Authority/Company

Public authority or private company

Name: Občina Ljutomer (Community Ljutomer)

Address: Vrazova 1, 9420 Ljutomer, Slovenia

Telephone: +386-69-849044

Fax: +386-69-81610

Contact Persons

Responsible persons for the project ready for additional information

Andreja Torič, B.Sc.

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Komunalno stanovanjsko podjetje Ljutomer, Ormoška 3/II, Ljutomer, Mr. Vili Vrbnjak

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

The commune budget in year 1998 was 1.244.140.384 SIT.

Number of people employed: 27.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Project activities are performed in the frame of the section GJS, environment and physical planning of the Ljutomer Commune, where 4 people are employed.

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

Technical description of main project components:

- location of the Central wastewater treatment plant Ljutomer
- outline scheme
- settlement of municipal infrastructure

Main elements for reduction of load of water:

- quality improvement of surface water and underground water
- development of life and in the Ščavnica River and development of vegetation in the surroundings
- improvement of air quality in Ljutomer (because of new sewage network).

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Description of project targets and its contribution to reduction of load to the Danube Basin regarding:

- health improvement – reduction of air and surface water pollution -> improvement of groundwater quality, the only source of drinking water on the treated area
- water environment (fish, etc.) – water quality improvement of the Ščavnica and Kostanjevica River, development of life
- recreation

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

No

Outline studies:

- wastewater management in the Ljutomer Commune, 1993
- environmental impact assessment because of construction of the Central wastewater treatment plant Ljutomer
- Measurements and analysis of industrial wastewater of the Ljutomer town.

Technology Proposed

For the industrial treatment plant of the Leather factory Konus Ljutomer: putting in order the separation of solid particles, increase of egalization, reconstruction of coagulation, flokuation and filtration, construction of a biofilter for air treatment.

Ownership of Project Site

Status of proprietary rights

The Ljutomer Commune after sales contract from 1998.

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
public hearings

Attitude of concerned people to the project
not interested

Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
in year 1998

Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The Ščavnica River belongs to the 4th quality class. The dominant part of industrial wastewater and mixed municipal wastewater are not adequately treated and are discharged to the river.

The location of the wastewater treatment plant is on the right bank of the Ščavnica River, under the confluence of Ščavnica and Ljutomerski razbremenilnik. Ljutomer is situated to the west of it, the settlements Pristava and Stročja vas to the east and to the south respectively.

Primary Effects of Project

Description of the effects of the project on different geographical levels

Local: The central wastewater treatment plant will be constructed for the region of the Ljutomer town and for the settlements Stročja vas, Cven, Mota, Noršinci, Babinci, Sp. Kamenščak.

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

No

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
SIT 6.016.480 (US$ 39.000)

- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 15

Wastewater Treatment Plant Municipality Maribor

Date of first setting up: 10.10.98

Project Title

Construction of the Central Wastewater Treatment Plant Maribor and the Concession for the Treatment of Wastewater in Maribor

Responsible/Legal Body

Municipality of Maribor (Mestna občina Maribor)

Authority/Company

Municipality of Maribor (Mestna občina Maribor)

Name

Danilo Šalamon, B.Sc.

Address

Heroja Staneta 1, SI-2000 Maribor

Telephone

+386-62-2201419

Fax

+386-62-224815

e-mail

Project Target:

Collection and treatment of wastewater from Maribor and from its suburbs

Investment Costs:

5,5 milliard SIT (excl. capital costs)

Status of Projekt:

Ongoing project, in phase of getting the location permission (LD) and working out the Design for Building Permission (PGD)

Language of Project Documents:

English, Slovenian

Project Title

Full title of the project/programme

Construction of the Central Wastewater Treatment Plant Maribor and the Concession for the Treatment of Wastewater in Maribor

Investor Details

The concession has been given to Aquasystems d.o.o., that appears as the investor. The Community of Maribor will cover the costs of the investment by the wastewater price per m3 for the duration of the concession.

Authority/Company

Public authority or private company

Name: Aquasystems d.o.o.

Address: Prešernova 34, SI-2000 Maribor

Telephone: +386-62-28337

Fax:

e-mail:

Contact Persons

Responsible persons for the project ready for additional informations

Danilo Šalamon, B.Sc., Municipality of Maribor

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Uroš Krajnc, D.Sc., Ecological Engineering Institute (Inštitut za ekološki inženiring d.o.o.)

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Planning/consulting
Ecological Engineering Institute (Inštitut za ekološki inženiring d.o.o.)

Construction
Licensing/monitoring
Health Protection Institute – Environment Protection Institute (ZZV IVO), Nigrad

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The project involves a 22 year concession for the financing, design, construction, operation and maintenance of a Wastewater Treatment Plant (WWTP) at DOGOSE, capable of treating a sewage flow of 190,000 population equivalent, built in 3 sequential phases.

Phase 1 - within 2.0 years:

lifting station (influent) and mechanical treatment

Phase 2 - within 4.0 years:

secondary treatment carbon removal

Phase 3 - within 8.0 years:

phosphorus and nitrogen removal

All partially treated wastewater from phase 1 shall be pumped to the hydrochannel, or exceptionally discharged into the river Drava. The maximum pumping station to the hydrochannel is 7.050 m3/hr.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
Working out the location documentation and the design for building permission

- application/license
- bidding/selection of construction company
Concession contract

Project documents/summary in English (y/n)
Yes

Technology Proposed

Standard element:
The design is based on activated sludge process.

Special features:
Flotation of excess sludge (DAF Unit)

Ownership of Project Site

Status of proprietary rights
The Municipality of Maribor is the owner.

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment
- regular information of public, operative and common decisions with representatives of town quarters, visits of existing facilities
- in case of contentment of local municipal problems the relation of the concerned people to the project is positive

Environmental Impact Assesment

Planned
In progress
Finished/completed
completed

Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project
flood area

Primary Effects of Project

Description of the effects of the project on different geographical levels
- Local: improvement of the Drava River quality between Maribor and Ptuj
- Regional/National improvement of the Drava River quality between Maribor and Croatian border
- International/Transboundary: Improvement of the quality oh the hole Drava River, the Danube River and the Black Sea

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
Presence of national producers in an extent of 70% of work

- during operation period
National experts employed

Other economic benefits
Stimulation of the producing part of economy, in particular electrical machine industry and construction

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
57,6 million DEM

Allocation of capital cost:
- Land
2,9 million DEM

- construction and machinery
51 million DEM

- planning and supervision
3,62 million DEM

- Total cost
On an annual basis
Year of cost estimate
1998

Nature of cost estimate (preliminary, adequate, etc.)
adequate

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
70 SIT/m3 for 13,5 million m3 and period of 22 years

Year of cost estimate
1997

Nature of cost estimate (preliminary, adequate, sources of information, ...)
preliminary/adequate

Estimate of Revenues

Expected annual revenues (in real terms)
of concessionaire is unknown

Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municiapal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 16

Wastewater Treatment Plant Municipality Metlika

Project Title
Central Wastewater Treatment Plant Metlika

Responsible/Legal Body
Občina Metlika (Community Metlika)

Authority/Company
Občina Metlika (Community Metlika)

Name
Slavko Dragovan

Address
Mestni trg 24

Telephone
+386 68 63100

Fax
+386 68 58136

e-mail

Project Target:
Reconstruction and enlargement of the existing nitrogen treatment plant.

Investment Costs:
The estimated costs for the reconstruction and enlargement of the treatment plant, together with construction of precipitation basin, are DM 2,5 Mio or SIT 237,5 Mio (US$ 1,6 Mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

Central Wastewater Treatment Plant Metlika

Investor Details

Authority/Company

Public authority or private company

Name: Občina Metlika (Community Metlika)

Address: Mestni trg 24

Telephone: +386 68 63100

Fax: +386 68 58136

Contact Persons

Responsible persons for the project ready for additional information

Slavko Dragovan

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The existing treatment plant is designed for treatment of carbon compounds only, it is old and hydraulically overloaded. The technological water from the factory Beti that are still connected to the treatment plant at present will be redirected to the industrial treatment plant of factory Beti.

The parameters of final load are: the rainless inlet is about 1.400 m3/day, the pollution load 270 kg BOD5. The treated water is discharged to the Sušica creek and then to the transboundary river Kolpa.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Construction of final disburdening facility and precipitation basin, construction of mechanical pre-treatment, modification and enlargement of the biological stage, construction of a facility for machine sludge thickening.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the reconstruction and enlargement of the treatment plant, together with construction of precipitation basin, are DM 2,5 Mio or SIT 237,5 Mio (US$ 1,6 Mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 17

Wastewater Treatment Plant Municipality Murska Sobota

Project Title
Wastewater treatment plant municipality Murska Sobota

Responsible/Legal Body
Komunala d.o.o.

Authority/Company
Komunala d.o.o.

Name
Zver Boštjan

Address
Kopališka ul. 2, 9000 Murska Sobota

Telephone
+386 69 31600

Fax
+386 69 31401

e-mail

Project Target:
Disburdening of precipitation water, complete treatment, including phosphorus because of bad recipient.

Investment Costs:
The estimated costs for the construction of the entire wastewater treatment plant are DM 16 Mio or SIT 1520 Mio (US$ 9,9 Mio).

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

WWTP Murska Sobota

Investor Details

Authority/Company

Public authority or private company

Name: Komunala d.o.o.

Address: Kopališka ul. 2, 9000 Murska Sobota

Telephone: +386 69 31600

Fax: +386 69 31401

Contact Persons

Responsible persons for the project ready for additional information

Zver Boštjan

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The existing treatment plant is hydraulically and organically overloaded. The construction of a new treatment plant is foreseen, the technical documentation is finished. The rainless inlet is about 10.500 m^3/day, the pollution load 2.520 kg BOD5.

The treated water is discharged to Ledava.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Construction of the whole line of water and sludge treatment:

Primary sedimentation tank, biological stage, combined chemical-biological phosphorus treatment;

Pre-thickening of biological sludge, anaerobic treatment of sludge in digesters, machine sludge thickening.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The Ledava River has bad hydrological properties, the river is transboundary.

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The estimated costs for the construction of the entire wastewater treatment plant are DM 16 Mio or SIT 1520 Mio (US$ 9,9 Mio).

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 18

Wastewater Treatment Plant Municipality Šalek Valley or Velenje

Project Title

Construction of the second phase of Central Wastewater Treatment Plant of Šaleška dolina (Šalek valley)

Responsible/Legal Body

Komunalno podjetje Velenje d.o.o. (Communal enterprise Velenje Ltd.)

Authority/Company

Komunalno podjetje Velenje d.o.o. (Communal enterprise Velenje Ltd.)

Name

Marijan Jedovnicky, B.Sc.

Address

Koroška 37/b, 3320 Velenje, Slovenia

Telephone

+386-63-856251

Fax

+386-63-855796

e-mail

Project Target:

The Šalek Valley is a very industrial and densely populated area with a very small river that is of course heavily polluted. The project target is to reduce this pollution and to achieve the efficiency of wastewater treatment in compliance with the new Slovene and the European legislation.

Investment Costs:

ca. 16.650.00 DEM

Status of Project:

Ongoing project

Project Title

Full title of the project/programme

Construction of the second phase of Central Wastewater Treatment Plant of Šaleška dolina (Šalek valley)

Investor Details

Authority/Company

Public authority or private company

Name: Komunalno podjetje Velenje d.o.o. (Communal enterprise Velenje

Ltd.)

Address: Koroška 37/b, 3320 Velenje, Slovenia

Telephone: +386-63-856251

Fax: +386-63-855796

e-mail:

Contact Persons

Responsible persons for the project ready for additional information

Marijan Jedovnicky, B.Sc.

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Planning/consulting
Construction
Licensing/monitoring

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

The first phase of the Central wastewater treatment plant of the Šalek valley was realized in 1989-1991. The investors (Communities of Velenje and Šoštanj) are going to add the biologic treatment and to connect a part of the sewer system from the industrial area to the WWTP.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

There are two variants considered:

1. first variant: classical treatment method – process OCO,
2. second variant: technology of treatment with fixed biomass – system BIOFOR.

First variant: the treatment takes place in two OCO reactors, which are divided in an anaerobic, an anoxic and an aerobic part. The C, N and P compounds are decomposed with biomass in suspension, with oxygen content being controlled. The phosphates are additionally precipitated by FeCl3. The excess biomass is sedimented in a secondary sedimentation tank. The primary and secondary sludge is thickened, anaerobically stabilized and dewatered before deposition. The digester gas is burnt on two gas motors, where electrical and thermal energy is produced.

Two OCO reactors and two secondary sedimentation tanks have to be built.

Second variant: The C, N and P compounds are decomposed on two filters with fixed biomass. Phosphorus is previously chemically precipitated. The excess biomass is sedimented in the primary sedimentation tank. Sludge stabilization is identical to the first variant.

A facility with two lines of biofilters has to be built.

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The receptor – the Paka River – is too small for a coalmine and industrially intensive Šalek Valley. The average flow of the Paka River in Šoštanj is only 2,6 m3/s and there is a big difference between max. and min. flow. Paka has a mountain creek flow regime (unbalanced pluvio-nival regime). The max. flow is in November due to autumn rainfalls, the second max. is in March, due to snow melting. Min. flows are in January (snow retention) and in August (deficit of rainfall). Minimum flow is less than 200 l/s and maximum over 100 m^3/s. That means that the receptor is very sensitive.

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The investment costs for the OCO variant is 17.225.110 DEM, for the BIOFOR variant 15.638.741 DEM. They have been calculated from the designs. The prices include the construction, supply, erection and putting into operation. They don't include the costs for project documentation, administrative procedures, project management and supervision of the work being performed.

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

The financial construction for the period 1999-2003 was done for the average investment cost and is a projection of the financial capability of the investor.

Sources in the phase of construction	in DEM
State budget	800.000
Grant (Phare)	4.250.000
Loan (Phare)	4.500.000
Taxes	2.100.000
Contribution to costs	1.900.000
Price of biological treatment	2.600.000
Amortization of the sewer system	500.000
Total	**16.650.000**

Project 19

Wastewater Treatment Plant Municipality Vrhnika

Date of first setting up: 2.7.98

Project Title

Central Wastewater Treatment Plant Vrhnika

Responsible/Legal Body

Komunalno podjetje Vrhnika (Communal enterprise Vrhnika)

Authority/Company

Komunalno podjetje Vrhnika (Communal enterprise Vrhnika)

Name

Stojan Jakin, B.Sc.

Address

Pot na Tojnice 40, 1360 Vrhnika

Telephone

+386-61-751283

Fax

+386-61-752013

e-mail

Project Target:

Investment Costs:

Status of Project:

Project Title

Full title of the project/programme

Central Wastewater Treatment Plant Vrhnika

Investor Details

Authority/Company

Public authority or private company

Name: Komunalno podjetje Vrhnika (Communal enterprise Vrhnika)

Address: Pot na Tojnice 40, 1360 Vrhnika

Telephone: +386-61-751283

Fax: +386-61-752013

e-mail:

Contact Persons

Responsible persons for the project ready for additional information

Stojan Jakin, B.Sc.

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Legal/Financial Status

Legal Status of the investor

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Planning/consulting
Construction
Licensing/monitoring

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)

Technology Proposed

Ownership of Project Site

Status of proprietary rights

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
In progress

Finished/completed
Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Primary Effects of Project

Description of the effects of the project on different geographical levels

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

The pre-investment costs (designs, documentation, permissions) are estimated to amount to 200.000 ECU, the erection of the treatment plant is estimated to amount to 3.000.000 ECU. The total amount then is 3.200.000 ECU, divided over 2 years:

national budget: 1.000.000 ECU,

PHARE Programme: 1.000.000 ECU,

own resources: 1.000.000 ECU.

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner			
(2) National Environmental Fund			
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements			

Project 20

Wastewater Treatment Plant Municipality Domžale

Project Title

Upgrading of the central wastewater treatment plant Domžale – Kamnik – nitrification-denitrification

Responsible/Legal Body

Centralna čistilna naprava Domžale – Kamnik d.o.o. (Central wastewater treatment plant Domžale – Kamnik Ltd.)

Authority/Company

Centralna čistilna naprava Domžale – Kamnik d.o.o. (Central wastewater treatment plant Domžale – Kamnik Ltd.)

Name

Olga Burica

Address

Štrudljanska 91, 1230 Domžale, Slovenia

Telephone

+386-61-720551

Fax

+386-61-720490

e-mail

Project Target:

Investment Costs:

Status of Project:

Language of Project Documents:

Project Title

Full title of the project/programme

Upgrading of the central waste water treatment plant Domžale – Kamnik – nitrification-denitrification

Investor Details

Authority/Company

Public authority or private company

Name: Centralna čistilna naprava Domžale – Kamnik d.o.o. (Central wastewater treatment plant Domžale – Kamnik Ltd.)

Address: Štrudljanska 91, 1230 Domžale, Slovenia

Telephone: +386-61-720551

Fax: +386-61-720490

Contact Persons

Responsible persons for the project ready for additional information

Olga Burica

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

Biotechnical faculty Ljubljana – prof. Toman, prof. Raspor

Biotechnical faculty Zagreb – prof. Glancer

AG Biro Trzin – Girandon A., B.Sc.

Ecological engeneering institute Maribor – Vodopivec R., B.Sc.

Hidroinženiring Ljubljana – Rečnik Ž., B.Sc.

Legal/Financial Status

Legal Status of the investor

Positive

Authority/Company Profile

Task/mandate field of business
Annual budget of auth./turnover or company
Number of persons employed

Public service “treatment of waste and precipitation water”. Technical experiments and analysis.

The annual income of the company amounts to ECU 2,5 Mio or SIT 467,5 Mio (US$ 3,1 Mio).

The number of people employed in the company is 17.

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Sufficient

Institutions/Enterprises beside the Investor

Investing – technical documentation: designing companies in Slovenia
Construction: constructing company chosen by public competition.
Monitoring: Central wastewater treatment plant Domžale – Kamnik Ltd. itself by authority of the Ministry of environment and physical planning.

Project Description

Project Outline

Technical description of the main components of the project
Main elements of project to avoid or remedial water pollution (5 to 10 lines)
- structural project
- non-structural project
Beneficiaries
Stakeholders
Location
Site
Existing use of site

Upgrading the system of the central wastewater treatment plant Domžale – Kamnik to eliminate the nutrients – nitrogen and phosphorus compounds. The pre-denitrification process has been chosen to eliminate nitrogen compounds. Project targets are:
Unsolved substances: under 30 mg/l
COD: 40-70 mg O2/l
BOD: 8-15 mg O2/l
Nitrogen in form of ammonium: 0-1 mg/l
N tot.: 8-10 mg/l, -80% elim.
P tot.: 1-2 mg/l, -80% elim.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
- recreation
- aestethics
- biodisversity
- economic development
- transboundary effects
Assumed/calculated deterioration without project measures

To improve the quality of the outlet of the treatment plant and with it the quality of the following rivers: Kamniška Bistrica, Sava, Donava. The influenced countries are Slovenia, Croatia, Yougoslavia.

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
- application/license
Bidding/selection of construction company
Project documents/summary in English (y/n)

The preparation of the project goes on in several phases:

- Stationary and dynamic simulation models are performed (Central waste water treatment plant Domžale – Kamnik Ltd.)
- Lab. and pilot scale experiments with MBBR – fixed biomass and the conventional process with suspended biomass are performed (Central waste water treatment plant Domžale – Kamnik Ltd. in collaboration with BTF, Phare and Purac)
- The outline scheme for upgrading the waste water treatment plant regarding the environmental load of future facilities has been finished (IEI – Environmental Engineering Institute in collaboration with (Central waste water treatment plant Domžale – Kamnik Ltd.)
- A choice of necessary measurements and parameters for the design for building permission is being prepared.

Technology Proposed

Pre-denitrification process

- fixed biomass on swimming holders (MBBR technology)
- suspended biomass (classical process).

Ownership of Project Site

Status of proprietary rights

Central wastewater treatment plant Domžale – Kamnik Ltd. and communities

Special Project Items

Additional remarks on project description

The upgrading of the treatment plant will be performed without stopping the operation of the existing part of the treatment plant.

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Attitude of concerned people to the project
Results of social acceptance assessment

It is a continuation – upgrading and there are no problems with the public regarding the central wastewater treatment plant. The public co-operates with constructive suggestions over the community bodies.

Environmental Impact Assessment

Planned
In progress
Finished/completed
Accepted
Rejected or not accepted

The environmental impact assessment for the existing facilities is finished, for future facilities it will be performed.

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

The recipient is the Kamniška Bistrica river, that flows into the Sava River. Slovenia has no new classification of streams, but we believe that the measures on the central wastewater treatment plant Ljubljana, Central wastewater treatment plant Domžale – Kamnik and Farm Ihan are going to be a significant contribution to the reduction of nitrogen compound concentrations in the environment, on local and state level.

Primary Effects of Project

Description of the effects of the project on different geographical levels

We expect, that the companies will pay less taxes for water pollution because of effective treatment. The following communities are included: Kamnik, Mengeš, Trzin, Domžale.

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
Employment/income effects:
- during construction period
- during operation period
Other economic benefits

At environmental projects like treatment plants the economic rate of return is positive zero, the prices are controlled – blocked by state. We expect a 100% covering of all expenses with a minimal rest.

With the performance of the project both Central wastewater treatment plant Domžale – Kamnik and local communities will primary achieve the legal requirements for outlet. Employment will rise by 10%. The system income will (because of more work) rise by 10-20%, the same will happen to expenses. The companies will pay less taxes for water pollution by nitrogen because of effective treatment.

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?

At environmental projects like treatment plants it is unreasonable to expect an EIRR since the system itself can not influence the (greater) water inlet, it can only regulate the costs by quality work and by well controlled supervision over all use.

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
On an annual basis
Year of cost estimate
Nature of cost estimate (preliminary, adequate, etc.)

Estimated investment costs into the system of modernization of the central wastewater treatment plant in the period 1999-2005 is SIT 2.400 Mio. (US$ 13,7 Mio). Annual operating costs are about US$ 3,1 Mio. The costs were estimated in 1998. The investment costs have been estimated, the operational costs are real costs in 1998 plus 20%.

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
Nature of cost estimate (preliminary, adequate, sources of information, ...)

Estimated annual operational costs are about US$ 3,1 Mio:

- running operational costs ca. 50%
- costs of reparations and replacements: ca. 30%
- work: ca. 17%
- other costs: ca. 3%.

The total operation costs have been estimated in 1999 from real costs in 1998.

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
Nature of cost estimate (preliminary, adequate, etc.)

Depends on valid prices for water treatment.

Financial Internal Rate of Return (FIRR)
Has a FIRR been calculated?

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency	Requested Currency	Non-secured Currency
(1) Equity of project owner	10%	40%	30%
(2) National Environmental Fund		10%	
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget			
(6) Public loan – municipal budget	10%	30%	
(7) Public grant – central budget		10%	
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan			
(13) Other Sources			
Total funds/requirements	20%	100%	

Project 21

Wastewater Treatment Plant Municipality Rogaška Slatina

Project Title:

Wastewater Treatment Plant Municipality Rogaška Slatina

Responsible/Legal Body :

OKP Javno podjetje za komunalne storitve Rogaška Slatina d.o.o.(Company for Public services Ltd)

Mr. Zlatko Kvesič

Authority/Company

Name : OKP Javno podjetje za komunalne storitve Rogaška Slatina d.o.o.(Company for Public services Ltd)

Address : Rogaška Slatina, Zdraviliški trg 14

Telephone : +386-63-814-626

Fax : +386-63-814-948

Project Target:

Wastewater treatment of Rogaška Slatina and Rogatec..

Investment Costs:

The estimated cost is SIT 600.411.000 (US$ 3,6 Mio).

Status of Project:

Feature of Project:

Beginning of construction 1999.

End of construction 2002.

Project Title

Full title of the project/programme

Central Urban Wastewater Treatment of Rogaška Slatina

Investor Details

Authority/Company

Public authority or private company

Name: OKP Javno podjetje za komunalne storitve Rogaška Slatina d.o.o. (Company for Public services Ltd)

Address: Rogaška Slatina, Zdraviliški trg 14, 3 250 Rogaška Slatina

Telephone: +386-63-814-626

Fax: +386-63-814-948

Contact Persons

Responsible persons for the project ready for additional information

Mr. Zlatko Kvesič

Advisor/Consultant

Names of consulting engineers/companies, planning institution, etc.

IPONG Ltd Rogaška Slatina, Zdraviliški trg 13

Legal/Financial Status

Legal Status of the investor:

Reliable

Authority/Company Profile

Task/mandate field of business
Public Services

Annual budget of auth./turnover or company
527.091.000 SIT (3.2 MIO US$)

Number of persons employed
51

Planing/Implementing Extent/Capacity of the Investor

Authority's/Enterprises own capacity to plan and implement the project

Institutions/Enterprises beside the Investor

Project Description

Project Outline

Technical description of the main components of the project:
Main elements of project to avoid or remedial water pollution (5 to 10 lines)

Wastewater Treatment Plant capacity 1200 PE.

Primary Needs for the Project

Description of the targets of the project and its contribution to the reduction of the pollution in the Danube River Basin according to
- health benefits
- aquatic environment (fish, etc.)
Wastewater treatment of Rogaška Slatina and Rogatec, assurance quality of Sotla River and lake Vonarje

- recreation

Status of Project Preparation

Description of the actual status of project studies and reports:
- prefeasibility level
- feasibility level
(PGD, PZI, PZR) - acquisition of the permit of construction.

- application/license
- bidding/selection of construction company
Project documents/summary in English (y/n)
No.

Technology Proposed

LEMNA, ZDA

Ownership of Project Site

Status of proprietary rights
Company for Public Services Rogaška Slatina Ltd

Special Project Items

Additional remarks on project description

Project Effects and Interactions

Public's Expression of Interest

Description of public participation/involvement measures
Accept location plan (Ur.listbšt.15/88)

Attitude of concerned people to the project
Results of social acceptance assessment

Environmental Impact Assessment

Planned
In progress
Finished/completed

Accepted
Rejected or not accepted

Sensivity of Locality/Receptor

Description of the area, location, receiving water influenced by the project

Construction and working wastewater treatment plant will assure higher quality of Sotla River and permit water filling of leak Vonarje.

Primary Effects of Project

Description of the effects of the project on different geographical levels:

International.

Economic Project Justification

Economic Project Benefits

Saved investment cost (compared to without project case)
payment ecological tax

Employment/income effects:
- during construction period
Employment national constructions company

- during operation period
Increasing employment

Other economic benefits

Economic Internal Rate of Return (EIRR)

Has an EIRR been calculated?
Yes.

Financial Viability

Estimated Investment Cost

Investment cost national currency and US$;
Allocation of capital cost:
- land
- construction and machinery
- planning and supervision
- Total cost
640.441.000 SIT or 3.639.036 US$

Year of cost estimate
1998

Nature of cost estimate (preliminary, adequate, etc.)

Estimated Operational Cost

Expected annual (operational) recurrent cost (in real terms)
Repair and replacement cost
Total operational cost
Year of cost estimate
1998

Nature of cost estimate (preliminary, adequate, sources of information, ...)
66.346.000 SIT (394.447 US$)

Estimate of Revenues

Expected annual revenues (in real terms)
Year of estimate
1998

Nature of cost estimate (preliminary, adequate, etc.)
69.663.300 SIT (414.170 US$)

Financial Internal Rate of Return (FIRR)

Has a FIRR been calculated?

No.

Anticipated/Proposed Funding Scheme

Sources of funding	Secured Currency US$	Requested Currency US$	Non-secured Currency US$
(1) Equity of project owner			
(2) National Environmental Fund		894.417	
(3) Water Management Fund			
(4) Public loan – central budget			
(5) Public loan – regional budget		891.795	
(6) Public loan – municipal budget			
(7) Public grant – central budget			
(8) Public grant – regional budget			
(9) Public grant – municipal budget			
(10) International loan			
(11) International grant			
(12) Commercial bank loan	841.260		
(13) Other Sources	942.331		
Total funds/requirements			