1. BASIC INFORMATION
   1.1. CRIS Number: 2002/000-606.10
   1.2. Project Title: WWTP Zielona Góra
   1.3. Sector: Cross Border Co-operation / Environment
   1.4. Location: Poland, in Lubuskie Voivodeship, in the locality of Lezyca near Zielona Góra

2. OBJECTIVES
   2.1. Wider/strategic objectives
   The general objective of this Project is implementation of Polish Government policy in scope of waste management, thus improvement of population life standard and health conditions in the region of the Odra river basin and adjustment of waste management to requirements obligatory in European Union (Directive No 75/442/EEC of 15th July 1975 regarding waste as amended with Directive No 91/156/EEC).
   2.2. Project purpose
   The direct objective of the project is creation of the safe sludge disposal system by arrangement of sludge management in the Central Wastewater Treatment Plant in Zielona Góra.
   2.3. Priority “Accession Partnership” and “National Programme for Adoption of the Acquis”.
   The above-mentioned objectives have been defined on the basis of the assumptions identified in the Accession Partnership and the National Programme for the Adoption of Acquis (NPAA) - a document by the Polish central government which incorporates strategic guidelines in respect of the government’s actions to adapt to the requirements of the EU.
   The medium-term guidelines regarding protection of the environment assume that environmental protection requirements have to be an integral part of the policies of various individual sectors through the development of structure, capability of monitoring and inspecting of the implementation of water, sewage and refuse related technologies.
   The objectives of the project suit activities foreseen as main technical assistance instruments and commonwealth in the range of supporting of investment projects which enable the Polish infrastructure to adapt to the Community’s standards, particularly in respect of environment protection, agriculture, industry and safety.
   One of ability factors for taking obligations resulting from membership is life standard and environmental protection. Under environmental protection special attention is paid for implementation of framework Directive regarding air, waste and water and the Directive regarding common environment pollution prevention and control. It is necessary to increase investment inputs for monitoring of solid and dangerous waste by disposal and safe storage of dangerous waste.
   2.4. Contribution to National Development Plan (possibly Preliminary Plan) (NDP) and Joint Programme Document (JPD) Phare CBC/Interreg IIIA)
   The project’s objective is accordant to priority directions of activities implemented under the Preliminary National Development Plan which was produced by the Department of Regional Development, Ministry of Economy.
   This objective is also in line with Development Strategy for Lubuskie Voivodship, which puts special emphasis on rational resources utilisation by rationalization of solid waste management and implementation of European environmental protection standards. It is reflected in formulation of objectives and activities which shall improve state of environment. One of these activities is to be concentration of forces and resources which impart energy to technical infrastructure development under such enterprises as landfills and waste utilisation.
   Implementation of Lubuskie Voivodeship strategy is made in strictly relation to ecological development of “Sprewa-Nysa-Bónr” Euroregion and assumptions of Polish-German border region development.
   Joint Programme Document PHARE CBC-INTERREG III regarding development of border area for Lubuskie Voivodeship and Brandenburg Bundesland presents necessary activities for joint border area. Main objective for 2000 – 2006 is balanced social-economic development of Polish-German borderland of Lubuskie Voivodeship and Brandenburg Bundesland. Essential for achievement of these objectives priorities have been determined. One of them is environmental protection including “Environmental protection (air, ground, water)“.
   2.5. Cross-border Impact
Project implementation is accordant to “CBC main priorities and measures” – Priority C: Environment; Instrument: reduction of natural environment hazard for strengthening of borderland ecological development.

Project implementation shall impact on cross-border co-operation by:
- improving healthiness of inhabitants if border belt of Poland and Germany on both sides of the Odra river by eliminating water pollution;
- elimination of penetration to ground and ground waters toxic chemical compounds contained in sludge;
- improving the image of the borderland and making the region more attractive for tourists,
- improving the habitat of flora and fauna in the regional rivers and increasing the number of fish in the ecosystem.

3. DESCRIPTION

3.1. Background and Justification

Already during construction of the Central Wastewater Treatment Plant for Zielona Góra was taken into consideration the problem of sludge management. In the designing phase was reserved special place for construction of sludge disposal. Contemporary financial resources did not let to solve this problem in this time.

Now produced in WWTP sludge after mechanical dewatering has hydration of 65 % and is stored in landfill bowl as waste (about 1460 t/year) in Racula near Zielona Góra.

The initiator of the project aimed for complex solution of sludge management problem in Central WWTP in Zielona Góra is the Board of the Town of Zielona Góra. It has been prepared the conception for sludge management problem solution taking into consideration some possibilities of sludge disposal, such as: composting, fermenting, drying or drying with incineration. Penetrating analysis of above possibilities proves that sludge drying gives highest ecological effect at given inputs.

Taking the above analysis into consideration it is foreseen in framework of WWTP sludge part extension to construct a sludge dryer. Sludge drying shall make possible processing of technological sludge into granular material. It may be stored or used in agriculture without further processing or used as fuel in furnaces.

Sludge dryer is to be constructed in order to make drying, thermal sanitation and utilisation of sludge. It shall give possibility of safe storage or further processing and triple reduction of sludge originating in the process of wastewater treatment.

3.2. Related Activity

The Project of WWTP for Zielona Góra extension is continuation of the Project “Construction of Wastewater Treatment Plant in Zielona Góra” co-financed from Phare funds in amount of EURO 2,300,000.- Under the Contract co-financed from Phare funds the following structures of the wastewater treatment plant were made: the screens, sieves and pumping station’s buildings, the secondary sedimentation tank, the presses’ building, the sludge pumping station, the sludge thickener, the garage-storage building, levelling of area and internal roads, area draining. Thanks co-financing from Phare funds and Polish-German Foundation, NFEPWM, VFEPWM and own funds in 1998 was put into operation the modern wastewater treatment plant with output of 51,255 m$^3$/d.

3.3. Results

Implementation of the planned project will enable to arrange sludge management in the WWTP in Zielona Góra by drying, thermal sanitation and sludge utilisation. It is planned to obtain in a year 5650 t of sludge with dry mass content of 90 %.

The project foresees agricultural using of dried sludge which is the final product of the technological process. For temporary storage of granulate will be used the storehouse equipped with necessary protections. In accordance with design assumptions is foreseen to use this material in maximal grade for agricultural purposes in understanding of provisions of Article 2, Clauses (c) and (d) of Council Directive No 86/278. Dried sludge in shape of granulate makes fertilize material characterised with high useful features and complying with binding sanitary-hygienic requirements. Dried sludge obtained from the planned installation may be considered as “treated sludge” in accordance with definition comprised in Article 2, Clause (b) of Directive, i.e. as material after thermal treatment reducing health hazard resulting from using it. Moreover, produced in the installation granulate shall
comply with requirements of the above Directive regarding value of heavy metals concentration determined in Appendix I B.

Summarising, it may be stated that the design foresees utilisation of dried sludge in shape of granulate for agricultural purposes and confirmed that it shall be done in full accordance of Directive 86/278.

3.4. Activities

As a result of project implementation shall be built the sludge dryer. It includes:

⇒ Execution of construction-assembly works of the dryer’s building,
⇒ Supply, assembly and commissioning of drying installation, consisting of the following elements:
  • Storage tanks of dehydrated sludge,
  • Dryer,
  • Condenser,
  • Technological boiler house,
  • Chimney,
  • Complete of measuring devices, pipelines and fitting and control-measurement devices and automation system,

It is planned to organise one tender for above works and supplies and to sign one contract for amount of 3.50 MEUR, including 1.50 MEUR from own funds.

3.5. Gained Experience

The Town of Zielona Góra had already implemented projects co-financed from Phare funds and experiences gained during their implementation have been used for preparation of the current project.

4. INSTITUTIONAL FRAMEWORK

The following entities are involved in Project implementation:

§ Self-government of the Town of Zielona Góra,
§ District Administration in Zielona Góra,
§ Voivodeship Self-government Parliament,
§ Lubuski Voivode,
§ WWTP „Lacza” Water Company (company owned by the Town, financing project execution)

A tender process will be followed to appoint “the Engineer”.

The Town of Zielona Góra is to be the Project employer and beneficiary.

The Town of Zielona Góra will become the owner of the assets once the project us finished.
This will be a public property.


5. BUDGET

<table>
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<tr>
<th></th>
<th>Phare CBC 2002 financing</th>
<th>National funding [MEUR]</th>
<th>International Financing Institutions [IFI] [MEUR]</th>
<th>TOTAL [MEUR]</th>
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<td></td>
<td>T O T A L :</td>
<td></td>
<td>2.00</td>
<td>1.50</td>
</tr>
</tbody>
</table>

Co-funding from national sources in amount of MEURO 1.5 is ensured and this amount was included in the local budget.

6. IMPLEMENTATION ARRANGEMENTS

6.1. Implementing Agency

Implementing agency:
Phare CBC Implementing Authority
Ministry of Internal Affairs and Administration
00-522 Warsaw, 36 Krucza Street, Poland
6.2. Non-standard aspects
During Project implementation contracting procedures described in “Practical Guide for Tender Procedures within Phare, Ispa and Sapard programmes” will be strictly followed.

6.3. Contracts
It is planned to implement 1 contract, MEUR 3.50, - joint co-financing

7. IMPLEMENTATION SCHEDULE
7.1. Tender commencement I quarter of 2003
Tender Documentation will be produced by end of IV quarter of 2002.
7.2. Works commencement - I quarter of 2003
7.3. Project completion - III quarter of 2004

8. Equal Opportunities
The relevant professional skills and experience in performing similar projects shall be the criterion for the evaluation and selection of staff who will be responsible for the implementation and follow-up of the project rather than their gender or age. Due to the specific nature of construction-assembly works (hard physical work), most of the staff is male, however both males and females shall have the same opportunities to become work progress supervising personnel members.

9. ENVIRONMENT
Environment impact report was prepared in 2001. It is available in the Beneficiary’s office Project implementation will contribute in improvement of environment and is one of elements of the Odra river’s drainage basin protection.
The enterprise being the report subject will not deteriorate environment both during construction and operation.
Undertaking of the planned project will involve number of positive effects, viz.:
- minimisation of sludge quantity stored in a landfill,
- possibility of safe storage of sludge after thermal sanitation and utilisation,
- reduction of air pollutants emission in WWTP’s vicinity,

10. RATES OF RETURN.
Investment costs (partially) and cost of later operation will be balanced by incomes from relinquishment of sludge storage at the landfill and incomes from sale of dried sludge (agriculture, boiler houses).
A summary of an economic and financial analysis which proves that financing of the project is justifiable, with FIRR and EIRR calculations, is shown in appendix 4.
Financial Internal Rate of Return (FIRR) is of 8.8%.
Economic Internal Rate of Return (EIRR) is of 10.4%.

11. INVESTMENT CRITERIA
11.1 Catalyst Activities
Phare assistance will let for earlier completion of planned activities in the field of environmental protection. Should we use only our own funding to carry out the project, it could be completed around 2010. Covering of the project with Phare co-financing will let to complete project implementation up to the end of III quarter of 2004. It will perform the role of a factor accelerating activities in accordance with Accession priorities and activities accordant to integration policy.

11.2 Co-financing
The project will be co-financed through the self-government own budget. Their share shall be of approximately 43 %.
11.3 Additionality
Each of the co-financing institutions provides their financial allocation to this project with the allocation not being dependent on the amounts allocated by the other institutions. The Phare financial assistance does not leave out other sources of funding, it is just a component that can accelerate the accomplishment of the target results. If Phare aid is granted own funds shall not be withdrawn.

11.4 Project Preparation and Size
The project is completely prepared for implementation. The building design is prepared. We wait for the construction permit. Any legal issues in respect of the project are resolved because the planned sludge dryer is to be erected on area of the existing WWTP.

11.5 Sustainability
The sludge dryer constructed with Phare co-financing would operate during minimum twenty years. The project will be sustainable, in line with the EU policy and standards. The project shall have a positive impact on environment. The sludge dryer is to be the part of Central WWTP for Zielona Góra. Operator of the WWTP is Wastewater Treatment Plant “Lacza”, Spółka Wodna. Operation of the investment will be financed from operational revenues.

11.6 Compliance with state aids provisions
Any action to be taken under the project shall respect any regulations regarding competitiveness as effective in the European Union. A contractor shall be appointed following a tender procedure open to the European Union member states and Phare countries without applying any preferences. State aid is not be used for financing of project’s operation.

11.7 Contribution to National Development Plan and Common Programme Document
This project is in line with the development measures and the priorities of the Preliminary National Development Plan (measure 4 – Creation of solid, balanced development conditions by modernisation and extension of environment protection infrastructure; priority 5 – Rational waste management). Its objective is consistent with one of the strategic goals of the National Development Plan (National Environment Protection Strategy for the years 2000 - 2006) aimed to achieve the Community’s standards regarding the quality of water in river drainage areas, which will result in better living and health conditions of the residents. The implementation of the project is in line with the programme implementation schedule, which assumes the commencement of environment protection infrastructure projects at a pre-accession phase.

12. Conditions and Sequence.
The Project has the following conditions:
• Change of financing principles by EU,
• Change of priorities.
• Effective contract awarding (for amount not greater than the budget) and its approval by EC Delegation.
• Drastic fall of EURO rate of exchange.
• Proper and competent activities of the Contract Engineer, carrying into effect proper works and supplies quality.
• Suitable quantity and quality of treated wastewater.

List of Appendices
1. Logical matrix.
2. Detailed implementation graph.
3. Quarterly schedule of contracting and payments for the entire programme duration.
### Annex 1

**Logframe for the project:**
"Extension of the Central Wastewater Treatment Plant for Zielona Góra – Construction of Sludge Dryer."

**Programme title and number:**

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<th>Date of drafting:</th>
<th>Contracting period expires</th>
<th>Disbursement period expires</th>
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<td>10.2001</td>
<td>15/10/2004</td>
<td>15/10/2005</td>
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#### Wider objective:

<table>
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<tr>
<th>Objectively verifiable indicators:</th>
<th>Sources of verification</th>
<th>When achieved?</th>
<th>By whom measured:</th>
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<tbody>
<tr>
<td>- utilisation of 100 % sludge produced in wastewater treatment process</td>
<td>- reports on environment condition</td>
<td>- three years after project completion</td>
<td>prepared by the Town Board.</td>
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#### Project objective:

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<tr>
<th>Objectively verifiable indicators:</th>
<th>Sources of verification</th>
<th>Assumptions:</th>
</tr>
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<tbody>
<tr>
<td>- Formation of a safe system for sludge disposal</td>
<td>- reports on environment condition</td>
<td>- lack of receivers’ interest</td>
</tr>
<tr>
<td>- Management of sludge produced in WWTP and reduction of sludge stored in the Landfill in Racula by 8000 t/year, minimisation of volume of sludge produced in wastewater treatment process, agricultural utilisation of dried sludge, utilisation of sludge as fuel</td>
<td>- one and two years after project completion</td>
<td>prepared by the Town Board.</td>
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#### Results:

<table>
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<th>Objectively verifiable indicators:</th>
<th>Sources of verification</th>
<th>Assumptions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrangement of sludge management in WWTP in Zielona Góra by drying, thermal sanitation and utilisation of sludge</td>
<td>- How: quality and quantity tests of dewatered and dried sludge, - When: directly after begin of operation - By whom: measured by the user</td>
<td>- suitable quantity of treated wastewater - suitable quality of treated wastewater</td>
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#### Activities:

<table>
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<th>Funds/resources:</th>
<th>Costs:</th>
<th>Assumptions</th>
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</thead>
<tbody>
<tr>
<td>- Construction of the sludge dryer:</td>
<td></td>
<td></td>
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</table>
⇒ Execution of construction-assembly works of the drier building, 
⇒ Supply, assembly and technological commissioning of the installation for sludge drying, composed of the following elements: • Store tanks of dewatered sludge, • Drier, | UE: 2.00 mln EURO Own funds: 1.50 mln EURO Total: 3.50 mln EURO | - effective awarding of the Contract (for amount not greater than the budget) to the Contractor and his approval by European Commission Delegation, - drastic fall of EURO rate of exchange, - proper and competent supervision of the Contract Engineer, exacting proper quality of works and supplies, |
- Condenser,
- Technological boiler house,
- Chimney,
- Complete measuring system, pipelines and fittings and CMDA,

Preliminary conditions
Preliminary conditions:
Decision of the Board of the Town of Zielona Góra regarding construction of the sludge dryer

Annex 2 – 3 Schedule of implementation, contracting and disbursement.

| „Extension of the Central WWTP for Zielona Góra – Construction of the Sludge Dryer.” | Date of Drafting | 10.2001 |
| Planning Period | I quarter 2003 - III quarter 2004 |

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Implementation Schedule
- D/C
- I

Contracting Schedule
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- 2.00
- 2.00
- 2.00
- 2.00
- 2.00

Disbursement Schedule
- 0.20
- 0.70
- 1.10
- 1.40
- 1.80
- 2.00
- 2.00