1. Basic Information

1.1 Project Number CZ01.11.02

1.2 Project Title – Jindrichuv Hradec – Clean District Heating

1.3 Sector

Environmental

1.4 Project Location

<table>
<thead>
<tr>
<th>Euroregion:</th>
<th>&quot;Silva Nortica&quot; (establishment under preparation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-border region:</td>
<td>Czech Republic - Austria</td>
</tr>
<tr>
<td>District:</td>
<td>Jindrichuv Hradec</td>
</tr>
<tr>
<td>Municipality:</td>
<td>Jindrichuv Hradec</td>
</tr>
<tr>
<td>Cadastral territory:</td>
<td>Jindrichuv Hradec</td>
</tr>
</tbody>
</table>

2. Objectives

2.1 Overall Objective(s)

The project is in compliance with the Joint Programming Document (JPD), Czech Republic – Austria the medium-term strategy and priorities for the Interreg III A Phare CBC programmes. It fits the priority "Sustainable territorial development and environmental protection". The project is targeted at:

- Reduction in and elimination of the cross-border air pollution loads;
- More intensive use of renewable energy resources;
- Optimum utilisation of the existing natural resources and fuel savings.

2.2 Project Purpose

Improvement of air quality in the adjacent Austrian part of the border area

The project implementation will result in reduced air emissions of pollutants in the Austrian border area by 70.4 t/year.

<table>
<thead>
<tr>
<th>Decrease in emissions</th>
<th>t/year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>2.215</td>
</tr>
<tr>
<td>SO₂</td>
<td>17.796</td>
</tr>
<tr>
<td>NOₓ</td>
<td>6.940</td>
</tr>
<tr>
<td>CO</td>
<td>0.198</td>
</tr>
<tr>
<td>CO₂</td>
<td>43.000</td>
</tr>
<tr>
<td>CₓHᵧ</td>
<td>0.234</td>
</tr>
<tr>
<td>Aggregate</td>
<td>70.383</td>
</tr>
</tbody>
</table>
More efficient heat generation and supply

Through the project implementation more efficient heat generation and supply will be achieved from two district heating sources in the town of Jindrichuv Hradec, raising the efficiency from the initial 54% up to 84%. Conditions will thus be created for connecting further heat consumers (swimming pools, service and production facilities, 200 newly constructed flats in the Hvezdárna housing estate) to the systems. After the completion of project implementation sales of heat will be increased from the current 210 000 GJ/year up to 223 100 GJ/year. Due to the increased efficiency, reduction in the installed capacity from the current 50.4 MW to 42.0 MW will be achieved. The enhanced efficiency of production will make it possible to reduce the price of heat supplied in the district heating system on average by 15%.

Fuel savings and use of renewable sources of energy

Through the replacement of heavy fuel oils, the transition from steam heat distribution systems to hot water systems with combined heat and power generation, and the burning of biomass the following fuel savings will be achieved.

Consumption of fuels

<table>
<thead>
<tr>
<th></th>
<th>Before the implementation</th>
<th>After the implementation</th>
<th>Reduction</th>
<th>Reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel oils (t/year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural gas (mil. Nm³/year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood chips (t/year)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District heating syst. “Vajgar-Hvezdárna”</td>
<td>2.674</td>
<td>4.045</td>
<td>0</td>
<td>9.136</td>
</tr>
<tr>
<td>District heating syst. “U nádraží”</td>
<td>2.012</td>
<td>0</td>
<td>0</td>
<td>0.286</td>
</tr>
<tr>
<td>Aggregate</td>
<td>4.686</td>
<td>4.045</td>
<td>0</td>
<td>9.422</td>
</tr>
</tbody>
</table>

Improved air quality at Jindrichuv Hradec

The project implementation will provide for the aggregate reduction in all air pollutants by 87 %, especially of particulate matter and sulphur dioxide.

Enhanced attractiveness of the region for the development of tourism

The reduced air pollution and the use of solar energy for heating an indoor and outdoor swimming pool during the summer and transitory periods will lead to increased quality and wider offer of infrastructure for sports and leisure in the border region.

2.3 Accession Partnership and NPAA Priority
The enhancement of the environmental quality and compliance with the EU environmental standards, together with the support to economic development, is among the priority tasks of the pre-accession period.

The project is in compliance with the Accession Partnership and the objectives of the National Programme for the Adoption of Acquis (NPPA) in the sphere of environmental protection and support to economic development.

2.4 Cross-border Impact of the Project

Because of the prevailing north-west direction of winds and the height of chimneys of the heating plants, the air over the Austrian territory in the distance of 13 km south of Jindrichuv Hradec is also polluted. This pollution amounts to about 19% of pollutants emitted from the central heating plants in the town of Jindrichuv Hradec.

The project is based on a pressing need to protect the environment, which is the main problem in the Czech-Austrian relations, especially in the border areas.

The project has been strongly supported by the Austrian partners on both national and regional levels and recommended as a demonstration project meeting the recommendations of the "Kyoto Protocol".

3. Description

3.1 Background and Justification

Heat supplies in Jindrichuv Hradec are ensured by two independent steam district heating systems. It is the "U nádraží" facility with the current installed capacity of 18 MW and the housing estate system "Vajgar – Hvezdárna" with the output of 32.4 MW. The operation of both the systems was launched before 1970 and they were gradually extended to the current capacity providing heat supplies to 4 627 flats inhabited by about 15 000 people, who represent almost 3/4 of the town population. A number of non-residential buildings, e.g. schools, nurseries, shops etc., are also connected to the systems.

Heat for the district heating systems is supplied from 2 facilities using mainly heavy fuel oils without the combined heat and power generation. The boilers are not de-sulphurised and emit significant volumes of pollutants into the air. The efficiency of the consumers’ heat supplies is very low due to the outdated technology (steam system) and reaches about 54%.

High concentrations of air pollutants in the town of Jindrichuv Hradec but also in the Czech and Austrian parts of the border region, low efficiency of heat supplies to consumers and the resulting high prices of heat together with wasteful consumption of non-renewable sources of energy have resulted in the suggested solution of these problems. High prices for heat supplied from the central sources force the consumers to opt for decentralised solutions. Transition to local heating facilities in the dense housing would lead to serious environmental damage.

Low prices of fossil fuels in the past caused the lack of interest in the use of the available renewable energy sources. In close neighbourhood of the oil-fired boiler house feeding the "U nádraží" district heating system there is a wood-processing facility, "Kasalova pila" (saw mill), with an annual production of about 40 000 m3 of wood mass. The volume of the waste wood mass produced by this enterprise suffices to replace the oil burnt currently in the "U nádraží" boiler plant. The company’s management agreed with the investor in writing on the possible supplies of waste wood.

The two municipal swimming pools (outdoor and indoor), used mainly by the young and by tourists in the summer season, are so far heated by the economically inefficient combustion of natural gas. When connecting the pools to the district heating system and using the combined solar heating of water in the pools, especially in the summer and transitory periods, their operation will become much more efficient.
The installation of the solar technology will also support the promotion, education and awareness raising in the sphere of renewables, which are still insufficiently used in the Czech Republic.

### 3.2 Linked Activities

The project fits in the objectives of the national “Programme for the support of energy savings and the use of renewable energy resources” launched by the Government of the CR. Within this programme the “Energy concept of Jindrichuv Hradec” was prepared in 2000. The concept assessed the current situation in fuel and energy supplies in the town and recommended the updating of the current district heating system and the use of the available renewable energy sources as the most suitable source of power supplies.

Parallel to the suggested environmental conversion and updating of the heating system, heat consumption in dwellings will be decreased, mainly through better thermal insulation. It will be supported by the following national programmes: “Programme for the support of energy savings and the use of renewable energy resources”, “Regeneration of housing estates” and “Support to the reconstruction of apartment houses”.

### 3.3 Results

The project provides for the modernisation of two independent district heating systems, servicing in total 15 000 inhabitants of Jindrichuv Hradec. The project implementation will lead to the following results:

a) The district heating system for the housing estate "U nádraží" with a hot water boiler plant using biomass with the installed capacity of 6 MW, with an auxiliary and stand-by gas-fired unit for the production and supplies of heat to 924 flats and retail and service facilities, and allowing for linking up further heat consumers.

b) The district heating system for the housing estate "Vajgar a Hvezdárna" with a hot water boiler plant using natural gas, with the installed capacity of 30 MW, with a co-generation unit for the production of electricity and heat with the installed capacity of 150 kW for the production and supplies of heat to 3 703 flats, 2 primary schools, nurseries and retail and service facilities, and allowing for linking up further heat consumers (200 newly constructed flats, 2 swimming pools with the use of solar heating of water).

### 3.4 Activities

The project implementation requires the execution of all the necessary construction works and technological supplies linked to the overall environmental conversion of the district heating system. The project will include the following activities:

a) The district heating system for the housing estate "U nádraží"
   - Demolition of the current equipment that does not meet the new requirements;
   - Conversion of the current oil-heated boiler plant to a biomass-heated source with the output of 6 MW;
   - Installation of an auxiliary and stand-by gas-fired unit;
   - Conversion of steam based systems to hot water systems in the total length of 3 560 m;
   - Reconstruction of 6 heat exchanger stations;
   - Reconstruction of 49 heat transmission stations in apartment houses.

b) The district heating system for the housing estate "Vajgar a Hvezdárna"
   - Demolition of the current equipment that does not meet the new requirements;
   - Reconstruction of the gas-heated boiler plant with the output of 30 MW;
   - Construction of a co-generation unit with the output of 150 kW;
Supply and assembly of solar panels in the total area of 160 m²;
Conversion of steam based systems to hot water systems in the total length of 5 049 m;
Reconstruction of 9 heat exchanger stations;
Reconstruction of 86 heat transmission stations in apartment houses.

The necessary pre-condition for a successful project implementation is the timely provision of funds and of other resources and conditions – construction capacity, materials and technologies, project dossier, and engineering supervision.

4. Institutional Framework

The National Aid Co-ordinator (NAC) has an overall responsibility for programming, monitoring and implementation of the Phare programme. The National Fund (NF), managed by the National Authorising Officer (NAO), will supervise financial management of the programme and will be responsible for reporting to the European Commission.

The Ministry for Regional Development, in co-operation with the Centre for Regional Development, is the programme Implementing Agency (IA) with the overall responsibility for the project implementation. The NF will be transferring funds from the Phare resources to accounts managed by IA as authorised by the Financing Agreement signed between the MF/NF and IA.

The IA is managed by the Programme Authorising Officer (PAO) nominated by the Ministry for Regional Development and approved by the NAO and agreed by NAC. The PAO is responsible for all activities of the IA.

The investor is responsible for the Czech contribution to co-financing, for acquiring a land-use decision and a building permit, for preparing and launching the tender for a contractor, preparing a contract, supervising the works and for the final acceptance

Investor: Teplospol a.s. Jindrichuv Hradec
Vajgar 585/III
377 01 Jindrichuv Hradec

Represented by: Ing. Zdenek Svacina – director of the joint-stock company
Phone: +420-331 233 46
Fax: +420-331 322 367
E-mail: teplo-jh@esnet-cz

The joint-stock company is fully owned by the following municipalities:

<table>
<thead>
<tr>
<th>Structure of shareholders</th>
<th>% share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jindrichuv Hradec (town)</td>
<td>34.06</td>
</tr>
<tr>
<td>Trebon (town)</td>
<td>14.38</td>
</tr>
<tr>
<td>Dace (town)</td>
<td>12.84</td>
</tr>
<tr>
<td>Ceské Velenice (town)</td>
<td>5.93</td>
</tr>
<tr>
<td>Nová Bystrice (town)</td>
<td>5.64</td>
</tr>
<tr>
<td>Suchdorf nad Lužnicí</td>
<td>6.02</td>
</tr>
<tr>
<td>Slavonice (town)</td>
<td>4.68</td>
</tr>
<tr>
<td>Nová Vcelnice (town)</td>
<td>4.39</td>
</tr>
<tr>
<td>Studená</td>
<td>4.49</td>
</tr>
<tr>
<td>Chlum u Trebokie</td>
<td>3.91</td>
</tr>
<tr>
<td>Kardašova Recice (town)</td>
<td>3.62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.00</td>
</tr>
</tbody>
</table>

The municipalities owning the joint-stock company have already implemented several construction projects co-financed from the Phare funds and are therefore experienced in the Phare funding methodology and in the preparation of international tenders in keeping with the EU requirements.
The construction supervision will be provided by Mr. Zdenek Musil – an authorised engineer, the employee of Teplospol Jindrichuv Hradec, a.s.

5. Detailed Budget (MEUR)

<table>
<thead>
<tr>
<th></th>
<th>Phare</th>
<th>National co-financing share</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment Support</td>
<td>Institution Building</td>
<td>Total Phare (=I+IB)</td>
</tr>
<tr>
<td>Construction works</td>
<td>2,240</td>
<td>0,000</td>
<td>2,240</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0,750</td>
</tr>
<tr>
<td>Total</td>
<td>2,240</td>
<td>0,000</td>
<td>2,240</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0,750</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2,990</td>
</tr>
</tbody>
</table>

6. Implementation Arrangements

6.1 Implementing Agency

The Ministry for Regional Development in conjunction with the Centre for Regional Development CR.
PAO: RNDr. Jiří Horáček, director, Department of EU programmes, MRD CR
Address: Staromestské nám. 6, 110 15 Praha 1
Phone: + 420-2 2486 1398
Fax: + 420-2 2486 1415
Implementing Agency:
Director: RNDr. Ivo Ryšlavý
Address: Centre for Regional Development CR, Vinohradská 46, 120 00 Praha 2
Phone: + 420-2 21 580 285
Fax: + 420-2 21 580 229

6.2 Non-standard Aspects

The project will be managed using the methodology specified for Candidate Countries in the manual for the management of programmes supported from the EU sources – "Practical Guide for Phare, Ispa and SAPARD”.

6.3 Contracts (MEUR)
### 7. Implementation Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of contract</th>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Works contract</td>
<td>Construction works</td>
<td>2,990</td>
</tr>
</tbody>
</table>

**Start of tendering**: 07/2002  
**Start of project activities**: 01/2003  
**Project completion**: 07/2004

8. * The tender dossier shall be submitted to the European Commission six months after the signature of the Financing Memorandum at the latest (see FM, Chapter Implementation Arrangements).

### 9. Equal Opportunity

Principles and procedures applied during the project implementation will ensure equal opportunities for all participants of the project.

### 10. Environment

The project will have positive environmental impacts especially through reduced emissions in the border area and the use of the renewable energy sources. The respective Environmental Impact Assessment (EIA) is in compliance with the Council Directive 97/11/ES of 3 March 1997. The documents were prepared by a certified expert: ing. František Hezina – Naturchem, Ceské Budejovice. They are available at the investor’s office: Teplospol a.s. Jindrichuv Hradec, sídlište Vajgar 585/III, 377 01 Jindrichuv Hradec, ing. Zdenek Svacina, director.

### 11. Rates of Return

The economic rate of return is based on a prepared feasibility study. The period assessed was 14 years.

\[
\text{IRR} = 12.1\% 
\]

The feasibility study was prepared by: SEVEN Stredisko pro efektivní využívání energie – The Energy Efficiency Center), Slezká 7, 120 56 Praha 2, tel. (+420-2) 2424 7552, fax (+420-2) 2424 7597, e-mail: seven@svn.cz. It is available at the investor’s office: Teplospol a.s. Jindrichuv Hradec, sídlište Vajgar 585/III, 377 01 Jindrichuv Hradec, ing. Zdenek Svacina, director.

### 12. Investment Criteria

#### 12.1 Catalytic Effect

The project is of public nature and complies with the regional priorities. In the years to come, the action could not be implemented without support from the EU sources.
12.2 Co-financing

The co-financing share of the Czech party equals 25% of the total project investment costs. The co-financing is ensured from the investor’s/applicant’s own resources - a.s. Teplospol Jindrichuv Hradec.

12.3 Additionality

The project is of public nature and is not suitable for funding from public sources due to the low financial rate of return of the funds invested. Should the co-financing be provided from a bank loan, the implemented works would not generate resources sufficient for their renewal after their lifetime.

12.4 Project Readiness and Size

A land use decision is not required for the project implementation (see the opinion of the building office) as it involves a reconstruction of the current district heating system. The building permit will be issued by September 2001. The project conforms to all the required technical criteria. A feasibility study has been prepared. The tender dossier shall be prepared and submitted to the European Commission six months after signature of the Financing Memorandum at the latest.

12.5 Sustainability

Results of the feasibility study proved that the draft project is of a sustainable nature as it meets all the European norms and standards and complies with the EU legislation in the relevant area.

Within the feasibility study a detailed study on the availability of biomass in the region and of its market was prepared using the methodology of the Austrian federal minister for science and research. The analysis proved the existence of large sources of biomass in the region that can be used while adhering to the environmental protection and sustainable development principles. It also proved that, should the supplies of biomass produced by the "Kasalova pila" company become scarce, there are sufficient supplies of waste wood from other wood-working companies in the region available for very favourable prices.

The operating and maintenance costs will be covered by the investor.

12.6 Compliance with State Aid Provisions

The project and the award of the Phare subsidy are in compliance with the relevant rules on state aids as defined in the European Agreement; its implementation is not going to harm the market environment or the competition rules.

12.7 Contribution to National Development Plan

The project respects short-term and medium-term priorities of the National Development Plan with the aim of balancing the quality of the environment in areas bordering the EU countries. The project is in compliance with regional priorities and measures laid down in the cross-border regional development strategy defined in the Joint Programming Document (JPD) Czech Republic – Austria for the CBC Phare programmes.

Priority : V - Sustainable territorial development and environmental protection
Measure No.: 1 - Management of natural resources, technical infrastructure and renewable energy resources
12. Conditionality and Sequencing

The investor is responsible for the preparation of studies and project dossiers necessary for the execution of works, and for the preparation of documents for the selection of a contractor for the works. The investor must observe its commitment of financial participation in the project and is responsible for the quality of the works executed. He must also provide for the activities the contractor is not qualified to execute.

After the completion of the project the investor shall ensure the launching of full operation of the works with a view to its use. He shall ensure regular maintenance and repairs in compliance with the international standards.

Annexes to Project Fiche

1. Logframe matrix in standard format
2. Detailed project implementation time schedule
3. Time schedule for signatures of contracts and the linked schedule of quarterly payments for the whole duration of the programme (including the period when only withdrawals can be done from the respective Phare programme)
4. Reference to the feasibility study; environmental impact assessment
## Phare log frame

### LOGFRAME PLANNING MATRIX FOR Project

<table>
<thead>
<tr>
<th>Programme name and number</th>
<th>Phare CBC 2001</th>
<th>Czech Republic - Austria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracting period expires</td>
<td>Disbursement period expires</td>
<td></td>
</tr>
<tr>
<td>Total budget: MEUR 2,990</td>
<td>Phare budget: MEUR 2,240</td>
<td></td>
</tr>
</tbody>
</table>

### Objectively verifiable indicators

<table>
<thead>
<tr>
<th>Sources of Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurements, calculations</td>
</tr>
</tbody>
</table>

### Overall objective

- Sustainable and environment-friendly development of the border area
- Reduced emissions to the air along the Czech-Austrian border by 70.4 t/year

### Project purpose

- Improvement of the air quality in the adjacent Austrian part of the border area
- More efficient heat generation and supply
- Fuel savings and use of renewable sources of energy
- Better air quality at Jindrichuv Hradec
- Heat generation efficiency increased by 30%, installed capacity reduced by 8.4 MW, price of heat reduced by 15%
- Replacement of heavy fuel oil with bio-mass and natural gas
- Reduced emissions at Jindrichuv Hradec by 86% (144 t/year)

### Results

- District heating system at Jindrichuv Hradec – residential area "U nádraží" with a warm water boiler house using bio-mass and an auxiliary and stand-by gas fired unit
- 6 MW output; 80% heat generated from bio-mass and 20% from natural gas; heat supplied to 924 flats and SMEs, possibility to connect more customers to the system

### Sources of Verification

- Project Final Evaluation Report
- Project turn-over and acceptance documents
- Performance indicators of the heat generation sources and district heating system

### Assumptions

- The same number of connection points to the district heating system
- Reduced and stable price of heat consumed
- State-of-the-art technology meeting the required performance parameters
- Work delivered by an experienced and reliable contractor able to implement the contract without interrupting the warm water supply
- Good co-ordination of civil work progress and operation of the system
30 MW output; heat generated from natural gas; combined heat and power generation of 150 kW; heat supplied to 3703 flats, SMEs and swimming pools – also using solar energy for heating; possibility to connect more customers to the system.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Means</th>
<th>Assumptions</th>
<th>Preconditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery of civil work and equipment for the boiler house – &quot;U nádraži&quot; residential area</td>
<td>Design documentation</td>
<td>Existence of professional companies with a sufficient economic strength</td>
<td>Signature of the Financial Memorandum</td>
</tr>
<tr>
<td>Delivery of civil work and equipment for the boiler house – &quot;Vajgar&quot; and &quot;Hvezdárna&quot; residential areas – installation of 150 kW CCGT unit</td>
<td>Available funds</td>
<td>Good co-operation between the funder, contractor and IA</td>
<td></td>
</tr>
<tr>
<td>Conversion of the steam based system into warm water based system in the total length of 8,699 m</td>
<td>Construction resources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refurbishment of 15 heat exchanger stations and 135 exchanger stations inside residential buildings</td>
<td>Delivery of required technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation of 160 m² of solar panels</td>
<td>A/E supervision</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Implementation Time Chart

|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|

T: Tendering  
C: Contracting  
I: Implementation  
D: Disbursement
## Commitment Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Project</th>
<th>Allocation</th>
<th>Commitments (EUR)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>01</td>
<td>Construction</td>
<td>2 240 000</td>
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<td>0</td>
<td>0</td>
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<td></td>
<td><strong>TOTAL</strong></td>
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<td></td>
<td></td>
<td>2 240 000</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## Disbursement Schedule

<table>
<thead>
<tr>
<th>No.</th>
<th>Project</th>
<th>Allocation</th>
<th>Disbursements (EUR)</th>
<th></th>
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<th></th>
<th></th>
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<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Construction</td>
<td>2 240 000</td>
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Reference to Feasibility Studies

This project is aimed at the upgrade of two existing and independent district heating plants and systems at Jindrichuv Hradec. The oil-fired technology will be replaced with a modern technology based on bio-mass and natural gas. The proposed project is driven by the need to reduce the air pollution in the region situated in the vicinity of the Austrian border and it will have desirable environmental benefits.

Market Analysis

The market target group is 15,000 residents at Jindrichuv Hradec.

- The higher investment costs of the modern technology implemented will be set-off by savings of primary fuel resulting in reduced costs on fuel. The district heating market has a high growth potential due to its continuous expansion. Expected lower price of heat will result in retaining the existing customers and acquiring new ones. The analysis demonstrated the project sustainability. Siting of the new technology and district heating systems will have no impact on the existing titles and lease contracts therefore there is no risk of this kind.

Organisation of Operations

The upgraded district heating plants and systems will remain in the ownership of the project promoter and operator which is Teplospol a.s. Jindrichuv Hradec which is 100% municipal company. In this way, a high standard of plant and system operation will be ensured. Operating costs will be fully covered by revenues from heat sales and there is no risk that this would not be feasible.

Financial Analysis

IRR resulting from the financial analysis based on 15 years period is 12.1%. The analysis demonstrated that the project revenues taking into consideration expected increase in heat sales and lower consumer prices will be sufficient enough both to cover the operating costs and generate necessary funds for the project upgrade after the end of its life-time. The project is able to resist the moderate increase in gas prices. The potential risk poses a dramatic increase in gas price when the price of heat would be extremely high thus forcing the customers to stop buying heat from the district heating system. There are several potential suppliers of biomass in the region and the security of its supply does not pose any risk to the project.

This is a typical public services project and therefore it is not suitable for funding by private capital because of a low rate of return on capital engaged.

Economic Analysis

The project implementation will result in reduction of pollutants emitted to the air by 87% at Jindrichuv Hradec which, in absolute terms, correspond to 70.4 t/y at the Austrian side of the border region. The efficiency of heat generation and distribution will be increased by 30% resulting in fuel savings and on top of that a renewable source of energy – biomass – will be used. The project is in line with the medium-term national and regional
strategies and it will contribute to the sustainable regional development and environmental clean-up. The results of the Study demonstrated the project feasibility with not significant risks which could pose a threat to its implementation. The Project can be recommended for funding from the relevant EU programme.

Environmental Impact Assessment

Environmental Impact Assessment was carried out in compliance with Directive 97/11/EC of 3rd March 1997. It includes both environmental impacts during project construction and operation. The construction will have no significant environmental impacts. After the project commissioning there will be a significant reduction in CO\textsubscript{2} and SO\textsubscript{2} emissions but on the other hand there will be higher fly ash content in flue gas from biomass combustion and NO\textsubscript{x} from gas. Fly ash from biomass-fired boilers will be separated by filters and increase in NO\textsubscript{x} emissions will have no significant impact on the population. In general, the Project will improve the quality of the environment in the border region and it is recommended for implementation.