STANDARD SUMMARY PROJECT FICHE

1. Basic Information

1.2 Désirée Number: HU0015.05
1.2 Title: Biomass Heating Plants in Szombathely and Körmend
1.3 Sector: Cross-border co-operation
1.4 Location: Szombathely and Körmend, Vas county

2. Objectives

2.1 Wider Objectives:
- Reduction of greenhouse gas emissions in Vas county
- Increase of local income and employment

2.2 Immediate Objective:
Operation of district heating systems based on biomass fuel in the Szombathely and Körmend areas

2.3 Accession Partnership and NPAA priority
The project is in line with the medium–term environmental priorities of the Accession Partnership as stated in its chapter 3.2. It also reflects the environmental priorities of the NPAA

2.4 Contribution to National Development Plan
- The project proposal is in line with the priorities identified in the National Development Plan.
- This project is not geographically located in the NUTS II regions identified by the Hungarian Government for Economic and Social Cohesion under the Phare National Programme.

2.5 Cross Border Impact
- The project reflects the priority Sustainable Spatial and Environmental Development and belongs to the Resource management, Technical infrastructure and renewable energy Measure of the Joint Programming Document (JPD) Austria-Hungary 2000-2006 for Interreg III/A-Phare CBC.
- The European Centre for Renewable Energy is located on the Austrian side in Güssing that is the twin city of Körmend (the distance between the two towns is 20 km). The project has been based on a close and long-standing co-operation between the two cities in the field of renewable energy utilisation. The know-how of the European Centre for Renewable Energy may assist later to the establishment of a twin institution in Körmend.
- Several similar projects were recently carried out in the neighbouring region of Burgenland in Austria. Austrian technical experience will be adopted during project implementation as it has already been applied at the project design stage.
During project implementation, Hungarian staff will be trained on the basis of Austrian know-how.

The project will have a direct positive impact on the environmental condition of the neighbouring Austrian border areas.

The project is in harmony with the aims set by the Regional Development Plan of Western Transdanubian Region and of Vas County, and the relevant Small Region Development Plans.

3. Description

Hungary produces large quantities of biomass that could be used for energy generation. Only a small part of this is utilised now. It is desirable to change this situation in order to reduce energy imports, improve the global and local environment, promote technical development, and to create new jobs and income.

The project has two components concerning biomass fired heating plants at Körmend and Szombathely, respectively.

3.1 Background and justification:

Component I - Körmend

Recent investigations of an energy concept for Körmend municipality have been completed with support of the Austrian Ost-Öko-Fonds (ÖKK). The investigations confirmed that heat supply losses must be reduced and the number of district heat consumers must be increased. Furthermore, the use of the wood waste produced by furniture factories and other wood processing plants would significantly improve the Körmend district heating economy.

Component II - Szombathely

In 1995, the Hungarian Government requested the World Bank for assistance in preparing energy projects and laying the foundations of a national programme. The World Bank prepared the study entitled Hungary – Renewable Energy and Regional Development Project. It includes the Szombathely CHP and Biomass Development Project as one of its sub-projects. The study confirmed that the Szombathely heat supply system could be optimised by a combined natural gas/biomass fired plant. The optimal solution in Szombathely would include the following:

- a 18 MW\textsubscript{e} CHP capacity on natural gas basis;
- a biomass (wood chip) fired heating plant of 7.5 MW\textsubscript{th} capacity;
- the interconnection of some parts of the currently divided district heating network, and the extension of the network by connecting a few new big consumers.

The viability of the scheme has been further proven in two feasibility studies on Conversion of the Heating Plant of Huszar Street to Biomass Firing and Biomass Based CHP Production at the Falco Particleboard Plant, respectively.

3.2 Linked activities:

In addition to the World Bank study mentioned above, the project is based on the Phare study on a Complex Regional Development Plan of the Western Border Region of Hungary and the Phare-funded Proposal on Exploration and Use of Renewable Energy Sources for Austrian-Hungarian Energy Co-operation that were completed in 1997-98.
On the Austrian side of the border region, the Güssing Biomass Heating Plant and some other projects using renewable energy have been implemented. Güssing houses the European Centre of Renewable Energy a prime supplier of know-how in the field of renewable energy. Financed by the ÖKK a number of investigations on renewable energy use were made for the border regions.

### 3.3 Results:

**Component I - Körmend**

A biomass fired heating plant will be set up in Körmend with 3.5+1.5 MW$_{th}$ capacity. It will use about 6,300 MT biomass annually for producing 55,278 GJ/a heat. This output corresponds to about 75 percent of the current annual heat consumption. The plant will mainly use wood waste produced by the ADA furniture factory located near to the existing heating plant and by other wood processing plants within a 30-km radius. The Körmend natural gas fired plant would continue operation to cover peak load in winter.

**Component II - Szombathely**

A wood chip fired heating plant with 7.5 MW$_{th}$ capacity will be built in Szombathely near the Mikes-Pázmány residential area. The heating plant will be operated in co-ordination with the united district heating system and will produce about 118.5 GJ heat through firing some 12,000 MT wood chip and wood waste annually. All equipment required for operation will be included as will the necessary connections to the main project.

### 3.4 Activities:

For both components the following tasks must be accomplished:

1. Preparation of tender documents;
2. Construction work;
3. Procurement of machines and equipment, delivery, installation;
4. Technical supervision, test run, measurements, follow-up.

The first and third activities will be implemented within the frame of separate service contracts financed by the beneficiaries.

The construction works and the procurements will be carried out by two separate tendering and contracting operations. The first will cover the construction of the necessary buildings and will be financed from the beneficiaries’ financial resources The second will concern the supply of equipment for the two biomass fired heating plants for €2.3 million and will be financed by Phare.

### 4. Institutional Framework

The co-ordination between the components will be ensured by the West-Transdanubian Regional Development Agency.

**Component I - Körmend**

Employer/investor and owner of the project to be implemented: Municipality of the City of Körmend represented by József Honfi, Mayor of Körmend

Operator: RÉGIÓHO, Regional Heat Supply Ltd represented by István Németh, Managing Director
5. Detailed Budget (€ Million)

<table>
<thead>
<tr>
<th>Components</th>
<th>Phare Investment Support</th>
<th>Support Institution Building</th>
<th>Total Phare (I+IB)</th>
<th>National Co-financing*</th>
<th>IFI*</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of tendering documents</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.27</td>
<td>-</td>
<td>0.27</td>
</tr>
<tr>
<td>Construction works</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component I - Kömend</td>
<td>-</td>
<td>-</td>
<td>0.49</td>
<td>-</td>
<td></td>
<td>0.49</td>
</tr>
<tr>
<td>Component II - Szombathely</td>
<td>-</td>
<td>-</td>
<td>0.51</td>
<td>-</td>
<td></td>
<td>0.51</td>
</tr>
<tr>
<td>Procurement of machines and equipment</td>
<td>-</td>
<td>-</td>
<td>0.95</td>
<td>-</td>
<td></td>
<td>0.95</td>
</tr>
<tr>
<td>Component I - Kömend</td>
<td>0.95</td>
<td>-</td>
<td>1.35</td>
<td>-</td>
<td></td>
<td>1.35</td>
</tr>
<tr>
<td>Component II - Szombathely</td>
<td>1.35</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical supervision, test run, measurements, follow-up</td>
<td>-</td>
<td>-</td>
<td>0.30</td>
<td>-</td>
<td></td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2.3</td>
<td>-</td>
<td>2.3</td>
<td>1.57</td>
<td>-</td>
<td>3.87</td>
</tr>
</tbody>
</table>

*National co-financing will be ensured by the beneficiaries and will cover the preparation of tender documents, construction of necessary buildings as well as technical supervision, test run, measurements and follow-up in an amount of 1.57 MEUR.

6. Implementation Arrangements

6.1 Implementing Agency

The project will be implemented under the overall co-ordination and supervision of the Ministry of Agriculture and Regional Development, whose representative, Dr. Peter Szaló, Deputy State Secretary, will be designated as PAO.

The Ministry for Agriculture and Regional Development, through its Phare Regional Development IA (H-1016 Budapest, Gellérthegy u. 30-32), will be responsible for all aspects of tendering and contracting as well as administrative and financial matters of the implementation.
6.2 Twinning:

Not applicable.

6.3 Non-standard aspects

During the contract/tender procedures the DIS Manual and the FIDIC conditions of contract will be strictly followed in the case of the Phare supported activities.

6.4 Contracts

The first and third activities and the construction part of the second activity will be contracted separately according the relevant procurement rules of the beneficiaries. The supply part of the second activity will be covered by one contract with two lots, and will be carried out according to the rules of the DIS.

7. Implementation Schedule

<table>
<thead>
<tr>
<th>Component</th>
<th>Start of Tendering</th>
<th>Start of Project Activity</th>
<th>Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of tendering documents</td>
<td></td>
<td>September 2000</td>
<td>November 2000</td>
</tr>
<tr>
<td>Construction works</td>
<td>December 2000</td>
<td>April 2001</td>
<td>November 2001</td>
</tr>
<tr>
<td>Procurement of machines and equipment</td>
<td>December 2000</td>
<td>April 2001</td>
<td>December 2002</td>
</tr>
<tr>
<td>Technical supervision, test run, measurements, follow-up</td>
<td>November 2000</td>
<td>February 2001</td>
<td>March 2003</td>
</tr>
</tbody>
</table>

8. Equal Opportunity

In the whole process of the preparation and implementation of the project no discrimination between men and women will be made.

9. Environment

Component I - Körmend

The environmental impact of the project is summarised by the Energy Supply Concept of the City of Körmend. The following effects are expected through the substitution of natural gas of about 66,600GJ/a energy content by biomass:

- Reduction of CO₂ emission by about 5000 MT/a
- Reduction of air pollution: SO₂ emission by 940 kg/a, NOₓ by 110 MT/a.

About 6400 MT/a will be required for firing the plant, thereby reducing the depositing requirements of solid waste.
Component II - Szombathely

The main environmental impact of the component on the environment is the reduction of greenhouse gas emissions. It is calculated to total 47.432 MT/a CO₂. In addition, the following reductions of air pollutant emissions are expected:

<table>
<thead>
<tr>
<th>Change of local emissions</th>
<th>NOₓ</th>
<th>CO</th>
<th>Dust</th>
<th>SO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current situation</td>
<td>110,733</td>
<td>167,295</td>
<td>1,485</td>
<td>50,498</td>
</tr>
<tr>
<td>After project implementation</td>
<td>89,569</td>
<td>109,515</td>
<td>4,293</td>
<td>0</td>
</tr>
<tr>
<td>Reduction</td>
<td>21,164</td>
<td>57,780</td>
<td>2,807</td>
<td>50,498</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change of global emissions</th>
<th>NOₓ</th>
<th>CO</th>
<th>Dust</th>
<th>SO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current situation</td>
<td>261,040</td>
<td>297,761</td>
<td>41,169</td>
<td>447,334</td>
</tr>
<tr>
<td>After project implementation</td>
<td>89,569</td>
<td>109,515</td>
<td>4,293</td>
<td>0</td>
</tr>
<tr>
<td>Reduction</td>
<td>171,471</td>
<td>188,246</td>
<td>36,876</td>
<td>447,334</td>
</tr>
</tbody>
</table>

*) Regarding global emissions, reduction of load on the environment of substituted electricity production is also considered.

10. Rates of return

Component I - Kőrmend

The feasibility of the project has been investigated in the frame of the Energy Supply Concept of the City of Kőrmend. Furthermore an economic analysis was also made for the Phare CBC project in 1998. The results of the study are:

Internal rate of return: \( \text{IRR} = 20.42\% \)

Net present value\( ^* \): \( \text{NPV} = -323,000\) €

*At a discount rate of 8%

Component II - Szombathely

Detailed economic calculations are included by the feasibility study of this project that has been completed in 1999. The most important outputs of these calculations are:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>EIRR</th>
<th>FRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only economical</td>
<td>9.58</td>
<td>6.11</td>
</tr>
<tr>
<td>Economical and local emission</td>
<td>12.95</td>
<td>7.57</td>
</tr>
<tr>
<td>Economical and global emission</td>
<td>13.29</td>
<td>9.61</td>
</tr>
</tbody>
</table>

11. Investment criteria

11.1 Catalytic effect:

Due to above mentioned reasons, dissemination of projects using renewable energy is a very important and timely issue, however these projects can not be implemented on business basis only. The role of international funds here is to promote investments, which – supported by this way -
could be viable and demonstrating this solution, might give a push to other project implementations as well.

11.2 Co-financing:

The beneficiaries will fund some 40 percent of the project cost that will cover the preparation of tender documents, construction of necessary buildings as well as technical supervision, test run, measurements and follow-up.

11.3 Additionality:

The Phare aid does not displace any other financiers, it is necessary for project implementation. Should some ÖKK support be obtained, this may substitute some part of Hungarian public funds.

11.4 Project readiness and Size:

The value of the project complies with the minimum project size requirements. The feasibility study, a detailed environmental impact study and the design for approval have already been prepared for the project. The tender documentation will be prepared in the frame of the project prior to the commencement of construction works and procurements of assets.

11.5 Sustainability

Extension of use of renewable energy sources is definitely supported in the EU and this process will even speed up in the future. Objectives of the project exactly meet this guideline. Required renewable energy sources are available in long term, the heat market exists and will remain in the future. Expected price increase of fossil energy carriers may promote the sustainability of the project. As described in item 9, the project has a beneficial impact on the environment. Once the project is implemented, its operation and maintenance costs will be covered by the sale of heat and electricity produced.

11.6 Compliance with state aids provisions

Regarding project implementation, procurements and services will be performed as regulated by the DIS Manual. The state aid and competition provisions of the Europe Agreement will be respected during implementation.

11.7 Contribution to National Development Plan

Not applicable

12 Conditionality and sequencing

No conditionality is applicable. The sequencing will follow the implementation schedule.
ANNEXES TO PROJECT FICHE

1. Logical framework matrix in standard format
2. Detailed implementation chart
3. Contracting and disbursement schedule by quarter for full duration of programme
4. Reference to feasibility /pre-feasibility studies.
5. List of relevant Laws and Regulations
6. Reference to relevant Government Strategic plans and studies
<table>
<thead>
<tr>
<th>Wider Objective</th>
<th>Indicators of Achievement</th>
<th>Sources of Information</th>
<th>Assumptions and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of greenhouse gas emissions in Vas county</td>
<td>Use of about 12,000 MT/a biomass for 118 TJ/a heat production and Reduction of CO₂ emission by 47.432 MT/a in Szombathely</td>
<td>Consumption and measuring figures from IA reports</td>
<td></td>
</tr>
<tr>
<td>Increase of local income and employment</td>
<td>Use of about 6,300 MT/a biomass for 55,278 GJ/a heat production and reduction of CO₂ emission by 47,432 MT/a in Kőrmend</td>
<td>Regional statistics on employment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decrease of district heat prices in the Szombathely and Kőrmend areas</td>
<td>National statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New jobs at the heating plants in the Szombathely and Kőrmend areas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immediate Objectives</th>
<th>Indicators of Achievement</th>
<th>Sources of Information</th>
<th>Assumptions and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful operation of district heating systems based on biomass fuel in the Szombathely and Kőrmend areas</td>
<td>Number of customers served by the system</td>
<td>Progress reports of the IA</td>
<td>Biomass is available on competitive price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customer surveys</td>
<td>Market position of district heat is improved by the project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output of Projects</th>
<th>Indicators of Achievement</th>
<th>Sources of Information</th>
<th>Assumptions and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass fired heating plants in Szombathely and Kőrmend fully operational</td>
<td>Implementation completed according to specifications and schedules as outlined in tender documentation</td>
<td>Progress reports of beneficiary project managers on implementation and schedule</td>
<td>Financing sources will open in due time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Progress report of the IA and its Regional Office</td>
<td></td>
</tr>
</tbody>
</table>

**Inputs**

2,3 MEUR Phare contribution complemented with a Hungarian co-finance of 1,57 MEUR provided by the beneficiaries
# Biomass Heating Plants in Szombathely and Körmend

## Detailed Implementation Chart

<table>
<thead>
<tr>
<th>Component</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of tendering documents</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Construction works</td>
<td></td>
<td></td>
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<tr>
<td>Procurement of machines and equipment</td>
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<tr>
<td>Technical supervision, test run, measurements, follow-up</td>
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</tbody>
</table>

Legend:
- Design
- Tendering, contracting
- Implementation
## Biomass Heating Plants in Szombathely and Körmend

### Annex 3

#### Cumulative contracting and disbursement schedule (EUR)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,3</td>
<td>2,3</td>
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<td>2,3</td>
<td>2,3</td>
<td>2,3</td>
<td>2,3</td>
<td>2,3</td>
</tr>
<tr>
<td>Disbursement</td>
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<td>0</td>
<td>0</td>
<td>0,3</td>
<td>0,6</td>
<td>0,9</td>
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<td>1,5</td>
<td>1,8</td>
<td>2,3</td>
<td>2,3</td>
<td>2,3</td>
</tr>
</tbody>
</table>
Biomass Heating Plant in Szombathely and Körmend
Reference to Feasibility Study

Component I - Körmend

The Energy Supply Concept of Körmend (completed in June 1998) includes a separate chapter on the solution of district heat supply on biomass basis, which has been elaborated on feasibility level. It was made by ÖKO-Plan Ltd and t.r.b. Ltd Austria. The concept is found at the Mayor’s Office of the City of Körmend.
In addition to this, the Preliminary Plan of the Biomass Fired Heating Plant was also completed in July 1998. Beside the Mayor’s office mentioned above, it is available at the PHARE CBC Office (NyDRFT) in Sopron, Templom u. 4.

Component II - Szombathely

Within the frame of the Hungary – Renewable Energy and Development Project organized by the World Bank, the feasibility study of the Szombathely Cogeneration and Biomass Development Project was completed in March 1999. It was made by KWI Planungs- und Beratungsgesellschaft mbH & Co KG, Austria and EKFM Ltd Budapest. The study is available at the following places: Szombathely District Heat Supply Ltd., World Bank Budapest Mission, Office of EKFM Ltd. Budapest.
Biomass Heating Plant in Szombathely and Körmend
List of Relevant laws and Regulation

1. Decree of the Government No. 1107/1999 on energy conservation and increase of energy efficiency. It prescribes to increase the use of renewable energy sources up to 50 PJ/a until 2010. Par.14.a of the Annex of this order underlines the great importance of support of the increase of biomass use;

Annex 6

Biomass Heating Plant in Szombathely and Körmend
Reference to Relevant Government Strategic Plans and Studies

1. West-Transdanubian Complex Regional Development Concept;

2. Proposal on Exploration and Use of Renewable Energy Sources for Austrian-Hungarian Energy Cooperation (PHARE 1998);

3. Potential Use of Biomass in Hungary (Ministry of Economy – World Bank 1999);