Zakopane Municipality

Expansion and development of Geothermal Energy, Zakopane, Poland

Project Design Document
ANNEXES

Version 3.1
Prepared by AAEN A/S
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List of content

Page

1 Contact information on participants in the project activity 4

2 Information regarding public funding 7

3 Baseline information 8

3.1 Identification of methodology 8
3.1.1 Proposed methodology title 8
3.1.2 List of categories of project activity to which the methodology may apply 8
3.1.3 Condition under which the methodology is applicable 8
3.1.4 Potential strengths and weaknesses of the proposed methodology 8
3.2 Overall summary description 9
3.3 Choice of and justification as of baseline approach 10
3.3.1 General baseline approach 10
3.3.2 Justification of the approach chosen 10
3.4 Explanation and justification of the proposed new baseline methodology 11
3.4.1 Explanation of how the methodology determines the baseline scenario 11
3.4.2 Criteria used in developing the proposed baseline methodology 11
3.4.3 Project activities as additional scenario 11
3.4.4 National and/or sector policies and circumstances 12
3.4.5 Project boundary 12
3.4.6 Formulae/algorithms used to determine the baseline scenario 13
3.4.6.1 Step 1: Estimate Apparent Fuel Consumption in Original Units 14
3.4.6.2 Step 2: Convert to a Common Energy Unit 14
3.4.6.3 Step 3: Multiply by Emission Factor to Compute CO_2 emissions 15
3.4.7 Formulae/algorithms used to determine the emissions from the project activity 15
3.4.8 Potential leakage of the project activity 15
3.4.9 Formulae/algorithms used to determine the emissions reductions 15
3.5 Data sources and assumptions 16
3.5.1 Parameters and assumptions 16
3.5.2 List of data used indicating sources and precise references 16
3.5.3 Vintage of data 16
3.5.4 Spatial level of data 16
3.6 Assessment of uncertainties 17
3.7 Development of baselines 18

4 Monitoring plan 19

4.1 Identification of methodology 19
4.1.1 Title of the proposed methodology 19
4.1.2 List of categories of project activities to which the methodology may apply 19
4.1.3 Conditions under which the methodology is applicable 19
4.1.4 Potential strengths and weaknesses of the proposed new methodology 19
4.2 Proposed new monitoring methodology 20
4.2.1 Brief description of the proposed new methodology 20
4.2.2 Option 1: Monitoring of the emissions in the project and baseline scenario 20
4.2.3 Option 2: Direct monitoring of emission reductions 20
4.2.4 Treatment of leakage in the monitoring plan 21
4.2.5 Description of formulae used to estimate emission reductions 21
4.2.5.1 Step 1: Estimate Apparent Fuel Consumption in Original Units 21

4.2.5.2 Step 2: Convert to a Common Energy Unit 21
4.2.5.3 Step 3: Multiply by Emission Factor to Compute CO_2 emissions 22
4.2.6 Assumption used in elaborating the new methodology 22
4.2.7 Quality control (QC) and quality assurance (QA) procedures being undertaken 23
4.2.8 Methodology applied elsewhere 23

5 Glossary of terms 24

6 Stakeholders' comments 25

6.1 Comments by local stakeholders 25
6.2 Stakeholders comments 25

- Letter of Intend from Zakopane Municipality
- Letter of Intend from PEC Geotermia Podhalanska S.A.
- Letter of Endorsement from the Polish Ministry

1 Contact information on participants in the project activity

Organization:	Danish Ministry of the Environment
Street/P.O.Box:	Strandgade 29
Building:	Main building
City:	København K
State/Region:	Zealand
Postfix/ZIP:	DK-1401
Country:	Denmark
Telephone:	+45 32 66 01 00
FAX:	+45 32 66 04 79
E-Mail:	igp@mst.dk
URL:	www.mst.dk
Represented by:	Ms. Inge Gerhardt Pedersen
Title:	Chief Programme Coordinator
Salutation:	Dear Ms….
Last Name:	Pedersen
Middle Name:	Gerhardt
First Name:	Inge
Department:	Danish Environmental Protection Agency
Mobile:	-
Direct FAX:	+45 32 66 01 00
Direct tel:	+45 86-17-50-55
Personal E-Mail:	igp@mst.dk

Organization:	Polish Ministry of the Environment
Street/P.O.Box:	Ul. Wawelska 52/54
Building:	Main building
City:	Warszawa
State/Region:	
Postfix/ZIP:	PL-00-922
Country:	Poland
Telephone:	+48 225792466
FAX:	+48 225792217
E-Mail:	agnieszka.galan@mos.gov.pl
URL:	www.mos.gov.pl
Represented by:	Ms. Agnieszka Galan
Title:	Senior Inspector
Salutation:	Dear Ms….
Last Name:	Galan
Middle Name:	
First Name:	Agnieszka
Department:	Department of Environmental Protection Instruments
Mobile:	-
Direct FAX:	+48 225792217
Direct tel:	+48 225792466
Personal E-Mail:	agnieszka.galan@mos.gov.pl

Organization:	National Fund for Environmental Protection and Water Management
Street/P.O.Box:	Konstruktorska 3A
Building:	Main building
City:	Warsaw
State/Region:	Mazowieckie
Postfix/ZIP:	PL-02-673
Country:	Poland
Telephone:	+48 22 4590 254
FAX:	+48 22 849 20 98
E-Mail:	j.kozakiewicz@nfosigw.gov.pl
URL:	www.nfosigw.gov.pl/site/
Represented by:	Ms. Jolanta Kozakiewisz
Title:	Project Co-ordinator
Salutation:	Dear Ms....
Last Name:	Kozakiewisz
Middle Name:	-
First Name:	Jolanta
Department:	-
Mobile:	-
Direct FAX:	+48 22 849 20 98
Direct tel:	+48 22 4590 504
Personal E-Mail:	j.kozakiewicz@nfosigw.gov.pl

Organization:	AAEN Polska Sp. z o.o
Street/P.O.Box:	Asylvej 19
Building:	Main building
City:	Risskov
State/Region:	Jutland
Postfix/ZIP:	DK-8240
Country:	Denmark
Telephone:	+45 86-17-50-55
FAX:	+45 86-17-33-52
E-Mail:	aaen@aaen-consulting.com
URL:	www.aaen-consulting.com
Represented by:	Mr. Sven Aaen
Title:	General Manager
Salutation:	Dear Mr....
Last Name:	Aaen
Middle Name:	-
First Name:	Sven
Department:	100 % owned by the Mother Company: AAEN Consulting Engineers A/S
Mobile:	-
Direct FAX:	+45 86-17-33-52
Direct tel:	+45 86-17-50-55
Personal E-Mail:	sa@aaen-consulting.com

Organization:	Zakopane Municipality
Street/P.O.Box:	Ul. Kościuszki 13
Building:	Main building
City:	Zakopane
State/Region:	Podhale Region
Postfix/ZIP:	Pl-34-500
Country:	Poland
Telephone:	+48 (0-18) 20-20-424
FAX:	+48 (0-18) 20-20-455
E-Mail:	office@um.zakopane.pl
URL:	www.um.zakopane.pl
Represented by:	Mr. Krzysztof Owczarek
Title:	Vice Mayor
Salutation:	Dear Mr....
Last Name:	Owczarek
Middle Name:	-
First Name:	Krzysztof
Department:	Environmental Engineering and Protection
Mobile:	-
Direct FAX:	+48 (0-18) 20-20-455
Direct tel:	+48 (0-18) 20-20-424
Personal E-Mail:	office@um.zakopane.pl

Organization:	PEC Geotermia Podhalanska S.A.
Street/P.O.Box:	Ul. Nowotarska 35 a
Building:	Main building
City:	Zakopane
State/Region:	Podhale Region
Postfix/ZIP:	Pl-34-500
Country:	Poland
Telephone:	+48 (0-18) 20-15-041
FAX:	+48 (0-18) 20-15-044
E-Mail:	wiktor@geotermia.pl
URL:	www.geotermia.pl
Represented by:	Mr. Wiktor Lukaszczyk
Title:	President
Salutation:	Dear Mr....
Last Name:	Lukaszczyk
Middle Name:	-
First Name:	Wiktor
Department:	-
Mobile:	-
Direct FAX:	+48 (0-18) 20-15-044
Direct tel:	+48 (0-18) 20-15-041
Personal E-Mail:	wiktor@geotermia.pl

2 Information regarding public funding

There is no Official Development Assistance in this project.

3 Baseline information

3.1 Identification of methodology

3.1.1 Proposed methodology title

The proposed new baseline methodology titled: "Estimated CO_2 emission from energy production based on fossil fuel combustion" has been applied.

The stepwise calculations specified in the "Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories" has been used to present the results of the above mentioned proposed new baseline methodologies. Furthermore, the "Clean Development Mechanism Proposed New methodology: Baseline (CDM-NMB) version 01 – in affect as of 1st of July 2004" has been used to supply the list of content for this chapter of the PDD.

3.1.2 List of categories of project activity to which the methodology may apply

For all of the activities within the project boundaries described in section B.5 this methodology is applicable.

3.1.3 Condition under which the methodology is applicable

This section includes explanation to the conditions under which the methodology is applicable to the project activity.

It is a fact that environmental policy in general have high priority in Poland and that a large amount of money and manpower has been on the national budget for to implement guidelines for environmental goals to be accomplished. However, lack of funds gives natural boundaries for the speed of environmental improvements. Considering the financial situation in Poland no major changes in the environmental policy are expected within the next 10 years as condition for the applied methodology. As example no sudden national requirements for establishment and funds for construction concerning fuel conversion from fossil fuel based energy production into geothermal energy production are expected implemented in Poland.

3.1.4 Potential strengths and weaknesses of the proposed methodology

Some of the major potential strengths of the proposed methodology are listed below:

Simplification	Only one potential scenario is expected to be considered as described in section B. Several scenarios would have made the comparison to the calculated baseline emission reduction more complex.
Measurements	The proposed baseline scenario only includes calculations of given registered heat consumption.

Some of the major potential weaknesses of the proposed new methodology are listed below:

Geothermal heat production	Geothermal heat production itself is a complicated procedure to be foreseen or calculated in advance as described in this application. Since the emission reduction anyway is calculated from the baseline situation and JI-funds will be paid according to these calculations, some corrections to the payment can be anticipated.
Future planning	There will always be some degree of uncertainty connected to how the future planning locally will be. However, considering the situation described in section H.3.1.3 no major changes can be expected.

3.2 Overall summary description

The methodology is a financial test and the methodology is applied in the following steps:

1. Draw up a list of possible baseline scenarios.
2. Reduce the list of possible scenarios by eliminating those that are not possible because not permissible under applicable law or not possible from practical and/or technical point of view.
3. For all possible alternatives, calculate a conservative (with the interpretation of conservative being defined below) project economy, not taking carbon finance into account. The calculation must include the incremental investment costs, the O&M costs and all other costs of implementing the technology of alternative. It must include all revenues generated by the implementation of the technology except carbon revenues.
   The project economy is calculated conservatively if the assumptions made tend to increase the payback time of the project scenario instead of decreasing it. To ensure this, values that tend to lead to a increased payback time should be used for all assumptions and for all alternatives, i.e. costs of low estimate and revenues a high estimate. Conservatism of these assumptions should be ensured by obtaining expert opinions and by the Operational Entity validating the project.
4. Determine that the project payback time for all calculated scenarios is clearly and significantly shorter than a conservatively expected and acceptable payback time for a comparable investment project in the country in question.
5. Conclude that the other possible scenarios are economically unattractive and that the BAU is the most likely baseline scenario.
6. Calculate baseline emissions. Describe assumptions and parameters used.

3.3 Choice of and justification as of baseline approach

This section includes choice of and justification as to why one of the baseline approaches listed in paragraph 48 of CDM modalities and procedures is considered to be the most appropriate.

3.3.1 General baseline approach

Paragraph 48 of the CDM modalities and procedures is shown below:

"48. In choosing a baseline methodology for a project activity, project participants shall select from among the following approaches the one deemed most appropriate for the project activity, taking into account any guidance by the executive board, and justify the appropriateness of their choice:

a) Existing actual or historical emissions, as applicable; or
b) Emission from a technology that represents an economically attractive course of action, taking into account barriers to investment; or
c) The average emissions of similar project activities undertaken in the previous five years, in similar social, economic, environmental and technological circumstances, and whose performance is among the top 20 per cent of their category."

Approach b) is chosen and has been referred to as "a financial test" as written in section 3.2. Approach b) has been chosen because the used technology for the gas utilization plants represents an economically attractive course of action since there is a potential income related to the selling of the produced heat and electricity. However, there is a major barrier in relation to the investment. The plants are expensive to establish, but the project economy can be feasible if grants are obtained. In this case the grants are expected for the Danish Ministry in relation to the emission reduction, but also grants from Polish national funds will be needed before the economy is feasible. Furthermore, please refer to Chapter B.3.3 concerning the project economy.

3.3.2 Justification of the approach chosen

The approach chosen in section 3.2 is considered the most appropriate since the project includes modern technologies representing an economically attractive course of action, taking into account barriers to investment such as the need for additional funding for the project to be feasible.

3.4 Explanation and justification of the proposed new baseline methodology

3.4.1 Explanation of how the methodology determines the baseline scenario

This section includes indication of the scenario that reasonably (most likely) represents the anthropogenic emission by sources of GHG's that would occur in the absence of the proposed project activity.

Below are comments concerning likelihood listed for the in section B.3.1 mentioned potential numbers of technical treatment possibilities (scenarios).
A number of technical possibilities for energy production as possible baseline scenarios have been identified as described below with brief description of the single technologies.

a) Fossil based energy production: This is the most common energy production in Poland. The present development of PEC Geotermia Podhalanska will only very slowly if at all eliminate the remaining fossil fuel based energy production in Zakopane and Nowy Targ.
b) Hydropower energy production: Is already present in Zakopane. However, with at limited capacity and with no feasible possibility of expansion.
c) Waste Incineration energy production: The collected waste is brought to an incineration plant for combustion. The chemical components for the possible methane generation will be combusted during the incineration process. However, with the limited amount of waste in Zakopane this will not be a feasible possibility.
d) Methane gas energy production: The methane production from the deposited waste can be collected and used for energy production. Project is ongoing. However, with the limited amount of waste in Zakopane this will only contribute with less than 1 % of the total needed energy production in the area.
e) Georhermal energy production: The proposed project.

3.4.2 Criteria used in developing the proposed baseline methodology

Conditions and assumptions given under section B concerning the baseline are used to elaborate the proposed methodology.

3.4.3 Project activities as additional scenario

This section includes explanation of how, through the methodology, it can be demonstrated that a project activity is additional and therefore not the baseline scenario as indicated in section B.3 of the CDM-PDD. Section B.3 of the CDM-PDD is shown below:

"B.3. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity.
Explanation of how and why this project is additional and therefore not the baseline scenario in accordance with the selected baseline methodology. Include 1) a description of the baseline scenario determined by applying the methodology, 2) a description of the project scenario, and 3) an analysis showing why the emissions in the baseline scenario would likely exceed emissions in the project scenario."

1) Baseline scenario:
The baseline scenario can be described as follows:
"No new consumer connections in Zakopane, no new boreholes and no new distribution pipeline to Nowy Targ and thus the unimpeded release of CO_2 to the atmosphere until some future time when the expansion and development of geothermal energy becomes required by law or becomes an economically attractive course of action."

2) Project scenario:
The project scenario can be described as indicated in the project title:
"Expansion and development of Geothermal Energy, Zakopane, Poland"

3) Analysis:
All of the produced CO_2 will be released to the atmosphere in the baseline scenario and all of the otherwise produced CO_2 from fossil fuel based energy production now replaced with geothermal energy will be saved. Thereby the emissions in the baseline scenario will exceed emissions in the project scenario.

3.4.4 National and/or sector policies and circumstances

This section includes descriptions to how the national and/or sector policies and circumstances can be taken into account by the methodology.

See section H.3.1.3.

3.4.5 Project boundary

This section includes description of the project boundaries concerning gasses and sources included as well as physical delineation.

In section B.5 graphical delineations of the physical project boundaries are shown.

The table below illustrates the emissions identified related to the project boundaries and indicates which of these are included in the calculations of emissions in the baseline and the project scenario. Only the direct and indirect on-site emissions are included. Other possible emissions not included are assessed as insignificant or not attributable to the project.

Summary of system and project boundaries	Emissions within the Project scenario	Emissions within the Baseline scenario	GHG reduction
Direct, on-site	Geothermal energy production replacing fossil fuel based energy production gives no release of CO_2	Uncontrolled release of CO_2	Calculated/included
Direct, off-site	Transport of project equipment to project site	None	Assumed so small compared with the overall emission reduction and can be neglected. (Excluded)
Indirect, on-site	a) Emission from the use of electricity at the plants. b) Emission from gas and oil at the plant. c) Emission from construction of the project.	a) Emission from the use of electricity at the plants.	a) Assumed unchanged (excluded) b) Assumed so small compared with the overall emission reduction and can be neglected. (Excluded)
Indirect, off-site	Transport of fuel and chemicals to and from the plants	Transport of fuel and chemicals to and from the plants	Assumed unchanged (excluded)

3.4.6 Formulae/algorithms used to determine the baseline scenario

This section includes descriptions for to elaborate and justify formulae/algorithms used to determine the baseline scenario such as variables, fixed parameters and values to be reported as for example fuels used and fuel consumption rates.

Given the special conditions of the project there is no need for to determine the baseline scenario beyond the description shown below and the ones specified in chapter 3.7 since the emission reduction is given directly as described in chapter E.5 and 3.4.9.

The IPCC methodology breaks the calculations of CO_2 emissions from fuel combustion into 6 steps:

Step 1: Estimate Apparent Fuel Consumption in Original Units
Step 2: Convert to a Common Energy Unit
Step 3: Multiply by Emission Factors to Compute the Carbon Content
Step 4: Compute Carbon Stored
Step 5: Correct for Carbon Un-oxidized
Step 6: Convert Carbon Oxidized to CO_2 Emissions

However the IPPC methodology is specified to calculate a national CO_2 emission. Therefore by introducing an overall Emission Factor (tons of CO_2 equivalents / MWh) replaces step 3 till 6 into one new step 3:

Step 3: Multiply by Emission Factor to Compute CO_2 emissions

3.4.6.1 Step 1: Estimate Apparent Fuel Consumption in Original Units

Below are shown the estimated sale of heat throughout the years 2004 till 2012.

Year	2005	2006	2007	2008	2009	2010	2011	2012
Heat sale in TJ/year	280	333	386	440	493	510	510	510

The above heat sale has conservatively been set equal to the needed fuel consumption in a local coal, oil or gas based heat production.

Distribution of fuel usage in Zakopane (% of users)			
coal / coke	heating oil	natural gas	electric energy
41%	19%	40%	< 1%
40%	**20%**	**40%**	Excluded

The above distribution is based on the accumulated expected heat sale for consumers in the project area (Geotermia pl.). The utilization of electricity for heating is 0,6 % of the marked and has been excluded in further calculations.

Heat production efficiencies in Zakopane (Household boiler installations)		
coal / coke	heating oil	natural gas
60%	**70%**	**70%**

The above distribution of heat production efficiencies is based valid for the project area of conversion from fossil fuel to geothermal energy supply in Zakopane.

Emission factors for fossil fuel (CO2 kg/GJ)		
coal / coke	heating oil	natural gas
100 kg/GJ	**78 kg/GJ**	**60 kg/GJ**

The chosen CO2 emissions factors comply with commonly accepted emission factors for combustion of coal, oil and natural gas.

3.4.6.2 Step 2: Convert to a Common Energy Unit

The energy unit of TJ is a common Energy Unit. However, it has been chosen to convert the TJ into MWh to comply with the given emission factor shown in next step. Below are shown the estimated apparent fuel consumption in common Energy Unit MWh. Phase 0 is the present heat production. Phase 1 is the expected extra heat production by introducing the phase 1 of this JI-project. A possible phase 2 with is not included in this JI- project.
Conversion factor 278 MWh/TJ has been used.

Phase	Unit	2005	2006	2007	2008	2009	2010	2011	2012
0 (2005 figures)	MWh/year	77778	77778	77778	77778	77778	77778	77778	77778
1 (Zakopane)	MWh/year	0	14777	29553	44330	59106	63784	63784	63784

3.4.6.3 Step 3: Multiply by Emission Factor to Compute CO_2 emissions

The factor 0,444 t CO2 e / MWh have been used as emission factor equivalent to the CO_2 emission intensity of thermal energy replaced. Please refer to chapter 3.5.1. Thereby the CO_2 emissions from the replaced thermal energy can be computed as shown below.

Phase	Unit	2005	2006	2007	2008	2009	2010	2011	2012
0 (2005 figures)	tCO2e/year	34533	34533	34533	34533	34533	34533	34533	34533
1 (Zakopane)	tCO2e/year		6311	12622	18932	25243	27320	27320	27320
Total emission reduction (phase 1)	1000 tCO2e/year	0	6	13	19	25	27	27	27

3.4.7 Formulae/algorithms used to determine the emissions from the project activity

This section includes descriptions for to elaborate and justify formulae/algorithms used to determine the emissions from the project activity such as variables, fixed parameters and values to be reported as for example fuels used and fuel consumption rates.

In general potential emission from project activity could for example be increased emission from energy production. But in this project the production emissions per heat unit will be reduced corresponding to the increased in heat sale and therefore the emission from the project activity is not applicable.

Given the special conditions of the project the emission from the project activity are calculated from specific energy consumption no the production plants.

3.4.8 Potential leakage of the project activity

As defined in section B "Glossary of the CDM-terms" of the CDM-PDD:

"Leakage is defined as the net change of anthropogenic emission by sources of greenhouse gasses (GHG) which occurs outside the project boundary, and which is measurable and attributable to the CDM project activity."

No considerable leakage is expected either measurable or attributable to the JI project activity and the baseline methodology do therefore not addresses to the potential leakage of the project activity.

3.4.9 Formulae/algorithms used to determine the emissions reductions

This section includes descriptions for to elaborate and justify formulae/algorithms used to determine the emissions reductions from the project activity such as variables, fixed parameters and values to be reported as for example fuels used and fuel consumption rates.

Given the special conditions of the project the emissions reductions can be calculated directly and all formulas and algorithms used to determine the emission reduction are elaborated and justified in section E.6.

3.5 Data sources and assumptions

3.5.1 Parameters and assumptions

Below is a list of parameters which have no additional comments in the main section of this application including assumptions described, emission factors and activity levels.

Parameter	Figure given	Unit	Comments
Fossil fuel based energy production	444	kg CO2/MWh	Given from standard emissions in several literatures concerning general assumptions. General efficiency and percentage of the local production has been taken in consideration.

3.5.2 List of data used indicating sources and precise references

This section includes list of data used indicating sources and precise references and justify the appropriateness of the choice of such data as for example official statistics, expert judgment, proprietary data, IPCC, commercial and scientific literature.

Please refer to section H.3.5.1, which also includes the above mentioned examples when ever they have been used.

3.5.3 Vintage of data

This section includes explanations concerning vintage of data for example relative to the starting date of the project activity.

Below are listed data used for the calculation of the expected emission reduction including comments concerning vintage of the data relative to the starting date of the project activity:

- Heat sale amount are up until and including the year 2005 and no new data will be available prior to the expected starting date of the project activity.
- Division of energy sources utilized in local consumer boilers in Zakopane.
- Efficiency of energy production in local consumer boilers in Zakopane.
- Standard emissions factors for CO2 emissions from combustion of fossil fuels.

3.5.4 Spatial level of data

This section includes a description of the spatial level of data locally, regional and national.

Locally data has been collected from the geothermal energy production facility company.

Regional data has been collected concerning amount of inhabitants and tourists in Podhale region.

National data has been collected to be able to compare with other fossil fuel based DH plants.

3.6 Assessment of uncertainties

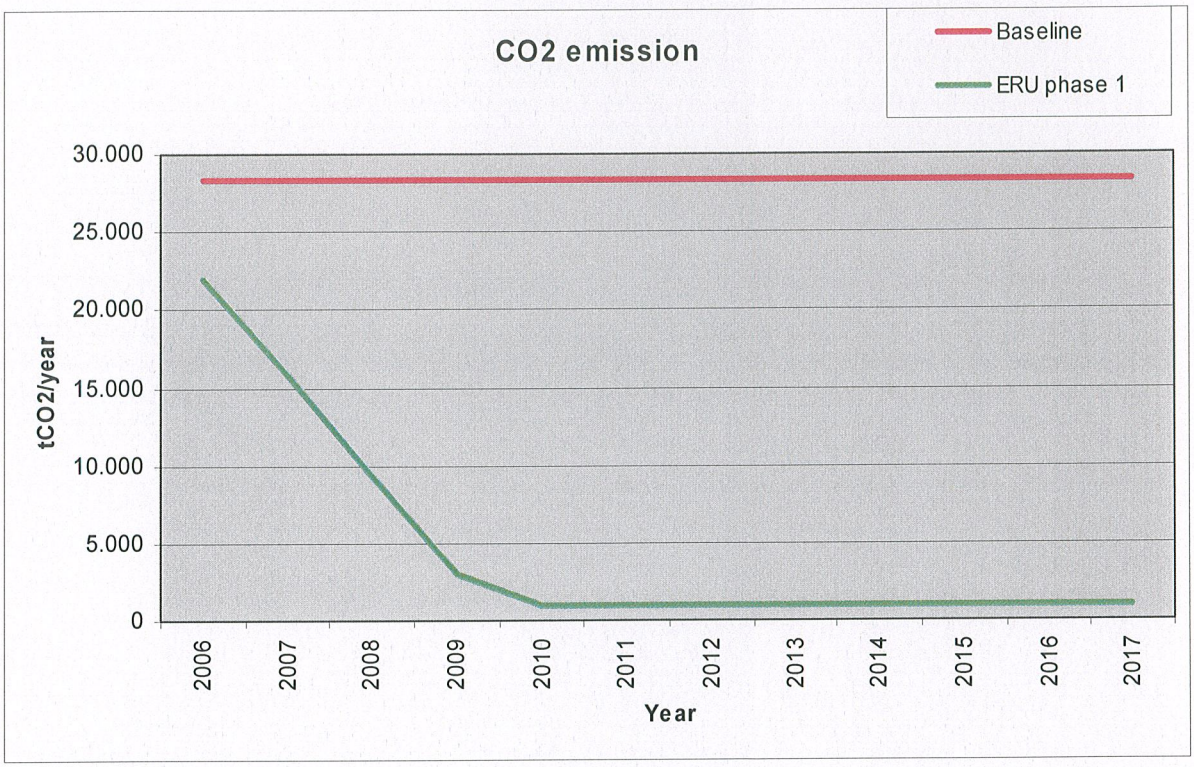
This section includes assessment of uncertainties inclusive sensitivity to key factors and assumptions.

Please refer to section H.3.5.1, which also includes the above mentioned.

3.7 Development of baselines

This section includes explanation of how the baseline methodology allows for the development of baselines in a transparent and conservative manner.

The first equipment within phase 1 is expected implemented and in operation mid fall of 2006 and below is shown the baseline emission (red line), as calculated in Annex 3.4.6.2., from 2006 till 2017 together with expected emission reductions.



All of the expected replaced thermal energy including phase 1 represents 510-280 = 230 TJ or 63.784 MWh/year equal to 27.320 tCO_2e/year. In year 1 (2006) the CO_2 emission has been reduced with 6.311 tCO_2e/year. When phase project is fully implemented the CO_2 emission has been reduced additionally with 27.320 tCO_2e/year.

The basic formula for CO_2 emission reduction projects is:

Emission reduction = Baseline emission – Project emission

However, as described in Annex 3.4.7 no significant emission from the project activity (leakages) are expected and thereby the Project emission can be considered as equal to zero. Thereby, the emission reduction equals the project related baseline emission during the operation of the project plant. The emission reduction from 2006 till 2012 is shown in chapter E.6.2.

4 Monitoring plan

4.1 Identification of methodology

4.1.1 Title of the proposed methodology

The proposed new monitoring methodology titled: "Monitoring of the GHG emission reduction generated by replacing fossil fuel combustion with geothermal based DH" has been applied.

4.1.2 List of categories of project activities to which the methodology may apply

For all of the activities within the project boundaries described in section B.5 this methodology is applicable.

4.1.3 Conditions under which the methodology is applicable

This section includes explanation concerning conditions under which the methodology is applicable to the project activity.

Given the baseline situation described in section B this methodology is applicable.

4.1.4 Potential strengths and weaknesses of the proposed new methodology

Some of the major potential strengths of the proposed new methodology are listed below:

Simplification	Only comparison to the calculated baseline emission reduction is needed for to monitor the project results.
Measurements	Almost all of the proposed monitoring points needed for to calculate the emission reduction will be needed anyway in a normal operation of the plants for to optimize production.

Some of the major potential weaknesses of the proposed new methodology are listed below:

Amount of monitored data	A large amount of data must be monitored, reported and stored. But this will be no larger problem because of modern computer monitoring, reporting and backup facilities.
Continuously registration of data	A continuously registration of the monitored data will be needed. For the security of this continuation there will be need for power back-up systems for the modems transmitting the information in case of power failure. This is technical no problem but causes some establishment, operation and maintenance costs, which could have been lower in case of no continuous registration was needed.

4.2 Proposed new monitoring methodology

4.2.1 Brief description of the proposed new methodology

The proposed new methodology is based on a monitoring plan corresponding with the procedure described below and with result directly comparable with figures given in the baseline.

1. Fixed heat sale by the start of the JI-project
2. Heat sale beyond the sale of the fixed heat sale by the start of the JI-project
3. Substituted fossil fuel based heat production
4. Equivalent emission reduction

4.2.2 Option 1: Monitoring of the emissions in the project and baseline scenario

Option 1 has not been applied for this project. Therefore the following sections have been excluded in this application:

- Data to be collected in order to monitor emissions from the project activity, and how this data will be archived
- Description of formulae used to estimate project emissions (for each gas, source, formulae/algorithm, emissions units of CO_2 equ.)
- Relevant data necessary for determining the baseline of anthropogenic emissions by sources of GHGs within the project boundary and how such data will be collected and archived
- Description of formulae used to estimate baseline emissions (for each gas, source, formulae/algorithm, emissions units of CO_2 equ.)

Instead option 2 concerning direct monitoring of emission reductions has been applied as described in the following section.

4.2.3 Option 2: Direct monitoring of emission reductions

Below are listed those figures, which directly will be monitored for to calculate the emission reduction directly from the project activity. The values monitored and calculated from those are consistent and directly comparable with those in section E.

Data to be collected

Below are listed the data to be collected in order to monitor emissions from the project activity, and how this data will be archived.

ID number	Data variable	Source of data	Data unit	Measured (M), calculated (C) or estimated (E)	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)	For how long is archived data to be kept?	Comment
1.01	*Heat sale*	*Heat meters*	*MWh/ year*	*M*	*Continuous*	*100%*	*Electronic*	*	**

* Data will be kept till 2 years beyond the project crediting period.

** Data will be aggregated monthly and yearly.

Description of formulae used to calculate project emissions
Since option 2 concerning direct monitoring of emission reductions from the project activity no monitoring or calculations will be performed concerning the project emissions. However, the emission reduction itself will be monitored and calculated. Therefore no comments has been implemented concerning description of formulae used to calculate project emissions, sources, formulae/algorithm, emissions units of CO_2 equivalents.

4.2.4 Treatment of leakage in the monitoring plan

No leakage is anticipated in advance. However, if leakage is detected it will be monitored, recorded and considered in calculation of the total emission reduction. Because of this no comments has been implemented for this section and the following section has been excluded in this application:

- If applicable, please describe the data and information that will be collected in order to monitor leakage effects of the project activity
- Description of formulae used to estimate leakage (for each gas, source, formulae/algorithm, emissions units of CO2 equ.)

4.2.5 Description of formulae used to estimate emission reductions

Below are listed figures measured as well as figures calculated including formulae used to estimate emission reductions for the project activity. Formulae/algorithm, emission units of CO_2 equivalents.

4.2.5.1 Step 1: Estimate Apparent Fuel Consumption in Original Units

Below are schedule to be filled in with sale of heat throughout the years 2006 till 2012.

Year	Unit	2006	2007	2008	2009	2010	2011	2012
A1 = Phase 1 heat sale (additional)	TJ/year							
A2 = Phase 2 heat sale (additional)	TJ/year							

The above heat sales will conservatively be set equal to the needed fuel consumption in a fossil fuel based heat production. Thereby, the heat loss from the energy production based on fossil fuel has not been taken into consideration.

4.2.5.2 Step 2: Convert to a Common Energy Unit

The energy unit of TJ is a common Energy Unit. However, it has been chosen to convert the TJ into MWh to comply with the given emission factor shown in next step. Below are shown the schedule to be filled in with estimated apparent fuel consumption in common Energy Unit MWh/year. Phase 0 is the present heat production. Phase 1 is the expected extra heat production by introducing the phase 1 of this JI-project and phase 2 is the expected extra heat production by introducing the phase 2 of this JI- project. Conversion factor of B = 278 MWh/TJ has been used. Below scheme can easily be filled in with the values of C1 = A1 * B and C2 = A2 * B giving the heat sate in MWh/year for each of the phases.

Phases	Unit	2006	2007	2008	2009	2010	2011	2012
C1 = Phase 1 heat sale (additional)	MWh/year							
C2 = Phase 2 heat sale (additional)	MWh/year							

4.2.5.3 Step 3: Multiply by Emission Factor to Compute CO_2 emissions

The factor D = 0,444 t CO2 e / MWh have been used as emission factor equivalent to the CO_2 emission intensity of thermal energy replaced. Please refer to chapter 3.5.1. Thereby the CO_2 emissions from the replaced thermal energy can be computed and filled in the below scheme with the values of E1 = C1 * D and E2 = C2 * D giving the emission reduction from each of the phases and F = (E1 + E2) giving the total emission reduction in 1000 tCO_2e/year.

Phase	Unit	2006	2007	2008	2009	2010	2011	2012
E1 = Phase 1 emission reduction	tCO2e/year							
E2 = Phase 2 emission reduction	tCO2e/year							
F = Total emission reduction	1000 tCO2e/year							

4.2.6 Assumption used in elaborating the new methodology

Conditions and assumptions given under section B concerning the baseline are used to elaborate the new methodology.

4.2.7 Quality control (QC) and quality assurance (QA) procedures being undertaken

The below table describes how the QC and QA procedures are expected being undertaken for the data monitored in section D.3.

Data *	Uncertainty level of data (High/Medium /Low)	Are QA/QC procedures planned for these data	Outline explanation why QA/QC procedures are or are not being planned.
D3.1.01	Low	Yes	Heat meters will be subject to a regular maintenance and testing regime to ensure accuracy Expected accuracy for heat exchangers measured heat consumption is > 95 %.

* Indicated table and ID numbers referring to the table in section D.3.

4.2.8 Methodology applied elsewhere

This section could include information if the methodology has been applied successfully elsewhere and, if so, in which circumstances. However, the methodology has not been applied elsewhere.

5 Glossary of terms

AAU	=	Assigned Amount Unit
BAU	=	Business as Usual
CER	=	Contract Emission Reduction
CHP	=	Combined Heat and Power
CO_2	=	Carbon Dioxide
DEPA	=	Danish Environmental Protection Agency
DH	=	District heating
ERU	=	Emission Reduction Unit
EPA	=	Environmental Protection Agency with offices in each country
GHG	=	Green House Gasses
IPCC	=	Intergovernmental Panel on Climate Change
JI	=	Joint Implementation Project according to Article 6 in the Kyoto Protocol
MoU	=	Memorandum of Understanding between countries
MP	=	Monitoring Plan
MWh	=	Mega Watt hour
O&M	=	Operation and Management
PIN	=	Project Identification Note
PDD	=	Project Design Document
QA	=	Quality Assurance
QC	=	Quality Control
TJ	=	Tera Joule
UNFCC	=	United Nations Framework Convention on Climate Change

6 Stakeholders' comments

6.1 Comments by local stakeholders

The meeting held the May 2005 included the following representatives, companies and institutions:

- Mr. Krzysztof Owczarek, Vice Mayor, Zakopane Municipality
- Mr. Wiktor Lukaszczyk, General Manager, PEC Geotermia Podhalanska S.A.
- Mr. Morten Pedersen, Deputy Programme Director, DEPA
- Ms. Inge Gerhardt-Pedersen, Chief Programme Coordinator, DEPA
- Mr. Sven Aaen, General Manager, AAEN Consulting Engineers A/S

6.2 Stakeholders comments

On the following pages are included stakeholders comments. Comments are included in the following pages as included in the scanned in signed documents from the stakeholders as specified below.

- Letter of Intend from Zakopane Municipality
- Letter of Intend from PEC Geotermia Podhalanska S.A.
- Letter of Endorsement from the Polish Ministry

ZASTĘPCA BURMISTRZA MIASTA ZAKOPANE

Zakopane 10.02.2005r.

IOS V-7023-DEP/1/2005

AAEN Consulting Engineers Ltd.
Asylvej 19
DK-8240 Risskov
Denmark

Subject: Letter of Intend concerning the Joint Implementation Project: "Expansion and development of Geothermal Energy, Zakopane, Poland".

Dear Mr. Sven Aaen

As follow up on meetings held in December 2004 with representatives from AAEN Consulting Engineers Ltd And Energi Viborg A/S we hereby confirm our interest in an expansion and development of the Geothermal Energy in Zakopane.

Zakopane Municipality will assist AAEN Consulting Engineers A/S and make all needed information available for an application to the Danish Environmental Protection Agency for financial support to the Join: Implementation Project due to the agreement in the Kyoto Protocol concerning CO_2 trade between Denmark and Poland.

Yours sincerely

34-500 Zakopane, ul. Kościuszki 13, tel. (0-18) 20-20-400/456 fax (0-18) 20-20-455
e-mail: office2@um.zakopane.pl

GEOTERMIA
Podhalańska

AAEN Consulting Engineers Ltd.
Asylvej 19
DK-8240 Risskov
Denmark
Fax: +45 86173352
Attention: Mr. Sven Aaen, General Manager

Risskov, Friday 7th January 2005

Subject: Letter of Intend concerning the Joint Implementation Project: "Expansion and development of Geothermal Energy, Zakopane, Poland"

Dear Mr. Sven Aaen

As follow up on meetings held in December 2004 with representatives from AAEN Consulting Engineers Ltd. and Energi Viborg A/S we hereby confirm our interest in an expansion and development of the Geothermal Energy in Zakopane.

Gotermia Podhalanska S.A. will assist AAEN Consulting Engineers A/S and make all needed information available for an application to the Danish Environmental Protection Agency for financial support to the Joint Implementation Project due to the agreement in the Koyoto Protocol concerning CO_2 trade between Denmark and Poland.

Yours sincerely
Mr. Wiktor Łukaszczyk

General Manager
Gotermia Podhalanska S.A.

PRZEDSIĘBIORSTWO ENERGETYKI CIEPLNEJ **GEOTERMIA PODHALAŃSKA S.A.**

telefony
(018) 201 50 41, (018) 201 50 42, (018) 201 50 43
fax
(018) 201 50 44
e-mail
biuro@geotermia.pl
www.geotermia.pl

biuro
34-500 **ZAKOPANE**, ul. Nowotarska 35 a
adres do fakturowania
34-424 **SZAFLARY**, Bańska Niżna, ul. Cieplice 1

NIP 736-14-44-064 REGON 4918 58337
NR KRS 0000040456

kapitał akcyjny
55.151.800 PLN
konto
PEKAO S.A. O/Nowy Targ
55 12401574 1111 00000790 4103
BOŚ S.A. O/Nowy Targ
42 1540 1115 2001 6010 5822 0001

MINISTERSTWO ŚRODOWISKA
Sekretarz Stanu
Tomasz Podgajniak

Warszawa, 25.03.2005

DIOŚ.075-I-2157/24/05/AG

Pan
Ryszard Ciągadlak
AAEN Polska Sp. z o.o.

Dotyczy: Projekt rozwinięcia i wykorzystania zasobów energii geotermalnej Zakopane

Polska, kierując się zasadą zrównoważonego rozwoju, realizuje z sukcesem działania na rzecz poprawy jakości środowiska i ograniczenia emisji gazów cieplarnianych. Ratyfikowanie przez Polskę Protokołu z Kioto pozwala na przystąpienie do realizacji projektów Wspólnych Wdrożeń, jednego z mechanizmów wspomagających, zgodnie z artykułem 6 tego Protokołu.

Przedstawiona przez firmę AAEN Polska Sp. z o.o. propozycja realizacji projektu rozwinięcia i wykorzystania zasobów energii geotermalnej w Zakopanem jest zgodna z przyjętą w 2001 r. *Strategią rozwoju energetyki odnawialnej* i *Polityką ekologiczną Państwa*, a przedłożona dokumentacja świadczy o zainteresowaniu władz lokalnych realizacją przedsięwzięcia.

W związku z powyższym chciałbym wyrazić wstępne poparcie dla dalszej realizacji tego projektu w ramach mechanizmu Wspólnych Wdrożeń. Spełnienie wszystkich niezbędnych wymogów Ramowej Konwencji NZ w sprawie zmian klimatu i Protokołu z Kioto do tej konwencji oraz przyjętych na ich podstawie kolejnych decyzji, jak również krajowych wytycznych, będzie podstawą do jego ewentualnego zatwierdzenia jako projekt Wspólnych Wdrożeń.

Jednocześnie, Polska jako kraj gospodarz, rozważy przekazanie jednostek AAUs (Assigned Amount Units) odnoszących się do redukcji emisji gazów cieplarnianych wygenerowanych do roku 2008, poprzez mechanizm handlu emisjami zgodny z artykułem 17 Protokołu z Kioto.

Z wyrazami szacunku
T. Podgajniak

Do wiadomości:
Pani Jolanta Galon-Kozakiewicz – NFOŚiGW.

GEOTERMIA
Podhalańska

2009-07-06

L.Dz.PEC GP S.A./2220/09

Pani Maria Kłokocka
Naczelnik Wydziału
Ministerstwo Środowiska
Departament Zmian Klimatu i Ochrony Atmosfery
Wydział Ochrony Klimatu I Konwencji Ekologicznych
ul. Wawelska 52/54
00-922 Warszawa

Dotyczy: **Stan projektu Wspólnych Wdrożeń (JI):**
"Rozszerzenie i Rozwój Energii Geotermalnej, Zakopane, Polska"

Szanowna Pani

Geotermia Podhalańska S.A. (Geotermia) niniejszym potwierdza, iż zamierza powierzyć AAEN Polska Sp. z o.o. (AAEN) funkcję Gospodarza Projektu (Project Host) w wyżej wymienionym projekcie Wspólnych Wdrożeń (JI).

AAEN zainicjował projekt w roku 2005 i jest obecnie odpowiedzialny za jego rozwój. AAEN jest dobrze zaznajomiony z procedurami zatwierdzania, oceny, monitoringu i weryfikacji związanymi z projektem, dlatego naturalne jest, że AAEN będzie kontynuował działalność jako Gospodarz Projektu (Project Host).

W wyniku powyższej decyzji została podpisana umowa wstępna pomiędzy partnerami tj. Geotermią i AAEN. Umowa ostateczna określająca szczegółowe warunki współpracy zostanie podpisana do końca bieżącego roku.

W niedalekiej przyszłości polskie Ministerstwo Środowiska otrzyma bezpośrednio z AAEN oficjalny wniosek o List Zatwierdzający (LoA), dla geotermalnego projektu Wspólnych Wdrożeń (JI) w Zakopanem.

Z poważaniem
PEC Geotermia Podhalańska S.A.

Czesław Ślimak
Prezes Zarządu

Verte
PRZEDSIĘBIORSTWO ENERGETYKI CIEPLNEJ **GEOTERMIA PODHALAŃSKA S.A.**

telefony
(018) 201 50 41, (018) 201 50 42, (018) 201 50 43
fax
(018) 201 50 44
internet
geoterm@geotermia.pl
www.geotermia.pl

biuro
34-500 **ZAKOPANE**, ul. Nowotarska 35 a
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34-424 **SZAFLARY**, Bańska Niżna, ul. Cieplice 1
NIP 736-14-44-064 REGON 4918 58337
NR KRS 0000040456

kapitał akcyjny
149.598.100 PLN
konto
BOŚ S.A. O/Nowy Targ
42 1540 1115 2001 6010 5822 0001

Rozdzielnik:

- Pani Inge Gerhardt Pedersen, Główny Koordynator Programu dla Polski
  Duńskie Ministerstwo Klimatu i Energii, Amaliegade 44, DK-1256 København K, Denmark

- Pani Agnieszka Gałan, Kierownik Zespołu Mechanizmów Elastycznych,
  Instytut Ochrony Środowiska,
  Krajowy Administrator Systemu Handlu Uprawnieniami do Emisji (KASHUE),
  ul. Kolektorska 4, 01-692 Warszawa, Polska

- Pani Ewelina Bagińska, Specjalista
  Ministerstwo Środowiska
  Departament Zmian Klimatu i Ochrony Atmosfery
  ul. Wawelska 52/54, 00-922 Warszawa, Polska

DANISH ENERGY AGENCY

AAEN Polska Sp. z o.o.
Att.: Mr. Sven Aaen
ul. Szymony 17A
34-500 Zakopane
Poland

8 July 2009
File no. 1105-0053
Ref. IGP

Continuation of the JI Project: "Expansion and development of Geothermal Energy, Zakopane, Poland"

Dear Mr. Sven Aaen,

The Danish Ministry of Climate and Energy, Danish Energy Agency (DEA) hereby confirm our interest in the continuation of the above mentioned JI Project.

The project has been included in DEA´s portfolio of JI Projects since 2005 and we are aware of the status of the project as well as the fact that AAEN Polska Sp. z o.o. now is acting as the Project Host.

All needed documentation has been completed including the Letter of Endorsement (LoE) dated the 25th of March 2005, Project Desing Document (PDD) dated the 24th of April 2006 and the Determination Report dated the 25th of April 2006.

We do now await the Letter of Approval (LoA) from the Polish Ministry so that this geothermal JI project can be included in the JI Project cooperation between the Polish Ministry and the Danish Ministry.

Yours sincerely

Inge Gerhardt-Pedersen

Danish Energy Agency
Amaliegade 44
1256 Copenhagen K

Phone +45 33 92 67 00
Fax +45 33 11 47 43
E-mail: ens@ens.dk
www.ens.dk

Office hours:
Mon-Thursday 8.30-16
Friday 8.30-15.30
CVR-nr. 59 77 87 14
EAN-nr. 5798000020009

Inge Gerhardt-Pedersen
Direct +45 3392 6729
igp@ens.dk

MINISTRY OF CLIMATE AND ENERGY

DUŃSKA AGENCJA ENERGII

AAEN Polska Sp. z o.o.
Dla Pana Sven Aaen
ul.Szymony 17A
34-500 Zakopane
Polska

8 lipiec 2009
Akta no 1105-0053
Dot. IGP

Kontynuacja projektu JI: „Rozszerzenie i rozwój Energii Geotermalnej, Zakopane, Polska"

Szanowny Pan Sven Aaen,

Duńskie Ministerstwo Klimatu i Energii, Duńska Agencja Energii (DEA) niniejszym potwierdza zainteresowanie w kontynuacji wyżej wymienionego projektu JI.

Projekt znajduje się w DEA portfolio projektów JI od roku 2005 i jesteśmy świadomi stanu projektu oraz faktu, ze teraz AAEN Polska Sp. z o.o. Pełni funkcję Gospodarza Projektu.

Cała potrzebna dokumentacja została skompletowana wraz z Listem Popierającym (LoE) z dnia 25 marca 2005,Dokumentacją Opisową Projektu (PDD) z dnia 24 kwietnia 2006 i Raportem Rozstrzygającym (DR) z 25 kwietnia 2006.

Oczekujemy teraz na List Zatwierdzający (LoA) z Polskiego Ministerstwa i wówczas ten geotermalny projekt JI może być włączony do współpracy w projektach JI między ministerstwami polskim i duńskim.

Z poważaniem
(nieczytelny podpis)
Inge Gerhardt-Pedersen