



Energy4Life

Data Acquisition questionnaire for Renewable Energy Database

<http://spreadsheets.google.com/viewform?formkey=dHE3ZVQ0X0Z1X1Bzajl4cFB0aWxoeWc6MA>

User's manual

December 2009

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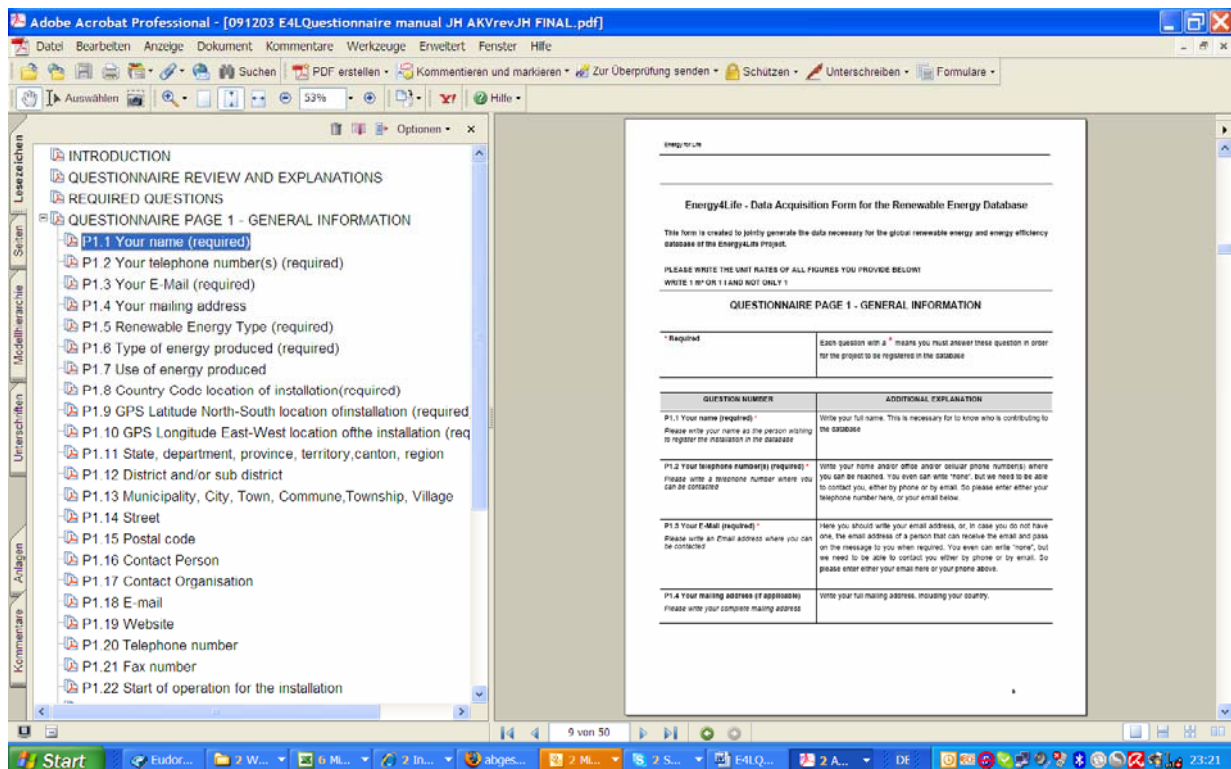
Remark

Please read carefully the chapter

[QUESTIONNAIRE REVIEW AND EXPLANATIONS](#) and
[Required questions!](#)

In case you only need information on a specific question or on one of the 9 pages, you can either search the question with the pdf search function or go directly to the respective question in the bookmark list on the left side. The link will lead you automatically to the background information of the questions in the selected page!

In case the book mark list is not opened on the left side you can open it with one click on the word book mark with the left mouse button.



INTRODUCTION

Energy is the principal means for providing access to basic needs such as food and water and it facilitates various opportunities for the achievement of a decent quality of Life. Moreover, the type of energy has a direct impact on the quality of life and sustainability of the planet as a whole. Considering that all people, rich or poor, from industrialized countries and from developing countries, all live on the same and only planet earth, there is irrefutable interdependence between industrialized countries and developing countries in the energy sector, all sharing common problems that include the depletion of natural resources, pollution, climate change, etc. As such, close collaboration and shared solutions need to be developed.

The World Summit on Sustainable Development (WSSD) recognized the explicit link between access to energy services and poverty reduction. The Johannesburg Plan of Implementation (JPOI) called on the international community to work together at all levels to improve access to affordable, adequate, reliable and appropriate energy services for sustainable development as to facilitate the achievement of the Millennium Development Goals set by the United Nations and adopted by governments of the world.

Renewable Energies is recognized as playing a critical role in Poverty reduction and sustainable development. As such, increasing international co-operation within the framework of the links between renewable energies and development is required to improve awareness and support development activities through renewable energies projects.

With this in mind, the Energy for Life project was developed with the objective of promoting renewable energies as a tool to achieve sustainable development and improve the quality of life in Europe and in developing countries. This will be achieved by raising awareness on the need to improve the North-South relations, by strengthening international co-operation towards a better understanding of the link between Renewable Energies and development; with better understanding of the benefits of sustainable energy production and its use on a global scale; and finally, by promoting the implementation of Renewable Energies projects and related investments. Overall, Energy for Life is an awareness raising three year initiative that aims to convince stakeholders and the public at large that making a commitment to Renewable Energies is an investment in the future of Europe and developing countries.

To meet its objective, and as one of the tools employed, it was decided to establish a platform on Renewable Energies and Development, and to create a database of best practices and successful experiences. This will not only allow the collection and dissemination of information but also will enhance scientific research and the spread of knowledge on the relationship between Renewable Energies and Development. The information for this database is to be collated from the responses collected through an especially designed questionnaire. This questionnaire was developed to ensure that all people with information will be able to answer the questions: local and international GOs and NGOs, private companies, local, regional and national authorities and decision makers, secondary and college level youths, the public in general or anyone interested in contributing to the implementation of renewable energies and

to the development of developing countries through access to energy as a human development right, to the mitigation of climate change, the depletion of natural resources, poverty reduction, and to the improvement of quality of life.

To make the database more accessible and dynamic for all levels and segments of society, the answers from the questionnaire are to be presented in the form of an energy map, showing all basic data regarding renewable energy systems in existence, including but not limited to their location, their type and their capacities.

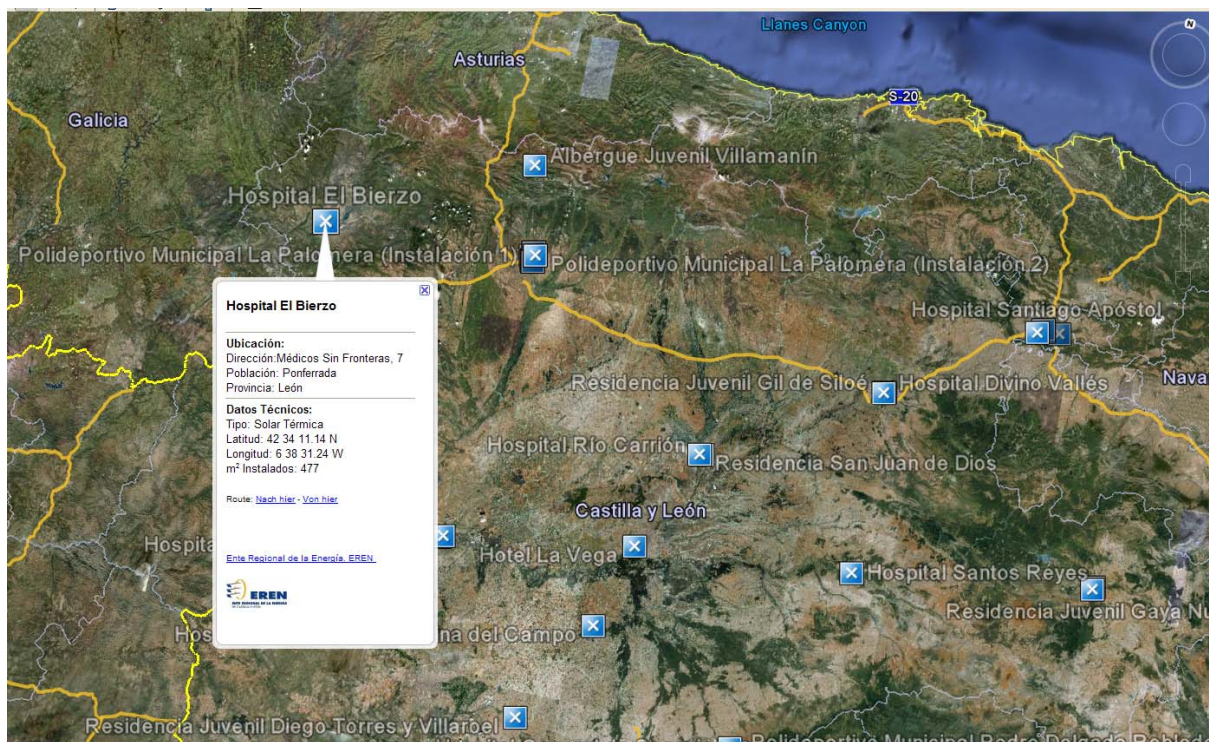


Figure 1: Possible view of final energy map: province of Castilla y León, Spain www.eren.jcyl.es,

This user's manual aims to facilitate the understanding of the questionnaire by giving concrete examples and illustrations that will help in the answering of the questions. The more information that is provided the better will be the understanding of the situation of access to energy around the world, and its potential for development. Public awareness of the links between sustainable energy and other development and environment priorities, along with technology and policy options, will lead to their consideration by governments in formulating their policies and programmes, and by the private sector to attract investments in the energy sector, so that these favour energy sector growth for sustainable development, especially for the poor in developing countries.

Organization of the manual

The manual is divided into four main sections.

INTRODUCTION

This section gives the background and justification of the project.

QUESTIONNAIRE REVIEW AND EXPLANATION

This section reviews and explains each page of the questionnaire in details.

SUBMISSION CONFIRMATION AND PICTURE (S)

This section confirms receipt of your submission and explains how to send a picture of the installation.

THANK YOU FOR YOUR CONTRIBUTION

This section summarizes the purpose of the study and the importance of your contribution.

QUESTIONNAIRE REVIEW AND EXPLANATIONS

In order to efficiently collect the information required to do a global renewable energy mapping at world level, a questionnaire was created to jointly generate the data necessary for the global renewable energy and for the energy efficiency database of the Energy4Life Project.

The questionnaire is in fact a series of questions that will allow an objective and efficient collection of data. These data or answers will then be utilized in the development of an energy map at world level.

The questionnaire is divided into 9 sections or pages:

- Page 1 collects general information on the project, and the people or organizations involved in the project.
- Page 2 reviews solar systems
- Page 3 review biomass systems
- Page 4 reviews wind systems
- Page 5 reviews water systems
- Page 6 reviews geothermal systems
- Page 7 reviews co-generation systems
- Page 8 reviews hybrid systems
- Page 9 is the final page to upload the entered information.

Each question is numbered according to its page number. For example, page one question one would be p1.1; Page six questions 8 would read p6.8.

Each question is accompanied by a short explanation. More details are available for each page in this manual, as to ensure that you well understand each question and answer the question as clearly as possible.

You can use the list of content to go to the page for which you need information.

REQUIRED QUESTIONS

Make sure you answer all required questions; these are marked by a star *.

These required questions give the minimum data that is required in order to enter the information into the database. However, you are encouraged to take the time and answer all the questions, assuming you have the answers, as to offer a better understanding of the situation, utilization and usefulness of renewable energy installations in the world.

You do not need to read the all section 2 of the manual. Only Questionnaire page 1 and the clarifications of the questions related to the system you intend to register are advisable.

If you do not know the answer please leave the space blank.

Only the following 9 questions are *required*:

Minimum information we need to know:

- P1.1 Your name (required) *
- P1.2 Your telephone number(s) (required) *
- P1.3 Your E-Mail (required) *
- P1.5 Renewable Energy Type (required) *
- P1.6 Type of energy produced (required) *
- P1.8 Country Code location of installation (required) *
- P1.9 GPS Latitude North-South location of installation (required) *
- P1.10 GPS Longitude East-West location of the installation (required) *

Then for the renewable energy type you have selected, only the first question of each page is required.

- P2.1 - P8.1 Type of installation (required) *

Energy4Life - Data Acquisition Form for the Renewable Energy Database

This form is created to jointly generate the data necessary for the global renewable energy and energy efficiency database of the Energy4Life Project.

PLEASE WRITE THE UNITS FOR ALL FIGURES YOU PROVIDE BELOW!

WRITE 1 m³ OR 1 litre OR 1 Kg AND NOT ONLY 1

QUESTIONNAIRE PAGE 1 - GENERAL INFORMATION

*** Required**

ALL questions with a * means you must answer these questions in order for the project to be registered in the database

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P1.1 Your name (required) *</p> <p><i>Please write your name as the person wishing to register the installation in the database</i></p>	Write your full name. This is necessary for to know who is contributing to the database
<p>P1.2 Your telephone number(s) (required) *</p> <p><i>Please write a telephone number where you can be contacted</i></p>	Write your home and/or office and/or cellular phone number(s) where you can be reached, or a number where you can be contacted. You even can write "none", but we need to be able to contact you, either by phone or by email. So please enter either a telephone number here, or your email below.
<p>P1.3 Your E-Mail (required) *</p> <p><i>Please write an Email address where you can be contacted</i></p>	Here you should write your email address, or, in case you do not have one, the email address of a person that can receive the email and pass on the message to you when required. You even can write "none", but we need to be able to contact you either by phone or by email. So please enter either your email here or a phone above.
<p>P1.4 Your mailing address (if applicable)</p> <p><i>Please write your complete mailing address</i></p>	Write your full mailing address, including your country.

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P1.5 Renewable Energy Type (required) *</p> <p><i>Please choose the type of renewable energy installation you wish to register; you will be redirected to the dedicated pages automatically</i></p> <ul style="list-style-type: none"> <input type="radio"/> Solar (Energy from sun light) <input type="radio"/> Biomass (Energy from plant material or residues) <input type="radio"/> Wind (Energy from wind power) <input type="radio"/> Water (Energy from water movement) <input type="radio"/> Earth (Energy from the ground) <input type="radio"/> Co-Generation (efficient energy from combined heat and power) <input type="radio"/> Hybrid (multiple energy sources in one application) 	<p>The types of renewable energy were divided into 7 categories.</p> <ol style="list-style-type: none"> 1. Solar, which means you are using the sunlight to produce your energy. 2. Biomass, which means you are using plants or animal waste or agriculture residues or other type of solid substance to produce energy 3. Wind, which means you are using the wind to produce energy 4. Water, which means you are using water to produce energy 5. Earth, which means you are using the heat from the earth as in geothermal systems or hot springs to produce energy 6. Co-generation, which means you are producing electricity and heat in your system 7. Hybrid, which means you are using a combination of some of the 5 renewable energy categories, or even adding some fossil fuel mixed with renewable energy systems. <p>Once you have selected the type of renewable energy you want to register in the database, you will continue to answer the other questions. At the bottom of the page, when you will press continue, it will bring you directly to the specific page for the selected energy type.</p> <p>If you want to register more than one installation, you will have to start again from the beginning.</p>
<p>P1.6 Type of energy produced (required) *</p> <p><i>Please choose the type of energy produced by the renewable energy installation</i></p> <ul style="list-style-type: none"> <input type="radio"/> Electricity <input type="radio"/> Heat/Cold <input type="radio"/> Combined heat and power <input type="radio"/> Gas <input type="radio"/> Liquid fuel (biofuel, ethanol...) <input type="radio"/> Steam 	<p>Here you must define what type of energy you are producing. What is the final product that is coming out of your system? It is important that you note the final product since you may be producing steam that is then sent into a steam turbine to produce electricity that is to be sold. Therefore although you are producing steam, your final product is electricity.</p> <p>If you were to sell the steam, then your final product would be steam.</p>
<p>P1.7 Use of energy produced (if known)</p> <p><i>Please choose how the energy produced by the installation is utilized</i></p> <ul style="list-style-type: none"> <input type="radio"/> Off grid / Personal use <input type="radio"/> Village grid / network connected 	<p>Here you must say who will be using this energy.</p> <p>The off-grid systems, also called stand-alone systems are systems where the energy is produced only for local or personal use and not fed into the electricity grid. Examples: The owner of a house uses e.g. photovoltaic modules to charge a battery which is then used as an electricity source in a house; or a farmer uses the manure of its animals</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
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- Local - regional grid / network connected
- National grid / network connected

to produce biogas in a small biodigester and uses the produced biogas to operate a gas cooker or light, or to run a small generator or co-generator to produce energy.

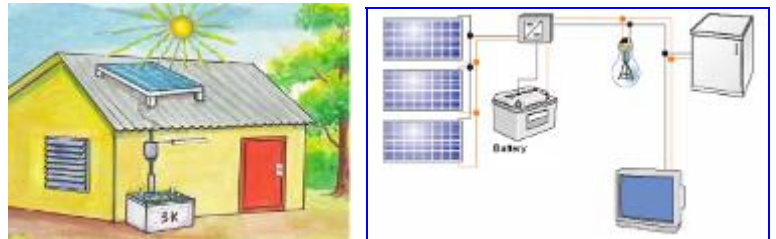


Figure 2: Off-grid Solar Photovoltaic system (REEPRO, 2009)

Grid connected systems are systems where the produced electricity is fed into the electricity grid, that is to the distribution network, either in one grid for the village or to the local regional grid, or to the national grid. The difference of village, local and national grid is that the village grid serves only a village, the local or regional grid may serve a few villages in a specific region and the national grid may distribute electricity around the country.

Village Grid:



Figure 3: Local/Village grid fed by Hybrid 50 KWp PV and 35 kWe Biogas system, Cambodia

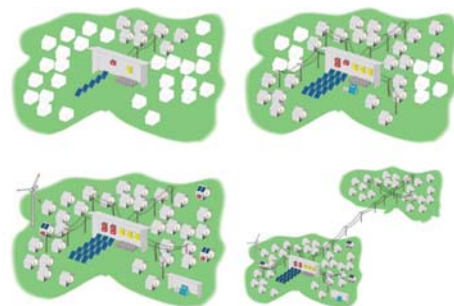
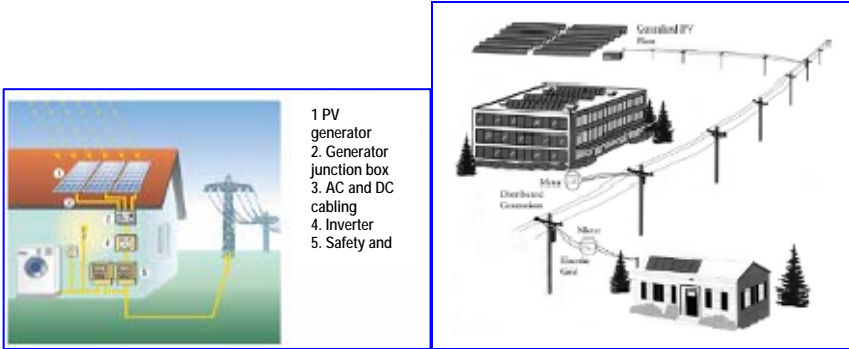



Figure 4: Design of a local grid using one or different energy sources (SMA, 2003)

QUESTION NUMBER	ADDITIONAL EXPLANATION
	<p>National grid:</p>  <p>1. PV generator 2. Generator junction box 3. AC and DC cabling 4. Inverter 5. Safety and</p> <p>Figure 5: National grid connected Solar Photovoltaic system (REEPRO, 2009)</p>
<p>P1.8 Country Code location of installation (required) *</p> <p><i>Please insert the country code where the installation is located by entering the two letters associated with the country. Find the country code here:</i></p> <p>http://www.iso.org/iso/english_country_names_and_code_elements#g..</p>	<p>The country code is just a two letter code attributed to each country that is recognized internationally. To get this code, simply click on the link provided on your left and you will be taken to the list of countries. Identify the country where the installation is located and it will give you the two letter code that you will enter into the box.</p>
<p>P1.9 GPS Latitude North-South location of installation (required) *</p> <p><i>Please write exactly what is written on your GPS - do not leave any space between the characters (Advanced users: please provide decimal degrees)</i></p> 	<p>The Global Positioning System or GPS for short is a system used to calculate the exact geographical position of a specific location on earth through the triangulation of satellites in orbit. Each location has unique GPS coordinates. Geographical coordinates use 2 co-ordinates: Latitude (north to south) and Longitude (east to west).</p> <p>The Latitude coordinates on a GPS are: The angular distance along a meridian measured from the Equator, either north or south. Lines of Latitude are the imaginary horizontal lines shown running east-to-west (or west to east) on maps that run either north or south of the equator. Technically, latitude is an angular measurement in degrees (marked with °) ranging from 0° at the equator (low latitude) to 90° at the poles (90° N or +90° for the North Pole and 90° S or -90° for the South Pole) (Wikipedia, 2009)</p> <p>There are several formats for writing GPS coordinates, all of them appearing in the same Latitude and longitude order (first latitude, then longitude).</p> <ul style="list-style-type: none"> • DMS Degrees: Minutes: Seconds (49°30'00"N, 123°30'00"W). • DM Degrees: Decimal Minutes (49°30.0', -123°30.0'), (49d30.0m,-123d30.0') • DD Decimal Degrees (49.5000°,-123.5000°), generally with 4-6 decimal numbers.

QUESTION NUMBER	ADDITIONAL EXPLANATION
	<p>Along with the different formats for writing GPS coordinates, there are also several different views, depending on the device, as seen in the following question).</p> <p>What you need to do is write exactly what you see on the screen of your GPS, regardless of the format. The latitude always comes first on your GPS. Do not allow any space between the characters.</p> <p>See the pictures on the next page</p>

P1.10 GPS Longitude East-West location of the installation (required) *

Please write exactly what is written on your GPS - do not leave any space between the characters (Advanced users: please provide decimal degrees)

The Longitude coordinates on a GPS are: The angular distance measured from a reference meridian, Greenwich, either east or west. It is the angular distance measured east or west and usually expressed in degrees (or hours), minutes, and seconds, from the prime meridian, defined to be at the Royal Observatory, Greenwich, in England, to the meridian passing through another position on the earth's surface. A location's position along a meridian is given by its latitude. This is the angular distance of that place north or south of the equator, measured as an angle whose vertex is at the center of the earth. (Wikipedia, 2009)

There are various types of GPS available on the market. Some are only GPS and some devices such as cellular phones or watches also may include a GPS. Therefore, when reading the GPS coordinates, the view may be different. Nevertheless the information will be the same for a same location.

Following are a few pictures of different types of GPS systems and their reading screens.



Figure 6: <http://bbs.keyhole.com> Figure 7: www.groundcontrol.com



Figure 8: <http://www.applesfera.com> Figure 9: <http://handheld.softpedia.com>

QUESTION NUMBER	ADDITIONAL EXPLANATION
	<p>Along with the different formats for writing GPS coordinates, there are several different views, depending on the device.</p> <p>What you need to do is write exactly what you see on the screen of your GPS, regardless of the format. The Longitude is always second on your GPS. Do not allow any space between the characters.</p>
<p>P1.11 State, department, province, territory, canton, region (if known)</p> <p><i>Please write the name of the state, department, province, territory, canton, or region where the installation is located</i></p>	<p>Some countries are divided into provinces or departments. Just write the name of the Province or Department or the like where the installation is located.</p>
<p>P1.12 District and/or sub district (if applicable)</p> <p><i>Please write the name of the district and/or sub district where the installation is located</i></p>	<p>Some Provinces or departments are divided into districts or the like, depending on the country. Therefore, if this is the case, please write the name of the district in which the installation is located.</p>
<p>P1.13 Municipality, City, Town, Commune, Township, Village (if available)</p> <p><i>Please write the name of the municipality, city, town, commune, township or village where the installation is located</i></p>	<p>What is the name of the village or town in which the installation is located?</p>
<p>P1.14 Street (if applicable)</p> <p><i>Please write the name of the street on which the installation is located</i></p>	<p>There should be a road passing in front of the installation. Write the name of that road and, if the building has an address number, also write the address number.</p>
<p>P1.15 Postal code (if applicable)</p> <p><i>Please write the postal code number, if available</i></p>	<p>Some countries have postal codes and others not. Therefore, if the country where the installation is located uses postal codes and you know it, please write it. If not, leave the space blank.</p>
<p>P1.16 Contact Person (if known)</p> <p><i>Please write the name of the contact person, if applicable</i></p>	<p>It would be most useful if you give the name or a contact person, in relation to the installation (owner, engineer, worker...), should additional information on the installation be required.</p>
<p>P1.17 Contact Organisation (if applicable)</p> <p><i>Please write the name of organisation responsible for the installation if applicable</i></p>	<p>It could be most useful if you give the name of the company or organization owner of the installation responsible for operating and/or managing the installation (e.g. community development organization, or village committee, municipal administration...).</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P1.18 E-mail (if applicable) <i>Please write the E-mail address of the contact if available</i></p>	<p>If the contact person or organization has an email address, please write it.</p>
<p>P1.19 Website (if applicable) <i>Please write the Website address of the contact if available</i></p>	<p>If you or the company or organization has a website, write the address of the website.</p>
<p>P1.20 Telephone number (if applicable) <i>Please write the telephone number of the contact if available</i></p>	<p>Write a telephone number where the contact person can be reached.</p>
<p>P1.21 Fax number (if applicable) <i>Please write the fax number of the contact if available</i></p>	<p>If you have a fax number for the contact person, please write the number</p>
<p>P1.22 Start of operation for the installation (if known) <i>Please write the starting date and/or year of operation of the installation</i></p>	<p>When did the installation start working? If you know the precise day and date, please write. Or the month and the year, or just the year if you do not know the details.</p>
<p>P1.23 Type of fuel used prior to the renewable energy installation (if known) <i>Please write the type of fossil fuel that was used to produce energy prior to the installation of the renewable energy system</i></p> <p><input type="radio"/> Oil</p> <p><input type="radio"/> Diesel</p> <p><input type="radio"/> Natural Gas</p> <p><input type="radio"/> Coal</p> <p><input type="radio"/> Other</p> <p><input type="radio"/> No energy was available prior to the installation</p>	<p>Was there energy produced before the renewable energy installation? If yes, please select what kind of fuel was used. If there was no energy prior to the project, just select that no energy was available prior to the installation of the renewable energy system.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P1.24 Quantity of fossil fuel used prior to the renewable energy installation (if known) <i>In case fossil fuel was used in the production of energy prior to the renewable energy installation (as mentioned in question p1.23), please write the number of litres or m3 or kilograms of fossil fuel that was being used to generate the same energy prior to the installation</i></p>	<p>If fossil fuel was used prior to the installation of the renewable energy system, as mentioned in question p1.23 here above, please write the quantity of fuel that you mentioned above (if liquid in litres, if gas in m³ or in litres, if solid in m³ or in kilograms.) to generate the same energy.</p>
<p>P1.25 Quantity of fossil fuel used in the renewable energy installation (if known) <i>What is the quantity of fossil fuel used in the installation (write the number of litres or m3 or kilograms)</i></p>	<p>In case the renewable energy system still needs some quantity of fossil fuel to operate, please write the quantity of fuel being used to generate energy (if liquid in litres, if gas in m³ or in litres, if solid in m³ or in kilograms.).</p>
<p>P1.26 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	<p>Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation.</p>
<div data-bbox="76 1196 209 1252" style="border: 1px solid black; padding: 2px; display: inline-block;">Continue »</div>	<p>Now press Continue. This will bring you automatically to the page of the energy type you have selected in question: “P1.5 Renewable Energy Type”. There you will need to answer the first required question, and then you are encouraged to give more details on the plant you wish to register.</p>

QUESTIONNAIRE PAGE 2: INSTALLATION TYPE: SOLAR

Solar power is the use of sunlight for the generation of energy. Two main types of solar systems enable the use of Solar Energy: Solar modules for the generation of electricity (Photovoltaic); Solar collectors to store heat energy (Solar thermal systems)

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P2.1 Type of solar installations (required) * <i>Please choose the type of solar energy installation you want to enter into the database</i></p> <p><input type="radio"/> Photovoltaics (solar electricity)</p> <p><input type="radio"/> Solar thermal (solar heating)</p>	<p>The type of system is determined by the use of the energy. If it is used as electricity, it is photovoltaic. If it is used for heating or cooling, it is a solar thermal system.</p>
<p>P2.2 For photovoltaic electricity systems (if applicable) <i>Please choose the kind of solar panel(s) used in the installation (if known)</i></p> <p><input type="radio"/> Monocrystalline solar panel</p> <p><input type="radio"/> Polycrystalline solar panel</p> <p><input type="radio"/> Amorphous solar panel</p>	<p>Monocrystalline Silicon Panels</p> <p>Monocrystalline panel systems use crystalline silicon that is produced in large sheets that can be cut into the required size and shape, and integrated into a panel. Although higher in cost, these panels have higher efficiency levels (15-18%) and therefore may become more economical on the long run.</p> <div data-bbox="778 1196 1410 1541" data-label="Image"> </div> <p>Figure 10 Mono-crystalline silicon cells of different shapes, (DGS, 2005)</p> <p>Polycrystalline Silicon Panels</p> <p>Polycrystalline, also called multicrystalline panel systems use a series of cells instead of one large cell. These panels are one of the most inexpensive forms of photovoltaics available today. However, these panels have a lower conversion efficiency (13-16%) compared to monocrystalline panels.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
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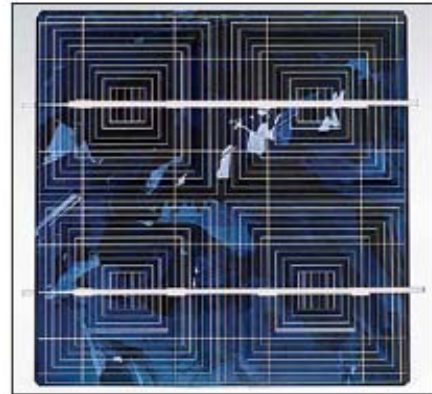


Figure 11 Polycrystalline solar panels

Amorphous Silicon or Thin Film Panels

These panels made of thin-film are very different from crystalline panels. Instead of moulding, drawing or slicing crystalline silicon, the silicon material of these panels has no crystalline structure and can be applied as a film directly on different materials. Because of their flexibility, they can be applied on another flexible surface as to remain flexible, and therefore are less fragile than the crystalline panels. However, their longevity is lower and their efficiency significantly lower (5-8%).

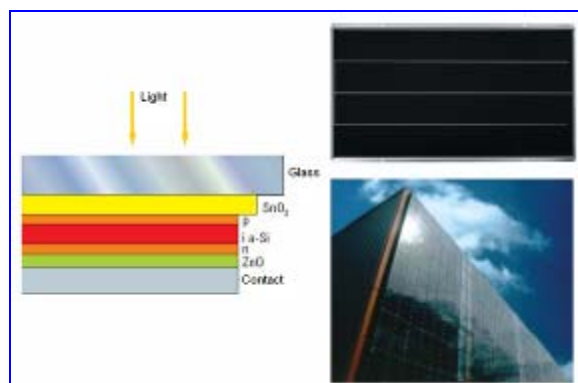


Figure 12 Layered structure of an amorphous cell (DGS, 2005)

P2.3 For solar thermal systems (if applicable)

Please choose the kind of solar thermal system used in the installation (if known)

- Flat Plate collector
- Vacuum tube collector
- Unglazed absorber
- Evacuated tube collector

Flat plate collectors

Almost all glazed flat-plate collectors currently available on the market consist of a metal absorber in a flat rectangular housing. The collector is thermally insulated on its back and edges, and is provided with a transparent cover on the upper surface. Two pipe connections for the supply and return of the heat transfer medium are fitted, usually to the side of the collector.

QUESTION NUMBER	ADDITIONAL EXPLANATION
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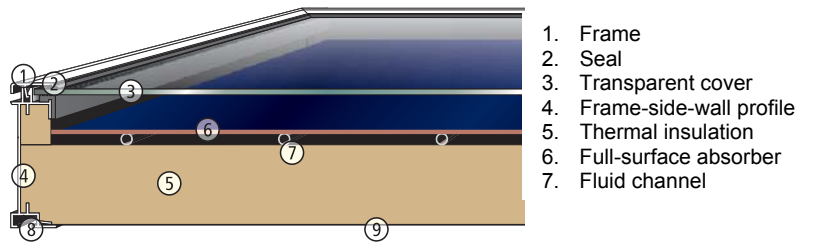


Figure 13: Section through a glazed flat-plate collector

Vacuum tube collectors

In special cases, e.g. if there is not enough area for the required absorber surface or when additional applications like cooling are desired, vacuum tube collectors may be chosen.



Figure 14: Vacuum tube collectors

Unglazed absorber

The unglazed absorbers generally used for swimming pool heating are far cheaper than the flat-plate collectors normally used for providing hot water to a family unit, because of the absence of transparent cover, casing and thermal insulation. The system is suitable for pools, since the system operates at low temperature differences between the absorber and the surroundings and relative steady return temperatures (between 10 and 24 °C). The swimming pool absorbers are predominantly made out of plastic in the form of tubes or flat-absorbers.

QUESTION NUMBER	ADDITIONAL EXPLANATION
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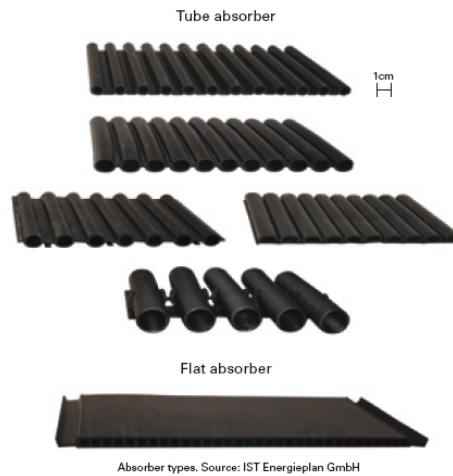


Figure 15: Unglazed solar thermal absorber

Evacuated tube collectors

An evacuated tube collector consists of a number of tubes that are connected together and which are linked at the top by an insulated distributor or collector box, in which the feed and return lines run. There are two main sorts of evacuated tube collectors: the direct flow-through type and the heat-pipe type.

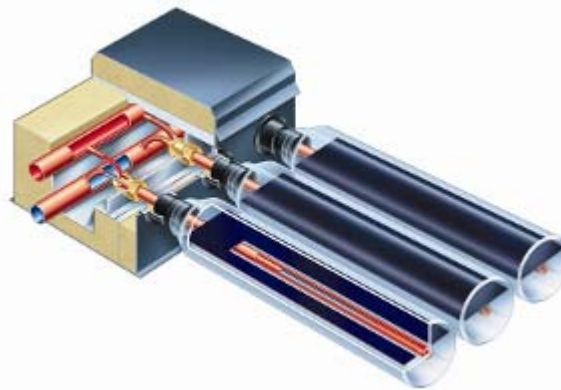


Figure 16: Cross-section view of direct flow-through evacuated tube collector

P2.4 Solar installation investment cost (if known)




Please write the investment cost of the installation in US\$

How much money was paid for the equipment and installation?

P2.5 Solar installation maintenance cost per month (if known)

Please write the maintenance cost for the installation per month in US\$

How much money is paid every month to maintain the system?

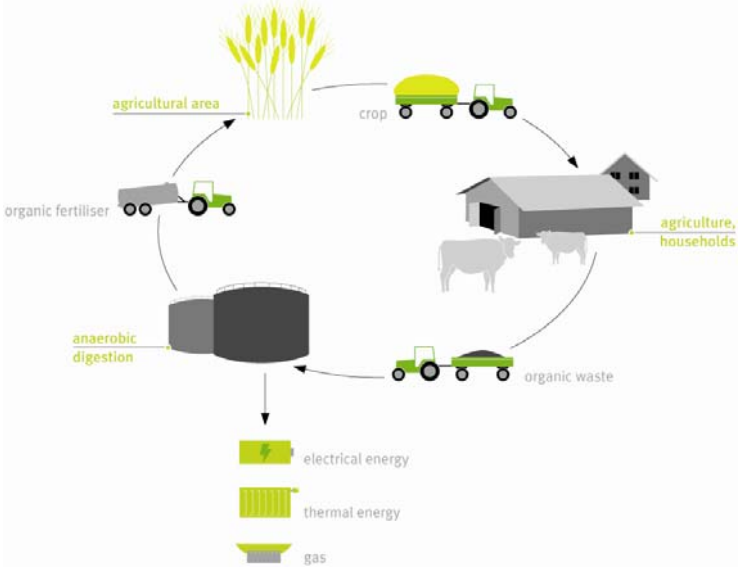
QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P2.6 Income generated from the solar installation (if known)</p> <p><i>Please write the income generated by the sale of the energy from the installation per month in US\$</i></p>	<p>If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p>P2.7 Size of solar system in square meter(s) (if known)</p> <p><i>Please write the size of the photovoltaic or solar thermal system in square meter(s)</i></p>	<p>Using a measuring tape, measure the area occupied by the solar panels or solar collectors and write the size in square meters. For the example below you would have to write 0,4 m² in the questionnaire.</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <p>Example: 1 PV module:</p> <p>50 cm (0,5m) wide and 80 cm (0,8m) high Size: 50cmx80 cm 4000 cm² = 0,4 m²</p> </div> </div>
<p>P2.8 Peak Power of installation (if known)</p> <p><i>Only for photovoltaic systems!</i></p> <p><i>Please write the peak power of the installation in kWp (maximum power output at one time)</i></p>	<p>Electric power is defined as the rate at which electrical energy is transferred by an electric circuit. Power is expressed in watts. 1000 W are 1 kW and 1 W is 0,001 kW. The power of a system is usually mentioned together with other technical data on the system itself. The unit of electrical power is electrical Watt_e. We use with this form kilowatt electrical power, thus kW_e.</p> <p>For a solar system the maximum power or Peak Power (kWp) is found on the back of each panel, as shown here below.</p> <div style="display: flex; align-items: center; justify-content: center;">   </div> <p style="text-align: center;">Figure 17: Back of PV Modules showing the technical data sheet</p>
<p>P2.9 Daily operation hours (if known)</p> <p><i>Please write the number of hours the installation is operating per day</i></p>	<p>How many hours a day is the system working? This means how many hours during the day do you use the produced energy e.g. 2 hours in the evening for lighting and TV.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P2.10 Number of days of operation per year (if known)</p> <p><i>Please write the number of days the installation is operating in one year</i></p>	<p>Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities. Therefore, it is necessary to know the number of days of operation in one year.</p>
<p>P2.11 Yearly operation hours (if known)</p> <p><i>Please write the number of hours the installation is operating per year</i></p>	<p>To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating.</p>
<p>P2.12 Total operation hours until today (if known)</p> <p><i>Please write the total number of hours the installation has been operating since its start-up</i></p>	<p>You can either get this information from your records or you can also calculate it. You can calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of hours of operation per day. This will give you the total operation hours until today. In case you have a bigger PV system using an inverter you may also get this figure from the meter of the inverter.</p>
<p>P2.13 Daily yield in kWh (if known)</p> <p><i>Please write the average number of kilowatt-hour the installation can produce per day</i></p>	<p>Check the normal quantity of electricity produced in one day. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (40W lamp bulb, television...), and for how many hours during one day.</p>
<p>P2.14 Yearly yield in kWh (if known)</p> <p><i>Please write the number of kilowatt-hour the installation can produce per year</i></p>	<p>You either get this information from your records or you can also calculate it. Take the normal quantity of kWh produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh produced in one year of operation.</p>
<p>P2.15 Total yield until today in kWh (if known)</p> <p><i>Please write the total number of kilowatt-hour the installation has produced since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. With the quantity of kWh produced by the installation per day you should calculate the total number of kWh the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of kWh generated per day. This will give you the total yield. In case you have a bigger PV system using an inverter you may also get this figure from the meter of the inverter.</p>


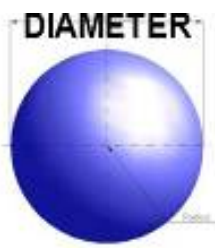
QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P2.16 People benefiting (if known) <i>Please write the number of beneficiaries from the installation</i></p>	<p>How many persons are served with the energy from the installation of this solar system? If the system is only used by your family e.g., write the number of persons in your household.</p>
<p>P2.17 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	<p>Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.</p>
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<p><input type="button" value="« Back"/> <input type="button" value="Continue »"/></p>	<p>If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.</p>


QUESTIONNAIRE PAGE 3: INSTALLATION TYPE: BIOMASS

Biomass energy is the use of biological material such as wood, agriculture products, animal waste and other organic residues as a source of renewable energy: it can be used as direct fuel in burning systems for the production of electricity and/or heat; it can also be converted into biogas through anaerobic digestion or gasification, which can then be used directly or burned in a co-generator for the production of electricity and/or heat; and can be converted into oil or liquid to produce biofuel or ethanol.

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P3.1 Type of biomass installation (required)*</p> <p><i>Please choose the type of biomass energy installation you want to enter into the database</i></p> <p><input type="radio"/> Biogas (fermentation of biomass)</p> <p><input type="radio"/> Syngas (thermal gasification from solid biomass)</p> <p><input type="radio"/> Biofuel (liquid fuel from plant materials)</p> <p><input type="radio"/> Bio-Ethanol (liquid fuel from plant materials)</p>	<p>The type of biomass installation will depend on the type of fuel energy produced.</p> <p>Biogas is a gas produced during the anaerobic (without oxygen) digestion or fermentation of organic biomass such as agriculture and animal waste. Biogas contains between 60 and 70% methane, which allow it to be used directly as fuel in stoves and lamps, or can be sent to a combustion engine to produce electricity.</p>  <p>Figure 18: Biogas production cycle</p> <p>Syngas or synthesis gas, is produced through the thermo-chemical process (under oxygen depleted, high pressure, high-heat and/or steam conditions), namely gasification, by which a carbon containing substance such as biomass is converted into a gas consisting mainly of hydrogen, carbon monoxide, carbon dioxide.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
	<div data-bbox="785 315 1406 730" data-label="Image"> </div> <p data-bbox="775 745 1347 770">Figure 19: Small scale metal sheet rural gasifier system</p> <p data-bbox="662 835 1528 1021">Biofuel is the production of organic biodegradable fuel from vegetable oils, waste cooking oils, animal fats and other plant, and animal materials and residues. These are then processed and often mixed with methanol or ethanol. Biofuel is used to replace natural non-renewable resources such as petroleum and coal.</p> <p data-bbox="662 1088 1528 1196">Ethanol is produced by extracting the sugar from various plants such as corn, sugar cane, bagasse or sunflowers, which is then fermented and distilled.</p>
<p data-bbox="73 1272 549 1301">P3.2 Input material per day (if known)</p> <p data-bbox="73 1319 638 1469"><i>Please specify the <u>origin</u> and <u>amount</u> (if known) of the input material fed into the biomass system, e.g. cow dung of 5 cows or 250 l cow dung or 20 kg Jatropha</i></p>	<p data-bbox="662 1272 1528 1422">Please write the <u>substrate</u> that is used for your installation and the <u>quantity</u>. There is a wide range of products and residues that can be used as substrate in a biomass system. The following are some examples of the most commonly used:</p> <ul data-bbox="711 1442 1517 1861" style="list-style-type: none"> • Animal waste: <ul style="list-style-type: none"> ○ Cow dung (how many cows or tonnes per day) ○ Pig Manure (how many pigs or tonnes per day) ○ Chicken droppings (how many chicken or tonnes per day) • Wood or wood residues i.e. sawdust (how many m³ per day) • Municipal solid waste (how many tonnes per day) • Agriculture residues (how many tonnes per day) • Jatropha (how many kg seeds per day) • Energy crops i.e. palm, soya, maize (how many tonnes per day) <p data-bbox="662 1928 1528 1995">In case you do not know the amount you can write the input material only.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P3.3 Quantity of gas or liquid fuel produced in liters (l) or m³ per day (if known)</p> <p><i>Please write the average quantity of biogas/syngas or biofuel/bio-ethanol produced in the installation per day specifying if in l or m³</i></p>	<p>Check the normal quantity of gas or biofuel or bio-ethanol produced in one day. In case your final product is sold, you should know your production per day. Please provide the volume you produce per day in liters or m³. In case you use the fuel for self consumption in a cogeneration system (or to run an engine) you should be able to provide the kWh produced in question P3.12 and 3.13. If the quantity of fuel actually produced per day is not known, just say for what and for how long the fuel is used for: e.g. 2 hours lighting and 1 hour cooking.</p>
<p>P3.4 Biomass installation investment cost (if known)</p> <p><i>Please write the investment cost of the installation in US\$</i></p>	<p>How much money was paid for the equipment and installation?</p>
<p>P3.5 Biomass installation maintenance cost per month (if known)</p> <p><i>Please write the maintenance cost for the installation per month in US\$</i></p>	<p>How much money is paid every month to maintain the system?</p>
<p>P3.6 Income generated from the biomass installation (if known)</p> <p><i>Please write the income generated by the installation per month in US\$</i></p>	<p>If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p>P3.7 Size of biodigester or processing area (if applicable)</p> <p><i>Please write the size of the biodigester or processing area in cubic meter(s) m³</i></p>	<p>Write the volume of the biodigester in m³ or the processing area where the biomass is received for treatment in m³.</p> <p>For rectangular shape:</p>  <p>For round shape:</p>  <p>The volume of the biodigester is the area where the substrate enters for treatment. Usually you were informed by the installer of the volume; typical volumes of small digesters are 4, 6, 8, 10 or 12 m³. In case you do not know this amount, provide the shape (rectangular or round) along with the height, the length and the depth or the diameter of the area.</p>



QUESTION NUMBER	ADDITIONAL EXPLANATION
	 <p data-bbox="756 786 1286 813">Figure 20: Typical biodigester for rural installations</p>
<p data-bbox="73 887 547 913">P3.8 Daily operation hours (if known)</p> <p data-bbox="73 936 636 992"><i>Please write the number of hours the installation is operating per day</i></p>	<p data-bbox="660 887 1533 992">How many hours a day is the system working? Means how many hours do you use the produced biogas for running a co-generator or for cooking and lightning e.g. 2 hours in the evening for lighting and 1 hour cooking.</p>
<p data-bbox="73 1066 636 1122">P3.9 Number of days of operation per year (if known)</p> <p data-bbox="73 1144 636 1200"><i>Please write the number of days the installation is operating in one year</i></p>	<p data-bbox="660 1066 1533 1171">Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities. Therefore, it is necessary to know the number of days of operation in one year.</p>
<p data-bbox="73 1283 579 1310">P3.10 Yearly operation hours (if known)</p> <p data-bbox="73 1332 636 1388"><i>Please write the number of hours the installation is operating per year</i></p>	<p data-bbox="660 1283 1533 1433">You either get this information from your records or you can also calculate it. To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating.</p>
<p data-bbox="73 1500 636 1574">P3.11 Total operation hours until today (if known)</p> <p data-bbox="73 1597 636 1686"><i>Please write the total number of hours the installation has been operating since its start-up</i></p>	<p data-bbox="660 1500 1533 1814">You either get this information from your records or you can also calculate it. You should calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of hours of operation per day. This will give you the total operation hours until today.</p>
<p data-bbox="73 1888 636 1962">P3.12 Daily electricity yield in kWh_e (if known)</p> <p data-bbox="73 1984 636 2040"><i>Please write the normal number of kilowatt-hour electrical the installation can produce per</i></p>	<p data-bbox="660 1888 1533 1993">Check the normal quantity of electricity produced in one day. You can see the amount of electricity produced on the meter. You just read the meter in the morning and in the evening and calculate the difference</p>


QUESTION NUMBER	ADDITIONAL EXPLANATION
<p><i>day</i></p>	<p>between the two values. You can also get the yield from the meter of your co-generator. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (operating one rice mill, a village grid by providing electricity for 20 households...), and for how many hours during one day.</p>
<p>P3.13 Daily heat yield in kWh_{th} (if known) Please write the normal number of kilowatt-hour thermal the installation can produce per day</p>	<p>Check the normal quantity of heat or steam produced in one day. You can see the amount of steam produced on the meter. You just read the meter in the morning and in the evening and calculate the difference between the two values. You can also get the yield from the meter of your co-generator. If the quantity of steam actually produced per day is not known, just say what is the steam used for (operating a steam turbine, supplying a small dry cleaning business, heating for a village of 20 households...) and for how many hours during one day.</p>
<p>P3.14 Yearly electricity yield in kWh_e (if known) Please write the number of kilowatt-hour electrical the installation can produce per year</p>	<p>You either get this information from your records or you can also calculate it. Take the normal quantity of kWh_e produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh_e produced in one year of operation.</p>
<p>P3.15 Yearly heat yield in kWh_{th} (if known) Please write the number of kilowatt-hour thermal the installation can produce per year</p>	<p>You either get this information from your records or you can also calculate it. Take the normal quantity of kWh_{th} produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh_{th} produced in one year of operation.</p>
<p>P3.16 Total electricity yield until today in kWh_e (if known) Please write the total number of kilowatt-hour electrical the installation has produced since its start-up</p>	<p>You either get this information from your records or you can also calculate it. With the quantity of kWh_e produced by the installation per day you should calculate the total number of kWh_e the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check how many days the installation has been working until now and multiply this number of days by the number of kWh_e generated per day. This will give you the total yield.</p>
<p>P3.17 Total heat yield until today in kWh_{th} (if known) Please write the total number of kilowatt-hour thermal the installation has produced since its start-up</p>	<p>You either get this information from your records or you can also calculate it. With the quantity of kWh_{th} produced by the installation per day you should calculate the total number of kWh_{th} the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
	year, check how many days the installation has been working until now and multiply this number of days by the number of kWh _{th} generated per day. This will give you the total yield.
<p>P3.18 People benefiting (if known) Please write the number of beneficiaries from the installation</p>	How many persons are served with the energy from the installation of this biomass system? If the system is only used by your family e.g., write the number of persons in your household. If the system serves the whole village, write the total number of villagers.
<p>P3.19 Is the installation connected to a co-generation system? <i>If yes, we would appreciate receiving more information on your system. If you agree, please press the Go to the co-generation page and then press Continue. This will take you automatically to the cogeneration page. If no, please go to question P3.20</i></p> <p><input type="radio"/> Go to the co-generation page</p>	<p>Biomass installations use substrate to produce fuel in the form of biogas, syngas, biofuel or bio-ethanol. These fuels are in turn sold as fuel or can be used as fuel in gas systems, in generators to produce electricity, or in co-generators to produce electricity and heat. If your installation is using a co-generation system, it would be useful for the database to know more about the system and therefore, if you agree to provide supplemental information on your co-generation system, by pushing the Go to the co-generation page and then Continue, you will be taken automatically to the respective page and will be allowed to add valuable information for the database.</p> <p>If you do not want to give the additional information, then just click on Go to the last page to submit data and then press continue to finalize your entry and submit the information you have already provided.</p>
<p>P3.20 Further Information: Please add all additional information available here (no space limitation)</p>	Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<div data-bbox="76 1664 336 1733" style="border: 1px solid black; padding: 2px; display: inline-block;"> « Back Continue » </div>	If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.

QUESTIONNAIRE PAGE 4: INSTALLATION TYPE: WIND POWER

Wind power is the conversion of wind energy into electricity, using wind turbines


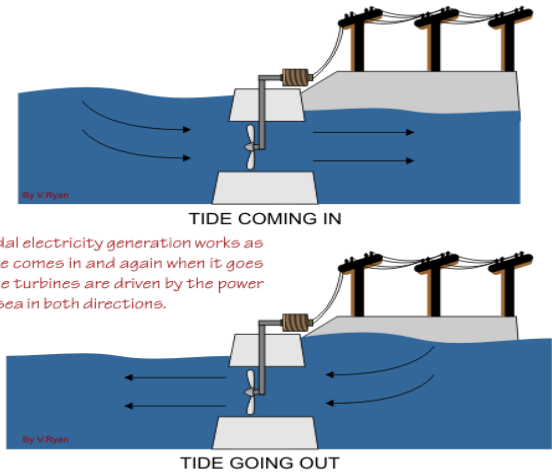
QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P4.1 Type of wind power installation (required) *</p> <p><i>Please confirm the wind energy installation you want to enter into the database</i></p> <p><input type="radio"/> Wind power (wind power generator)</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Figure 22: Wind turbine in isolated grids [www.RETSscreen.net _Phil Owens, Nunavut Power]</p> </div> <div style="text-align: center;">  <p>Figure 21: Off-grid Wind turbine www.RETSscreen.net _Southwest Windpower, NREL PIX]</p> </div> </div>
<p>P4.2 Wind installation investment cost (if known)</p> <p><i>Please write the investment cost of the installation in US\$ \$</i></p>	<p>How much money was paid for the equipment and installation?</p>
<p>P4.3 Wind installation maintenance cost per month (if known)</p> <p><i>Please write the maintenance cost for the installation per month in US\$</i></p>	<p>How much money is paid every month to maintain the system?</p>
<p>P4.4 Income generated from the wind installation (if known)</p> <p><i>Please write the income generated by the installation per month in US\$</i></p>	<p>If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p>P4.5 Plant size (if known)</p> <p><i>Please write the number of windmills in the installation</i></p>	<p>The installation may use only one windmill but can also be a windmill park, thus utilizing a number of windmills in the production of electricity. Just write how many windmills are in the installation.</p>

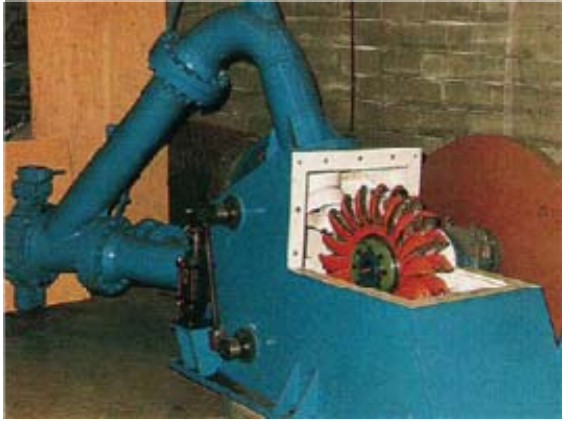
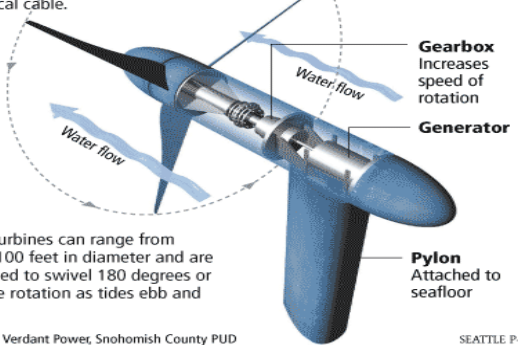
QUESTION NUMBER	ADDITIONAL EXPLANATION
	 <p data-bbox="660 741 1490 770">Figure 23: Windfarm [www.RETSscreen.net_ Photo Credit Warren Gretz NREL Pix]</p>
<p data-bbox="73 792 424 822">P4.6 Plant height (if known)</p> <p data-bbox="73 842 636 902"><i>Please write the height of the turbine in meter(s)</i></p>	<p data-bbox="660 792 1485 822">What is the height of the windmill turbine used to generate electricity?</p>
<p data-bbox="73 972 424 1001">P4.7 Plant power (if known)</p> <p data-bbox="73 1021 636 1081"><i>Please write the power production capacity of the installation in kW</i></p>	<p data-bbox="660 972 1398 1001">What is the maximum power capacity of the installation in kW.</p>
<p data-bbox="73 1151 547 1180">P4.8 Daily operation hours (if known)</p> <p data-bbox="73 1200 636 1261"><i>Please write the number of hours the installation is operating per day</i></p>	<p data-bbox="660 1151 1214 1180">How many hours a day is the system working?</p>
<p data-bbox="73 1330 636 1391">P4.9 Number of days of operation per year (if known)</p> <p data-bbox="73 1411 636 1471"><i>Please write the number of days the installation is operating in one year</i></p>	<p data-bbox="660 1330 1530 1435">Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities. Therefore, it is necessary to know the number of days of operation in one year.</p>
<p data-bbox="73 1554 579 1583">P4.10 Yearly operation hours (if known)</p> <p data-bbox="73 1603 636 1664"><i>Please write the number of hours the installation is operating in one year</i></p>	<p data-bbox="660 1554 1530 1704">You either get this information from your records or you can also calculate it. To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating.</p>
<p data-bbox="73 1778 636 1839">P4.11 Total operation hours until today (if known)</p> <p data-bbox="73 1859 636 1951"><i>Please write the total number of hours the installation has been operating since its start-up</i></p>	<p data-bbox="660 1778 1530 1995">You either get this information from your records or you can also calculate it. You should calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
	hours of operation per day. This will give you the total operation hours until today.
<p>P4.12 Daily yield in kWh (if known) <i>Please write the normal number of kilowatt-hour the installation can produce per day</i></p>	Check the normal quantity of electricity produced in one day. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (40W lamp bulb, television...), and for how many hours during one day.
<p>P4.13 Yearly yield in kWh (if known) <i>Please write the number of kilowatt-hour the installation can produce per year</i></p>	You either get this information from your records or you can also calculate it. Calculation: Take the normal quantity of kWh produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh produced in one year of operation.
<p>P4.14 Total yield until today in kWh (if known) <i>Please write the total number of kilowatt-hour the installation has produced since its start-up</i></p>	You either get this information from your records or you can also calculate it. Calculation: With the quantity of kWh produced by the installation per day you should calculate the total number of kWh the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of kWh generated per day. This will give you the total yield.
<p>P4.15 People benefiting (if known) <i>Please write the number of beneficiaries from the installation</i></p>	How many persons are served with the energy from the installation of this biomass system? If the system is only used by your family e.g., write the number of persons in your household. If the system serves the whole village, write the total number of villagers.
<p>P4.16 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<p><input type="button" value="« Back"/> <input type="button" value="Continue »"/></p>	If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.

QUESTIONNAIRE PAGE 5: INSTALLATION TYPE: WATER POWER

Water power is the use of the power of water through its movement to move a turbine a pressure motor or a wheel to produce electricity.

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P5.1 Type of water power installation * <i>Please choose the water energy installation you want to enter into the database</i></p> <p><input type="radio"/> Hydropower station (water power dam)</p> <p><input type="radio"/> Tidal power station (tidal wave power)</p>	<p>The type of water installation is determined by the type of movement of the water. If a hydro power dam, this is the power of water falling or running. The tidal power is from the movement of the tides.</p> <div style="text-align: center;">  </div> <p>Figure 24: Run of river small hydropower system - Photo Credit Johanne Hanko</p> <div style="text-align: center;">  <p style="color: red; font-size: small;">This tidal electricity generation works as the tide comes in and again when it goes out. The turbines are driven by the power of the sea in both directions.</p> </div> <p>Figure 25: Tidal power function scheme <small>(http://www.mywindpowersystem.com/wp-content/uploads/2009/08/renewable-energy-tidal-2.gif)</small></p>
<p>P5.2 Water installation investment cost (if known) <i>Please write the investment cost of the installation in US\$</i></p>	<p>How much money was paid for the equipment and installation?</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P5.3 Water installation maintenance cost per month (if known) <i>Please write the maintenance cost for the installation per month in US\$</i></p>	<p>How much money is paid every month to maintain the system?</p>
<p>P5.4 Income generated from the water installation per month (if known) <i>Please write the income generated by the installation per month in US\$</i></p>	<p>If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p>P5.5 Plant size (if known) <i>Please write the full height of the turbine in meter(s) and/or the diameter of the tidal turbine in meter(s)</i></p>	<p>Measure the height of the turbine used to produce electricity? Or write the diameter of the tidal turbine?</p>  <p>Figure 26: Pelton turbine of small hydropower system [www.RETSscreen.net]</p> <p>TAPPING TIDAL POWER A tidal turbine functions like a wind turbine under water. The ocean's currents turn the turbine blades, powering a generator. Electricity is transmitted to shore via submarine electrical cable.</p>  <p>Gearbox Increases speed of rotation</p> <p>Generator</p> <p>Pylon Attached to seafloor</p> <p>Tidal turbines can range from 15 to 100 feet in diameter and are designed to swivel 180 degrees or reverse rotation as tides ebb and flood.</p> <p>Sources: Verdant Power, Snohomish County PUD SEATTLE P-1</p> <p>Figure 27: Tidal turbine Verdant Power Snohomish County PUD.</p>
<p>P5.6 Plant power (if known) <i>Please write the power production capacity of the installation in kW</i></p>	<p>What is the maximum power capacity of the installation in kW. This is written on the plate located on the turbine.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P5.7 Daily operation hours (if known) <i>Please write the number of hours the installation is operating per day</i></p>	<p>How many hours a day is the system working?</p>
<p>P5.8 Number of days of operation per year (if known) <i>Please write the number of days the installation is operating in one year</i></p>	<p>Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities (e.g. no sufficient water during the dry season). Therefore, it is necessary to know the number of days of operation in one year.</p>
<p>P5.9 Yearly operation hours (if known) <i>Please write the number of hours the installation is operating per year</i></p>	<p>You either get this information from your records or you can also calculate it. To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating.</p>
<p>P5.10 Total operation hours until today (if known) <i>Please write the total number of hours the installation has been operating since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: Here you should calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of hours of operation per day. This will give you the total operation hours until today.</p>
<p>P5.11 Daily yield in kWh (if known) <i>Please write the normal number of kilowatt-hour the installation can produce per day</i></p>	<p>Check the normal quantity of electricity produced in one day. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (40W lamp bulb, television...), and for how many hours during one day.</p>
<p>P5.12 Yearly yield in kWh (if known) <i>Please write the number of kilowatt-hour the installation can produce per year</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: Take the normal quantity of kWh produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh produced in one year of operation.</p>
<p>P5.13 Total yield until today in kWh (if known) <i>Please write the total number of kilowatt-hour the installation has produced since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: With the quantity of kWh produced by the installation per day you should calculate the total number of kWh the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
	less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of kWh generated per day. This will give you the total yield.
<p>P5.14 People benefiting (if known) <i>Please write the number of beneficiaries from the installation</i></p>	How many persons are served with the energy from the installation of this biomass system? If the system is only used by your family e.g., write the number of persons in your household. If the system serves the whole village, write the total number of villagers.
<p>P5.15 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<div data-bbox="76 1160 311 1220" style="border: 1px solid black; padding: 2px; display: inline-block;"> « Back Continue » </div>	If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.

QUESTIONNAIRE PAGE 6: INSTALLATION TYPE: GEOTHERMAL POWER

Geothermal power is energy extracted from the heat stored in the earth and used directly for heating purposes or power generation.

QUESTION NUMBER	ADDITIONAL EXPLANATION
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P6.1 Type of geothermal power installation*

Please choose the type of geothermal energy installation you want to enter into the database

- Shallow Geothermal power (heat pump energy from the ground)
- Deep geothermal energy (drilling deep into the ground)

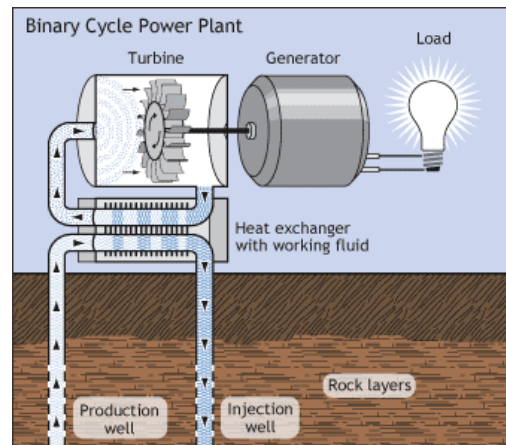


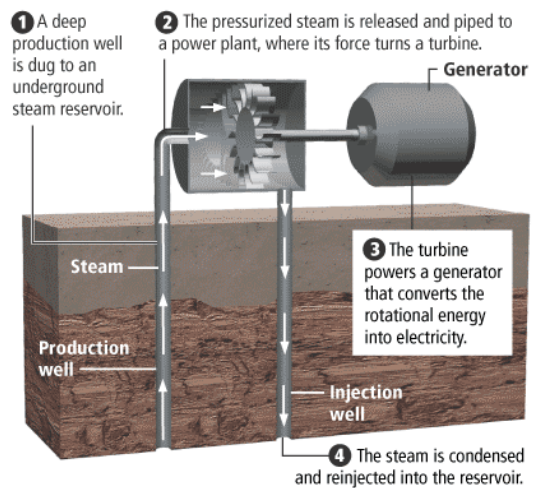
Figure 28: Shallow Geothermal power

<http://www.inverter-china.com/blog/articles/Geothermal-power/about-Geothermal-power.html>

HARNESSING GEOTHERMAL ENERGY

Geothermal power could theoretically satisfy all the world's energy needs. Trouble is, it's expensive to do the deep drilling necessary to tap the heat.


HOW IT WORKS



Source: U.S. Department of Energy

SEATTLE P-1

Figure 29: Deep geothermal energy, US Department of Energy


QUESTION NUMBER	ADDITIONAL EXPLANATION
	 <p data-bbox="767 741 1425 768">Figure 30: Geothermal station in Alaska, www.ecolamancha.org.</p>
<p data-bbox="73 792 635 860">P6.2 Geothermal installation investment cost (if known)</p> <p data-bbox="73 880 635 947"><i>Please write the investment cost of the installation in US\$</i></p>	<p data-bbox="660 792 1406 819">How much money was paid for the equipment and installation?</p>
<p data-bbox="73 1023 635 1090">P6.3 Geothermal installation maintenance cost per month (if known)</p> <p data-bbox="73 1111 635 1178"><i>Please write the maintenance cost for the installation per month in US\$</i></p>	<p data-bbox="660 1023 1406 1050">How much money is paid every month to maintain the system?</p>
<p data-bbox="73 1303 635 1370">P6.4 Income generated from the geothermal installation per month (if known)</p> <p data-bbox="73 1391 635 1458"><i>Please write the income generated by the installation per month in US\$</i></p>	<p data-bbox="660 1303 1528 1370">If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p data-bbox="73 1534 635 1601">P6.5 Plant depth in meter(s) (if known)</p> <p data-bbox="73 1621 635 1688"><i>Please write the depth of the drilling in meter(s)</i></p>	<p data-bbox="660 1534 1528 1601">How deep is the drilling or the hole from which the hot water/steam is coming out from?</p>
<p data-bbox="73 1668 635 1736">P6.6 Plant power in kW (if known)</p> <p data-bbox="73 1756 635 1823"><i>Please write the power production capacity of the installation in kW</i></p>	<p data-bbox="660 1668 1528 1736">What is the maximum power capacity of the installation in kW. This is written on the plate located on the turbine.</p>
<p data-bbox="73 1859 635 1926">P6.7 Daily operation hours (if known)</p> <p data-bbox="73 1946 635 2013"><i>Please write the number of hours the installation is operating per day</i></p>	<p data-bbox="660 1859 1214 1886">How many hours a day is the system working?</p>


QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P6.8 Number of days of operation per year (if known) <i>Please write the number of days the installation is operating in one year</i></p>	<p>Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities (e.g. no sufficient water during the dry season). Therefore, it is necessary to know the number of days of operation in one year.</p>
<p>P6.9 Yearly operation hours (if known) <i>Please write the number of hours the installation is operating per year</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating.</p>
<p>P6.10 Total operation hours until today (if known) <i>Please write the total number of hours the installation has been operating since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: Here you should calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of hours of operation per day. This will give you the total operation hours until today.</p>
<p>P6.11 Daily yield in kWh (if known) <i>Please write the normal number of kilowatt-hour the installation can produce per day</i></p>	<p>Check the normal quantity of electricity produced in one day. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (40W lamp bulb, television...), and for how many hours during one day.</p>
<p>P6.12 Yearly yield in kWh (if known) <i>Please write the number of kilowatt-hour the installation can produce per year</i></p>	<p>You either get this information from your records or you can also even calculate it. Calculation: Take the normal quantity of kWh produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh produced in one year of operation.</p>
<p>P6.13 Total yield until today in kWh (if known) <i>Please write the total number of kilowatt-hour the installation has produced since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: With the quantity of kWh produced by the installation per day you should calculate the total number of kWh the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of kWh generated per day. This will give you the total yield.</p>

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P6.14 People benefiting (if known) <i>Please write the number of beneficiaries from the installation</i></p>	<p>How many persons are served with the energy from the installation of this biomass system? If the system is only used by your family e.g., write the number of persons in your household. If the system serves the whole village, write the total number of villagers.</p>
<p>P6.15 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	<p>Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.</p>
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<div data-bbox="76 1032 309 1093" style="border: 1px solid black; padding: 2px; display: inline-block;"> « Back Continue » </div>	<p>If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.</p>

QUESTIONNAIRE PAGE 7: INSTALLATION TYPE: CO-GENERATION POWER

Co-generation, also known as heat and power (CHP), is the use of a heat engine or a power station to simultaneously generate both electricity and heat.

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P7.1 Type of co-generation installation * <i>Please choose the type of co-generation energy installation you want to enter into the database</i></p> <p><input type="radio"/> Solid fuel co-generation unit (efficient combined heat and power station)</p> <p><input type="radio"/> Liquid fuel co-generation unit (efficient combined heat and power station)</p> <p><input type="radio"/> Gaseous fuel co-generation unit (efficient combined heat and power station)</p>	<p>The type is determined by the kind of fuel utilized, that is, if the fuel is in the form of solid, liquid or gas.</p>  <p>Figure 31: Biogas co-generator</p>
<p>P7.2 Co-generation installation investment cost (if known) <i>Please write the investment cost of the installation in US\$</i></p>	<p>How much money was paid for the equipment and installation?</p>
<p>P7.3 Co-generation installation maintenance cost per month (if known) <i>Please write the maintenance cost for the installation per month in US\$</i></p>	<p>How much money is paid every month to maintain the system?</p>
<p>P7.4 Income generated from the co-generation installation (if known) <i>Please write the income generated by the installation per month in US\$</i></p>	<p>If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p>P7.5 Plant height (if known) <i>Please write the full height of the co-generation</i></p>	<p>Measure the height of the co-generation unit, and write it in meters.</p>


<p><i>unit in meter(s)</i></p>	
<p>P7.6 Plant power (if known) <i>Please write the power production capacity of the installation in kW</i></p>	<p>The maximum power capacity of the installation in kW is written on the plate located on the co-generation unit.</p>  <p style="text-align: center;">Figure 32: Biogas co-generator information plate</p>
<p>P7.7 Daily operation hours (if known) <i>Please write the number of hours the installation is operating per day</i></p>	<p>How many hours a day is the system working?</p>
<p>P7.8 Number of days of operation per year (if known) <i>Please write the number of days the installation is operating in one year</i></p>	<p>Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities (e.g. no sufficient water during the dry season). Therefore, it is necessary to know the number of days of operation in one year.</p>
<p>P7.9 Yearly operation hours (if known) <i>Please write the number of hours the installation is operating per year</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating.</p>
<p>P7.10 Total operation hours until today (if known) <i>Please write the total number of hours the installation has been operating since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: Here you should calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of hours of operation per day. This will give you the total operation hours until today.</p>

<p>P7.11 Daily yield in kWh (if known) <i>Please write the normal number of kilowatt-hour the installation can produce per day</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: Check the normal quantity of electricity produced in one day. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (40W lamp bulb, television...), and for how many hours during one day.</p>
<p>P7.12 Yearly yield in kWh (if known) <i>Please write the number of kilowatt-hour the installation can produce per year</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: Take the normal quantity of kWh produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh produced in one year of operation.</p>
<p>P7.13 Total yield until today in kWh (if known) <i>Please write the total number of kilowatt-hour the installation has produced since its start-up</i></p>	<p>You either get this information from your records or you can also calculate it. Calculation: With the quantity of kWh produced by the installation per day you should calculate the total number of kWh the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of kWh generated per day. This will give you the total yield.</p>
<p>P7.14 People benefiting (if known) <i>Please write the number of beneficiaries from the installation</i></p>	<p>How many persons are served with the energy from the installation of this biomass system? If the system is only used by your family e.g., write the number of persons in your household. If the system serves the whole village, write the total number of villagers.</p>
<p>P7.15 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	<p>Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.</p>
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<p><input type="button" value="« Back"/> <input type="button" value="Continue »"/></p>	<p>If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.</p>

QUESTIONNAIRE PAGE 8: INSTALLATION TYPE: HYBRID POWER PLANT

Hybrid power systems combine two or more types of renewable energy systems referred in this questionnaire, and can also be combined with fossil fuel systems.

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P8.1 Type of Hybrid installation (required) * <i>Please choose the type(s) of energy system(s) used in the hybrid installation you want to enter into the database (select all sources involved in the hybrid installation – minimum two sources)</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Solar photovoltaic <input type="checkbox"/> Solar thermal <input type="checkbox"/> Biomass <input type="checkbox"/> Biogas <input type="checkbox"/> Syngas <input type="checkbox"/> Biofuel (i.e. crop oil) <input type="checkbox"/> Ethanol <input type="checkbox"/> Wind <input type="checkbox"/> Water <input type="checkbox"/> Natural Gas <input type="checkbox"/> LPG <input type="checkbox"/> Diesel <input type="checkbox"/> Gasoline <input type="checkbox"/> Coal <input type="checkbox"/> Other 	<p>The type is determined by the kind of fuel or energy source utilized in the production of electricity. Hybrid systems use a minimum or two energy sources in their power generation (e.g. solar and wind, biomass and diesel...).</p> <p>The following figure shows a wind and solar hybrid system.</p> <div style="text-align: center;"> </div> <p style="text-align: center;">Figure 33: Hybrid Off-Grid PV System Schematic (DGS, 2005)</p> <p>Please see the definitions of the single systems in the different questionnaire pages: QUESTIONNAIRE Page 2: Installation Type: Solar QUESTIONNAIRE Page 3: Installation Type: Biomass QUESTIONNAIRE Page 4: Installation Type: Wind Power QUESTIONNAIRE Page 5: Installation Type: Water Power QUESTIONNAIRE Page 6: Installation Type: Geothermal Power QUESTIONNAIRE Page 7: Installation Type: Co-Generation Power</p>
<p>P8.2 Total Hybrid installation investment cost (if known) <i>Please write the investment cost of the installation in US\$</i></p>	<p>How much money was paid for the equipment and installation?</p>

<p>P8.3 Total Hybrid installation maintenance cost per month (if known) <i>Please write the maintenance cost for the installation per month in US\$</i></p>	<p>How much money is paid every month to maintain the system?</p>
<p>P8.4 Income generated from the hybrid installation per month (if known) <i>Please write the income generated by the installation per month in US\$</i></p>	<p>If the energy is sold to the community or to the grid, what is the amount of money collected every month?</p>
<p>P8.5 Plant size (if known) <i>Please write the area occupied by the hybrid installation in square meters</i></p>	<p>What is the area occupied by the hybrid unit including each source? Write this surface area in square meters including all systems combined.</p>
<p>P8.6 Plant height (if known) <i>Please write the full height of the hybrid electricity generator unit in meter(s)</i></p>	<p>Measure the height of the hybrid generator unit, and write it in meters.</p>
<p>P8.7 Plant power (if known) <i>Please write the power production capacity of the installation in kW</i></p>	<p>What is the power capacity of the hybrid system installation in kW</p>  <p>Figure 34: Hybrid hydro-PV system [NEDO_MEM 2006]</p>
<p>P8.8 Daily operation hours (if known) <i>Please write the number of hours the installation is operating per day</i></p>	<p>How many hours a day is the hybrid system working?</p>
<p>P8.9 Number of days of operation per year (if known) <i>Please write the number of days the installation is operating in one year</i></p>	<p>Some systems may not be operating 365 days a year because of the changes in the season or the changes in necessities (e.g. no sufficient water during the dry season). Therefore, it is necessary to know the number of days of operation in one year. This may vary from one source to another, justifying the need for various sources of energy.</p>

	Please write the number of days of operation for the energy provided from the hybrid system.
<p>P8.10 Yearly operation hours (if known) <i>Please write the number of hours the installation is operating per year</i></p>	You either get this information from your records or you can also calculate it. Calculation: To calculate the number of hours of operation per year you must multiply the number of hours per day by the number of days the system is actually operating during the year.
<p>P8.11 Total operation hours until today (if known) <i>Please write the total number of hours the installation has been operating since its start-up</i></p>	You either get this information from your records or you can also calculate it. Calculation: Here you should calculate the total number of hours the system has been operational since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of hours of operation per day. This will give you the total operation hours until today for the hybrid system.
<p>P8.12 Daily yield in kWh (if known) <i>Please write the normal number of kilowatt-hour the installation can produce per day</i></p>	Check the normal quantity of electricity produced in one day. If the quantity of electricity actually produced per day is not known, just say what is the electricity used for (40W lamp bulb, television...), and for how many hours during one day.
<p>P8.13 Yearly yield in kWh (if known) <i>Please write the number of kilowatt-hour the installation can produce per year</i></p>	You either get this information from your records or you can also calculate it. Calculation: Take the normal quantity of kWh produced by the installation per day and multiply this number by the number of days the system is operating every year. This will give you the total quantity of kWh produced in one year of operation for the hybrid system.
<p>P8.14 Total yield until today in kWh (if known) <i>Please write the total number of kilowatt-hour the installation has produced since its start-up</i></p>	You either get this information from your records or you can also calculate it. Calculation: With the quantity of kWh produced by the installation per day you should calculate the total number of kWh the system has generated since the very beginning of operation. For example, if the installation has been operating for more than one year, or less than one year, check <u>how many days</u> the installation has been working until now and multiply this number of days by the number of kWh generated per day. This will give you the total yield for the hybrid system.
<p>P8.15 People benefiting (if known) <i>Please write the number of beneficiaries from the installation</i></p>	How many persons are served with the energy from the installation of this biomass system? If the system is only used by your family e.g., write the number of persons in your household. If the system serves the whole village, write the total number of villagers.

<p>P8.16 Further Information: <i>Please add all additional information available here (no space limitation)</i></p>	<p>Here is where you have the opportunity to write any additional information you think could be useful to better understand the installation. We are very thankful for any further information on your installation or comments to the questionnaire itself.</p>
<p>Go to the last page to submit your data *</p> <p><input type="radio"/> Go to the last page</p>	<p>Just click on Go to the last page, in order to register the system into the data bank. It will take you there automatically.</p> <p>If you want to register another system, finish this registration and start again with the new registration.</p>
<p><input type="button" value="« Back"/> <input type="button" value="Continue »"/></p>	<p>If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Continue, you will be taken to the last page for registration.</p>

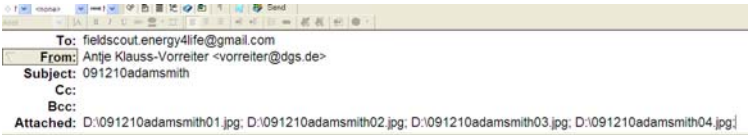
QUESTIONNAIRE PAGE 9: SUBMIT

Final page

QUESTION NUMBER	ADDITIONAL EXPLANATION
<p>P9.1 Date of submission (required) * <i>Please write today's date as your official submission date (dd/mm/yy)</i></p>	<p>It is necessary to write the date of submission to allow updating of the database.</p>
<p>Thank you for providing your data! <i>Please submit your data now and give us your comments if you have any.</i></p>	<p>Here you can write any further data, comments or suggestions on the questionnaire itself, or on the project as a whole. There is no space limitation and therefore your detailed inputs are most welcomed.</p> <p>Your ideas and recommendations will be taken into consideration towards improvement and updating of the database.</p>
<p>« Back <u>Submit</u></p>	<p>If you feel you forgot something, you can go back to the previous page by pressing Back. Otherwise, by pressing Submit you will be entering the information provided into the database.</p>

SUBMISSION CONFIRMATION AND PICTURE(S)

Along with the information, we would appreciate if you could send us a picture or a few pictures of the installation you have registered.

Submission confirmation	ADDITIONAL EXPLANATION
<p>Thanks!</p> <p>Your contribution to the energy4life project is greatly appreciated.</p> <p>Your data will be verified and published.</p> <p>Please send 1 to 4 pictures (preferably in jpg format) of the installation to:</p> <p style="text-align: center;">fieldscout.energy4life@gmail.com</p> <p>Please write in the subject of the email the following information:</p> <p>Today's date and your name as given in question P1.1 means:</p> <p>yymmddname</p> <p>Example:</p> <p>P1.1 Your name: Adam Smith</p> <p>Today is: December 10th 2009</p> <p>Subject:</p> <p>091210adamsmith</p>	<p>We would really like to complete the database by entering 1 to 4 pictures of the installation. The picture(s) you can simply send to:</p> <p>fieldscout.energy4life@gmail.com</p> <p>We would prefer receiving the picture(s) in jpg format although other formats are also acceptable.</p> <p>In the subject of the email, you should write today's date and your name as given in question P1.1. What this means is that the subject title will look like this:</p> <p>yymmddname</p> <p>Example:</p> <p>P1.1 Your name: Adam Smith; and today is: December 10th 2009 => Subject: 091210adamsmith</p>  <p>You also could name each picture accordingly. See the example above. Adam Smith sent 4 pictures with the names numbering the pictures:</p> <p>091210adamsmith01</p> <p>091210adamsmith02</p> <p>091210adamsmith03</p> <p>091210adamsmith04</p>

THANK YOU FOR YOUR CONTRIBUTION

The information gathered through this questionnaire will serve as the basis for the elaboration of the database of best practices and successful experiences. This database will be an important tool to efficiently organise information, which is to be disseminated to both government and non-government organizations, and to allow their review, understanding, successful implementation, sustainability and replication.

Although the information collected from the questionnaire may appear preliminary, it will allow the elaboration of the database, indicating the types of renewable energy installation the world over, their number and their location. From this preliminary information, further and more detailed information can be gathered as to allow the compilation of best practices and successful experiences, as to encourage their replication.

Your input and contribution to the database, will improve the understanding of the relationship between energy systems and sustainable development. This will contribute to the promotion of energy efficiency through the use of renewable sources, will encourage technologies that offer alternatives for clean and safe energy supply and use, and will help find ways for developing countries to avoid the wasteful and destructive stages that have characterised industrialisation in the past. Your input will also show that it is possible for people living in the most remote areas to have access to energy, and that energy facilitates access to basic needs thus helps mitigate poverty and malnutrition.

In the name of DGS, of ISTITUTO OIKOS ONLUS, and of ALL THE PEOPLE LIVING WITHOUT ENERGY, we wish to thank you for your time and participation in the development of the database and for your contribution to the improvement of quality of life as to promote the use of renewable energies as a tool for achieving sustainable development and for improving the quality of life in Europe and in developing countries.
