



HOTEL  
ENERGY  
SOLUTIONS

# Energy toolkit The developers' perspective

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## The developers' perspective

The toolkit has been designed to be as easy to-follow and 'intuitive' as possible

Check-boxes and radio buttons are used for most questions – data entry boxes are used for data on hotel energy use

This presentation will cover:

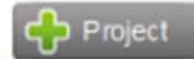
- ▶ Managing your data
- ▶ The questionnaire user interface
- ▶ Available reports and other options





## My projects

Hotel energy calculator



My account | My projects | User: test\_hotel | Log Out



### My projects

Total number of projects: 4

- New Hotel record [View / edit project](#)  Delete the project 🚫 Incomplete
- Pleasure [View / edit project](#)  Delete the project ✅ Complete 25/11/2010 11:53:00 μμ
- test hotel b [View / edit project](#)  Delete the project ✅ Complete 22/12/2010 3:54:00 μμ
- Test hotel c [View / edit project](#)  Delete the project 🚫 Incomplete

After completing the questionnaire by clicking the link each hotelier can modify it separately

You can delete the selected project

Only when the questionnaire is fully completed the hotelier can access all the related reports





## Management of your data

- ▶ Confidentiality of all data entered is ensured
- ▶ Hotels can create different accounts for different hotels or for the same hotel in different years
- ▶ Data can be edited after its been entered
- ▶ Once the questionnaire is fully completed, the HES toolkit creates reports on energy use, solutions and carbon emissions





## The toolkit questionnaire:

6 steps cover:

- ▶ General data
- ▶ Hotel type, occupancy and staff
- ▶ Hotel description
- ▶ Energy consumption (purchased and non-renewable sources)
- ▶ Renewable energy produced by the hotel
- ▶ Energy efficiency measures





## The developers' perspective

- ▶ The questionnaire is structured to hide more detailed questions that are not relevant to particular hotels
- ▶ Help text is provided throughout (Click on the blue '?'s)
- ▶ Energy data can be entered in a range of different units according to the units user on hotels' energy bills





Ques

Hotel energy calculator - Home About Application components User guide English Go

Hotel energy calculator Project My account My projects User: test\_hotel Log Out

Questionnaire Current project: Pleasure

Step 4: Energy consumption (purchased from renewable and non-renewable sources)

Step 4: Energy consumption (purchased from renewable and non-renewable sources) ?

Electricity ?

Type of use: ?

Heating  Air conditioning & Ventilation  Domestic hot water  Lighting

Amount of total electricity consumed ? 125000

Unit Kilowatt hour (kWh)

Coal ?

District Heating ?

(LPG) Liquefied petroleum gas ?

Type of use: ?

Heating  Air conditioning & Ventilation  Domestic hot water  Lighting

Amount of liquefied petroleum gas ? 100000

Unit Kilowatt hour (kWh)

Natural gas ?

Heavy oil (e.g., heavy fuel oil, residential fuel oil) ?

Show all the energy sources you use currently. 10 min.

Energy related report

Energy solutions

Return on investment calculator

Carbon footprint

Market your activities





## Energy units

Hotel energy calculator - Home About Application components User guide English Go

Hotel energy calculator Project My account My projects User: test\_hotel Log Out

Questionnaire

Current project: Pleasure

Step 5: Renewable energy produced by the hotel

Does your hotel have installed any renewable energy sources? ?

Yes  No  Don't know

Geothermal energy (ground source heat pumps) ?

Type of use: ?

Heating  Air conditioning & Ventilation  Domestic hot water

Renewable energy capacity installed in your hotel ?

Geothermal energy (ground source heat pumps) (kW)

Amount of renewable energy generated from this energy source in your hotel during the year of reference ?

Geothermal energy (ground source heat pumps)

Unit

Geothermal energy for swimming pools ?

Aerothermal heat pumps ?

Micro hydropower

Solar photovoltaic electricity ?

Please select from the list

- Please select from the list
- Kilowatt hour (kWh)
- Megawatt hour (MWh)
- TeraJoule (TJ)
- GigaJoule (GJ)
- MegaJoule (MJ)
- million BTU (mmBtu)
- Therm (thm)

Energy units are very crucial for the calculations that are taking place in the available reports. CO2 emission and energy related report are based upon those units.





## Completed questionnaire

When the questionnaire is completed, the data entered is used to create 3 reports:

- ▶ Energy related report
- ▶ Energy solutions report
- ▶ Carbon footprint report

There are also 2 more options:

- ▶ Return on Investment Calculator (being developed)
- ▶ Market your activities





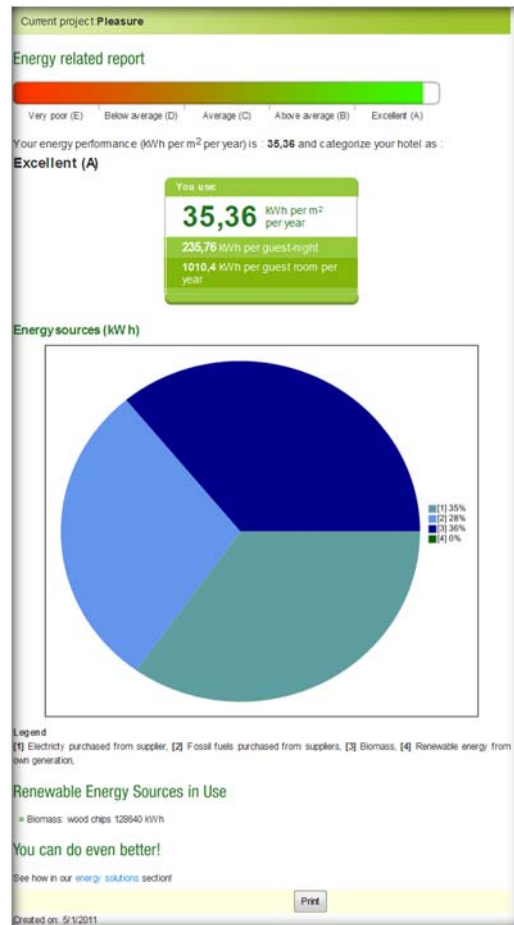
## The outcomes

The screenshot shows the 'Hotel energy calculator' web application. The top navigation bar includes 'Hotel energy calculator - Home', 'About', 'Application components', and 'User guide'. There are also icons for email, a lifebuoy, and a language dropdown set to 'English' with a 'Go' button. Below the navigation, the main header displays 'Hotel energy calculator' and user information: '+ Project', 'My account | My projects | User: test\_hotel | Log Out'. A green banner indicates the 'Current project: Pleasure'. The main content area states 'You have complete the questionnaire! The following reports are available:' and lists three options: 'Energy related report' (Assessing your hotel's current energy use/efficiency and carbon footprint), 'Energy solutions' (Assessing your hotel's current energy use/efficiency and carbon footprint), and 'Carbon footprint' (Measuring your hotel's impact on our climate by estimating the total set of greenhouse gases (GHG) emissions). A left sidebar contains menu items: 'Questionnaire', 'Energy related report', 'Energy solutions', 'Return on investment calculator', 'Carbon footprint', and 'Market your activities'.





# Energy related report



Energy benchmark



Energy indices



Percentages of energy sources to total energy use



Renewable energy sources in use



Link to energy solution report





## Hotel energy calculator

+ Project

My account | My projects | User: test\_hotel | Log Out

Questionnaire

Current project: Pleasure

Energy related report

### Energy Solutions

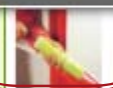
Energy solutions

#### Proposed energy saving solutions for your hotel

**Prevention of air infiltration and of unnecessary outdoor air supply**  
 Air infiltrations at doors and windows as well as continuously open entrance doors are a big source of energy loss in a hotel. Solutions to prevent those losses exist and can result in significant savings of energy.

**Technologies covered**  
**Indicative cost**  
 Draught proofing ~ 200 € installed

Heating / Cooling



[Read more](#)



[Read more](#)

Aerothermal heat pumps



[Read more](#)

General electricity



[Read more](#)

Key card systems to switch off electricity in guestrooms



[Read more](#)

Solar Photovoltaic



[Read more](#)

#### How to go further

Obtain in-depth recommendations: [ask for an energy audit of your hotel](#)

Involve your staff: [see how to train them on energy issues](#)



# Carbon footprint

Hotel energy calculator - Home About Application components User guide English Go

Hotel energy calculator + Project My account | My projects | User: test\_hotel | Log Out

Questionnaire

Energy related report

Energy solutions

Return on investment calculator

**Carbon footprint**

Market your activities

Current project: **Pleasure**

## Carbon footprint

Your hotel creates **74726,1 Kgs of CO<sub>2</sub> per year**

You emit:

<b>74726,1</b>	Kgs CO <sub>2</sub> /yr
0	from electricity
74726,1	from fossil
0	from biomass
0	from other renewable energies

Created on: 8/1/2011





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# Thank you

»» <http://hes.e-benchmarking.org/>

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