



# ELNetWeb

## Billing and Power Quality software

### General Information

# Contents

- 1 Overview.....3
- 2 System requirements for ELNetWeb server .....4
- 3 Program Activation .....5
  - 3.1 Setting up the program.....5
- 4 Meters and Accounts settings .....6
  - 4.1 General definitions: .....6
    - 4.1.1 Communication defenitions: .....6
    - 4.1.2 Serial communication: .....7
    - 4.1.3 TAL/TCP communication:.....8
    - 4.1.4 Saving \ updating the defenitoinis:.....8
  - 4.2 Creating\updating an account (client) in the software: .....9
    - 4.2.1 General definitions: .....9
    - 4.2.2 Saving \ updating the defenitoinis:.....11
  - 4.3 Price lists: .....11
    - 4.3.1 Creating\updating price groups in the system .....11
    - 4.3.2 Saving \ updating the defenitoinis:.....13
- 5 Reports .....13
  - 5.1 Billing report.....13
  - 5.2 Consumption report .....16
- 6 Trends.....18
  - 6.1 Standard Trends .....19
- 7 Power Quality .....20
  - 7.1 EN50160 Report .....20
  - 7.2 Event summary and Wave forms. ....22
- 8 User Settings.....23

# 1 Overview

Elnet WEB is a user friendly software package that is especially designed for logging electrical energy consumption from Elnet Powermeters and generating electrical bills. Elnet Billing provides detailed energy reports on a daily, monthly and annual basis, as well as advanced T.O.U. billing capabilities. Data can be exported to Excel data base.

The purpose of this document is to provide general information about the software Elnet WEB and the options that it offers. The software is the perfect solution to monitor energy consumption and prepare bills, consumption reports, monitor trends etc.

Elnet WEB is the energy billing solution for hospitals, business buildings, shopping centers or and building where electrical energy monitoring is needed. Preparing bills for tenants based of their consumption is done with ease!

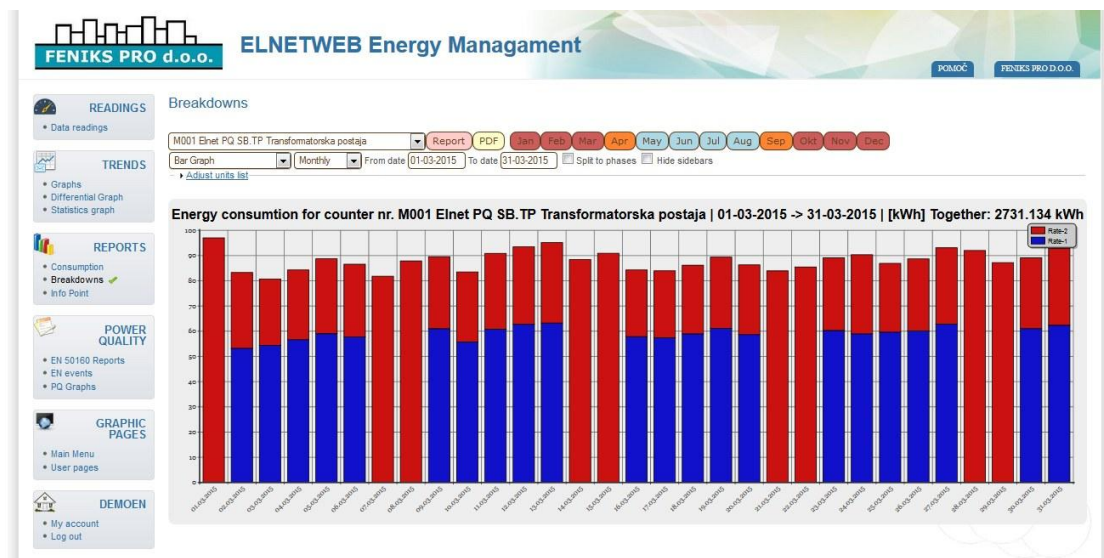


Figure 1 General overview on the user interface of Elnet WEB

## 2 System requirements for ELNetWeb server

Installation must be done as administrator on Windows 7 or Windows server 2008 Machines. On Windows XP the installation must be using Admin privileges. (Please read the attached to the installation files README file before installing).

Component	Requirement
Computer and processor	500-megahertz (MHz) processor or higher; 1 gigahertz (GHz) or higher is recommended.
Memory	2GB or higher is recommended. More memory may be needed for certain advanced functionality.
Hard disk	5 gigabyte (GB) available disk space. Backups and large databases may require larger storage.
Operating system	Supports both 32-bit or 64-bit editions of Windows Server 2008, Windows Server 2003, Windows 7, Windows XP
Additional	Requirements and product functionality can vary based on the system configuration and operating system.
Other	<ul style="list-style-type: none"><li>• Supported antivirus software: Norton anti-virus, Windows defender.</li><li>• We have some bad experience with other antivirus software (such as Kasparsky..)</li><li>• Functionality requires Internet WAN/LAN access.</li></ul>

System requirements for ELNetWeb Client:

Component	Requirement
Operating system	The system supports different clients including mobile phones and tablets. The system supports different Operating systems including Windows, Mac OSX and Unixes.
Additional	Requirements and product functionality can vary based on the system configuration and operating system.
Other	<ul style="list-style-type: none"> <li>Supported browsers: IE-8 and above, Chrome-8 and above, Firefox-8 and above.</li> <li>Functionality requires Internet WAN/LAN access.</li> </ul>

### 3 Program Activation

#### 3.1 Setting up the program

After the program is installed and the interface (Billing, PQ, PQ + Billing) restored:

1. Activate your browser (Internet Explorer, Firefox etc..) and insert in the address line:

“localhost/elnetweb/”. The ELNetWeb Welcome screen will appear.



Figure 2 Elnet WEB Welcome Screen

2. Insert the user name and password (ask your local software distributor).
3. The home screen will appear.

## 4 Meters and Accounts settings

At the left part of the screen located all the menus of the software, based on to the user interface and user access definitions.



Figure 3 Home Screen

Creating\updating a meter in the software:

In order to read the data from an ELNet powermeter, it must be defined in the Software. These definitions will contain all the general and communication Information.

### 4.1 General definitions:

#### 4.1.1 Communication defenitions:

1. In the left toolbar, under the "Settings" menu click on "Units".
2. The Unit settings screen will appear.



**Figure 4 TCP/IP communication**

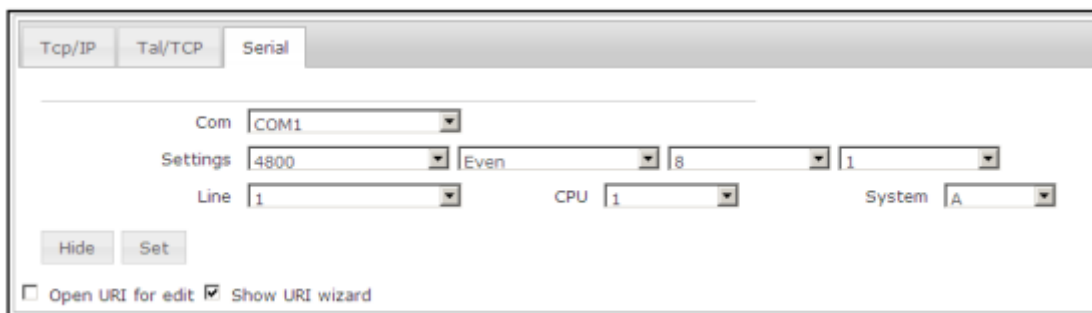
4. In the IP field please insert the IP address of the meter.

In the CPU field please insert the serial communication address of the meter.

#### 4.1.2 Serial communication:

Serial communication:

1. In the left toolbar under the "Settings" menu click on the "Units" menu.
2. The Unit settings screen will appear.
3. Click on the "Serial" button.
4. The Serial communication settings screen will appear.



**Figure 5: Serial communication**

5. COM - the correct serial COM number to which the meter is connected.

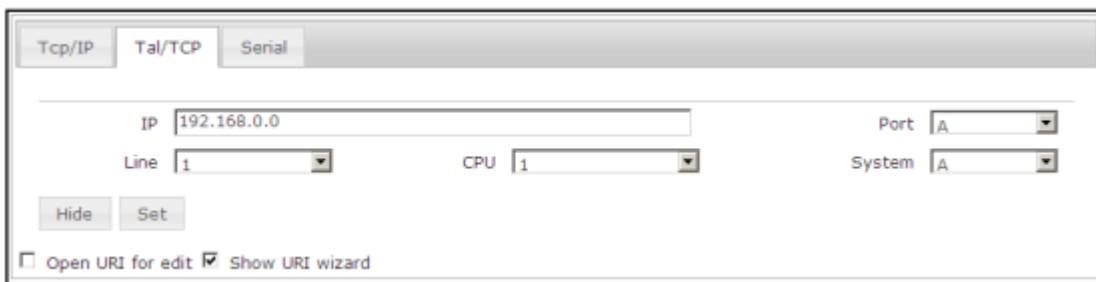
**Important – to each PC COM can be connected up to 31 meters only!**

6. Settings - the Baud Rate, Parity, Data bit (default 8) and Stop bit (default 1) – as defined in the meter.
7. Line - only if using Tal-Win communication convertor. If not, remains line 1.
8. CPU - the serial address of the meter (1-31).

9. System – used only with ELNet TXT meters.
10. Once finished click on the "SET" button.

#### 4.1.3 TAL/TCP communication:

1. In the left toolbar under the "Settings" menu click on the "Units" menu.
2. The Unit settings screen will appear.
3. Click on the "TAL/TCP" button.
4. The TAL/TCP communication settings screen will appear.



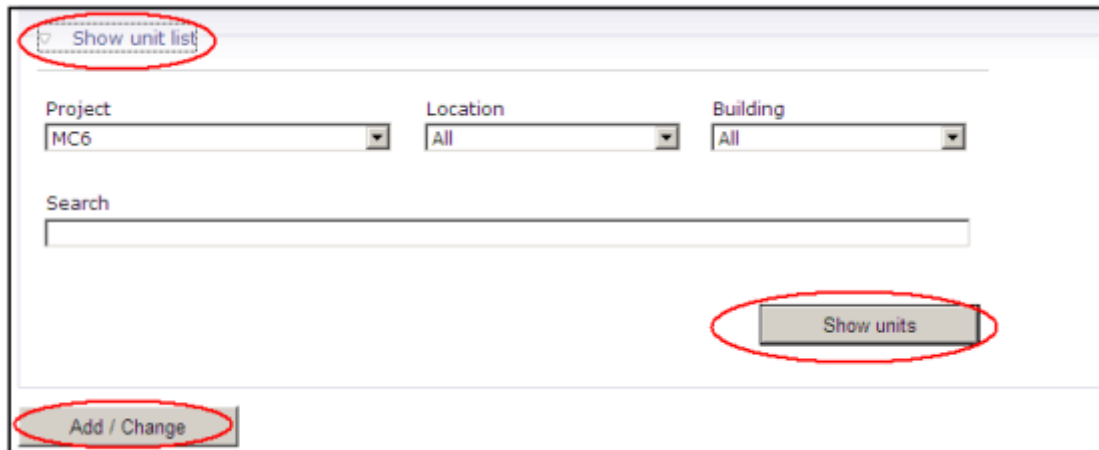
**Figure 6: TAL/TCP communication**

5. The TAL TCP communication settings are applied in case that a meter with TCP IP communication port is used as gate way for other meters connected to it by RS485 (up to 31 meters) or in case that a TAL TCP model convertor is used.
6. IP – the IP address of the Gate Way meter or TAL TCP convertor.
7. Line – only for TAL TCP convertor, choose the line number is used.
8. CPU – the serial address of the meter connected by RS485.
9. Port – only for TAL TCP, choose the TAL TCP port.
10. System – only for ELNet TXT meters.
11. Once finished click on the "SET" button.

#### 4.1.4 Saving \ updating the defenitoinis:

1. Once all the defenitions (general defenitions and communiton) of the meter are ready, click on the "Add / Change" button, this will add the meter to the system.





**Figure 7: "Add / Change", "Show unit list" and "Show units" buttons**

2. Clicking on "Show unit list" will allow to search for particular meter in the system, or by clicking on the "Show units" will present the entire list of meters which are existing in the system.  
 In order to change the definitions in already existing meter, choose it from the list, repeat on steps from paragraphs 3.1.1 – 3.1.3, when finished click "Add / Change".
3. In order to delete an existing meter, choose it from the list, and click on **"Delete Meter" button. Careful – this can't be undone!!!**

## 4.2 Creating\updating an account (client) in the software:

In order to create a billing report, an account (the bill client) must be created in the software. These definitions will contain all the general information which will appear on the bill and the link (formula) with the physical meters that are related to the account.

### 4.2.1 General definitions:

1. In the left toolbar under the "Settings" menu, click on the "Accounts" menu.
2. The Accounts screen will appear.

Figure 8: - Accounts

3. **Billing address** – Name, Street, City, Phone. E.Mail, Account number all this general information will appear on the billing report.
4. **Unit number** – each account must receive a unique number for Identification in the software. Every account number must start with the Letter V, for example V1678.
5. **Name/Notes** – name of the account.
6. **Formula** – the formula is the link between the account and the physical Meters the in system.
  - a. **Example 1:** If the account combined out of 1 meter which name is M07, the formula would be M07.
  - b. **Example 2:** If the account combined out of sum of 2 meters M07 and M08, the formula would be M07+M08.
  - c. **Example 3:** If the account combined out of phase number 3 of meter M07, the formula would be L3M07.
7. **Project, Location, Building** - general information about the account, will appear in billing reports and assists in searching for the account in other program menus.

8. Price group – defines the price groups that are used for charging for the consumed energy.

#### 4.2.2 Saving \ updating the definitions:

1. Once all the definitions of the account are ready, click on the "Add / Change" button, this will add the account to the system. (Please check Figure 3.6)
2. Clicking on "Show unit list" will allow to search for particular account in the system, or by clicking on the "Show units" will present the entire list of accounts which exist in the system.
3. In order to change the definitions in already existing account, choose it from the list, and repeat steps from paragraphs 3.2.1 – 3.2.2, when finished click "Add / Change".
4. In order to delete an existing account, choose it from the list, and click on "Delete Account" button. **Carefull – this can't be undone!!!**

### 4.3 Price lists:

The price list menu allows creating a several price groups, according to which the account will be charged. These definitions will contain the type of the Charge (according to TOU or Flat), the cost for consumed KWH, commissions, VAT and the dates these prices are come in force.

#### 4.3.1 Creating\updating price groups in the system

1. In the left toolbar click on the "Price List" menu.
2. The Price list screen will appear.

The screenshot shows a web form titled "Price list" with "View" and "Edit" buttons. Below the title is a "Price setting" section with several input fields:

- Price group:** An empty text input field.
- Price name/Identifier:** An empty text input field.
- Valid from date:** A date input field containing "31-08-2011".
- Rate 3 (Cent/kWh):** An empty text input field.
- Rate 2 (Cent/kWh):** An empty text input field.
- Rate 1 (Cent/kWh):** An empty text input field.
- Flat (Cent/kWh):** An empty text input field.
- Fixed per day (Euro/Day):** An empty text input field.
- Vat %:** An empty text input field.
- Comision %:** An empty text input field.
- Price type:** A dropdown menu with "elec. tou" selected.

At the bottom of the form, there is a link "Show price groups list" and a button "Add / Change".

Figure 9: Price list

3. **Price group** – the name of the price gorup. Each account can be charged according to different prices as defined in the price group which is attached to the account.
4. **Price name / Identifier** – the name of a subgroup in the price group. Each Price group can store a list of price subgroups (for example differnet seasons - Summer, Winter etc..).
5. **Valid from date** – the date on which the prices are become in force. If the report was created for a period of time in which a price change accrued, the report will be split in parts with different prices according to relevant dates.
6. **Rate 1, Rate 2, Rate 3 (cent/kwh)** – the cost of single KWH per Rate 1,2,3. (Used only when TOU metering is requiered). Please make sure that the ELNet meter is activated according to your local TOU defenitions. If you are using only 2 rates, then fill in the prices for Rates 1 and 2 only. (Rate 1 is always the lowest).
7. **Flat** – the cost of single KWH in case the TOU metering is not required (Refers to accumulated energy only).
8. **Fixed per day** – fixed cost per day, with no reference to the consumed energy.
9. **VAT %** - the VAT % charges of your local market, will be added to the bill.
10. **Comision %** - comision charges, will be added to the bill.
11. **Price type** – choose the price type being used (TOU, Flat or other).

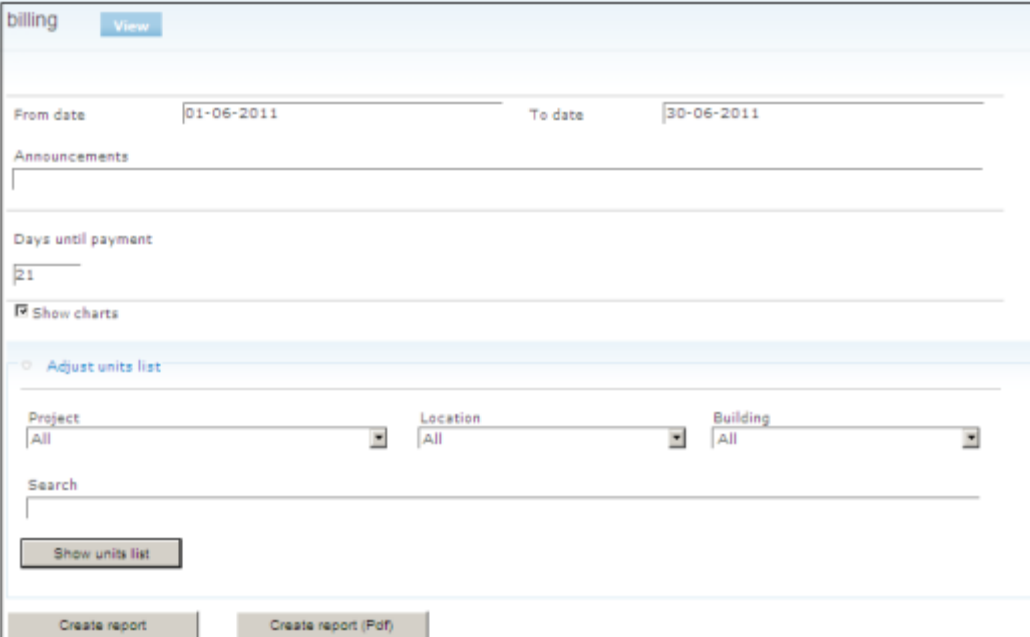
#### 4.3.2 Saving \ updating the defenitoinis:

1. Once all the defenitions of price groups are ready, click on the "Add / Change" button, this will add the price group to the system. (Please check Figure 3.6)
2. Clicking on "Show unit list" will allow to search for particular price group in the system or by clicking on the "Show units" will present the entire list of price groups which exist in the system.
3. In order to change the defenitions in already existing price group, choose it from the list, and repeat the steps from paragraphs 3.2.1 – 3.2.2, when finished click "Add / Change".

## 5 Reports

### 5.1 Billing report

According to desirable dates and account details, the user can easily create a billing report, which will present the consumed energy and its costs.



The screenshot shows a web interface for generating a billing report. At the top, there is a 'billing' header with a 'View' button. Below this, there are two date input fields: 'From date' with the value '01-06-2011' and 'To date' with the value '30-06-2011'. There are three text input fields: 'Announcements', 'Days until payment' (with the value '21'), and 'Show charts' (with a checked checkbox). Below these is a section titled 'Adjust units list' containing three dropdown menus: 'Project' (set to 'All'), 'Location' (set to 'All'), and 'Building' (set to 'All'). There is also a 'Search' input field and a 'Show units list' button. At the bottom, there are two buttons: 'Create report' and 'Create report (Pdf)'.

Figure 10: Billing

1. Choosing dates – in order to choose the time period to create a bill, simply click on the dates at "From date" and "To date" and define the desirable dates

Figure 11: Choosing dates

2. **Announcements** – a special announcement that will appear on the report. (Not mandatory).
3. **Days untill payment** – amount of days that are remain until payment will appear in the report. (Not mandatory).
4. **Show charts** – if marked will attach historical charts on the bill.
5. Clicking on Adjust units list – allows to search from the sub menus (project, location, building) the account.

Figure 12: Choosing client to bill

6. **Create report** – will create a billing report on screen.
7. **Create report (PDF)** – will create the billing report in PDF format file.
8. Clicking on create report without choosing a particular account will create all the reports for all the accounts that exist in the system.
9. In order to replace the logo that appears on the top of the billing report, please

access the “Images” folder:

Click on the Windows Start menu buttons, Programs, Control Applications, CA-ELNetWeb and click on the User Images folder.

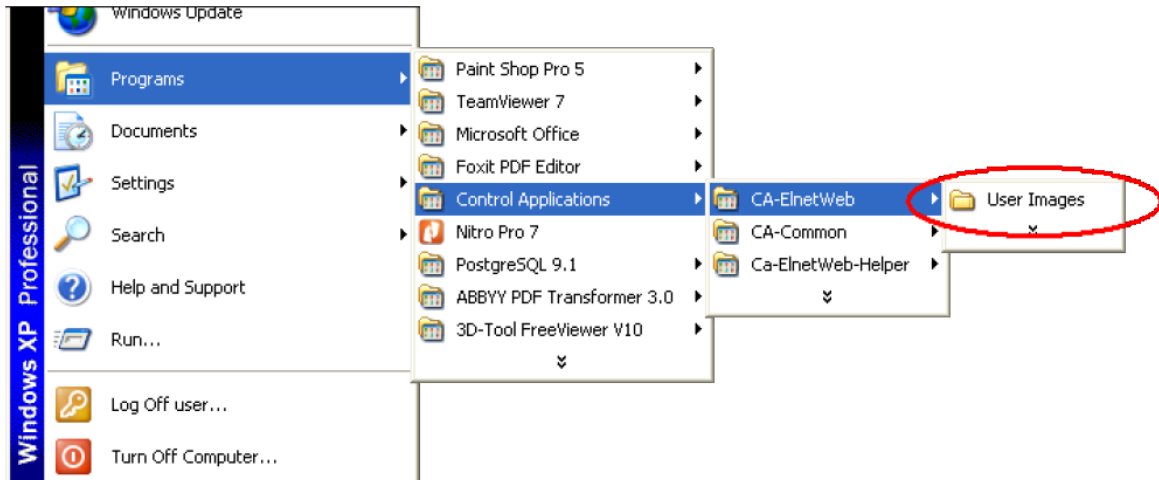


Figure 13: User Images

10. **Replace the** "logo\_top\_en.png" with your own logo file. The file name and type must remain the same. Recommended size of the picture is approximately 60x90.

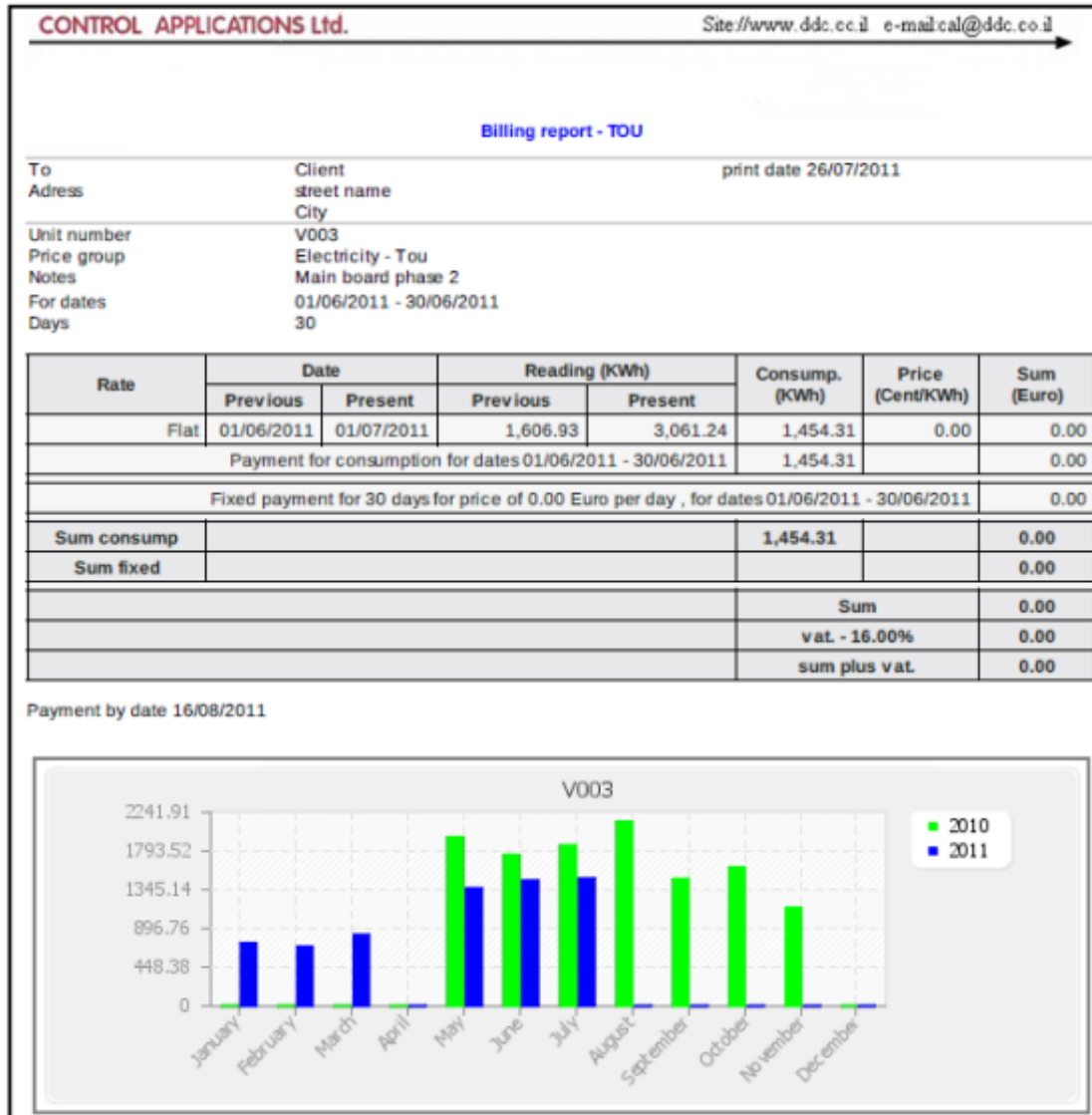


Figure 14: Billing report

## 5.2 Consumption report

According to desirable dates and meter details, the user can easily create a consumption report, which will present in graphic and numeric way, the consumed energy.

1. **Choosing dates** - in order to choose the time period to create a report, simply click on the dates at "From date" and "To date" and define the desirable dates (please check Figure 4.2).
2. **Type** - the consumption report can be created in 3 types:
  - **Daily** - a detailed report of consumed energy per day and per rate, including a graphic chart of the consumption.



- **Monthly** – a report from date to date including consumption chart which of the consumption based on rates.
  - **Yearly** – a report for entire year including consumption chart which allows comparing between the consumed energy per months during the last year.
3. **Split to phases** - marking the Split to phases mode will create the same Consumption reports but per phase instead of per meter.
  4. Clicking on **Adjust units** list – allows to search from the sub menus (project, location, building) the desirable meter.

Figure 15: Creating Consumption reports

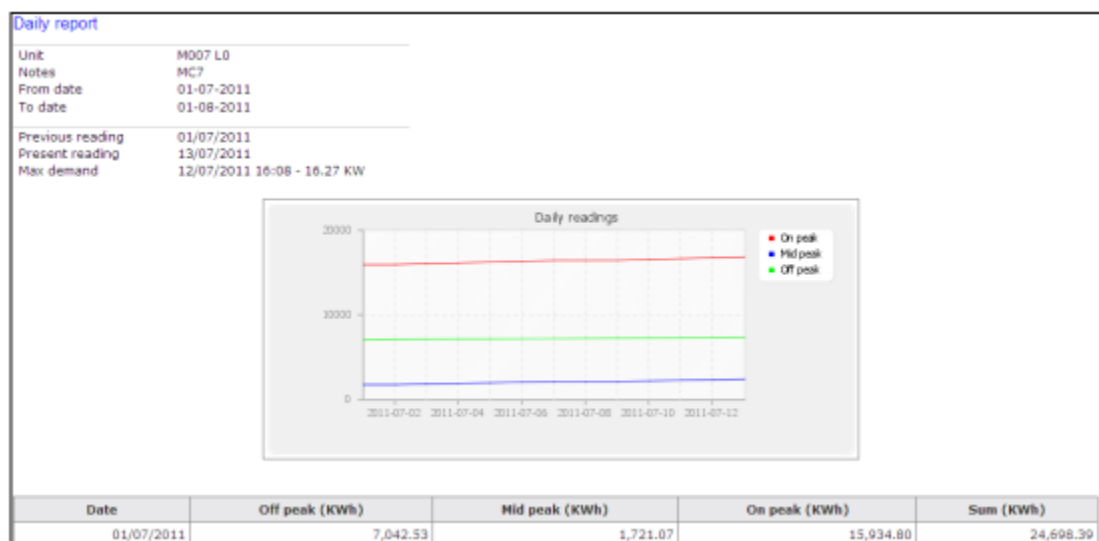


Figure 16: Daily Consumption report

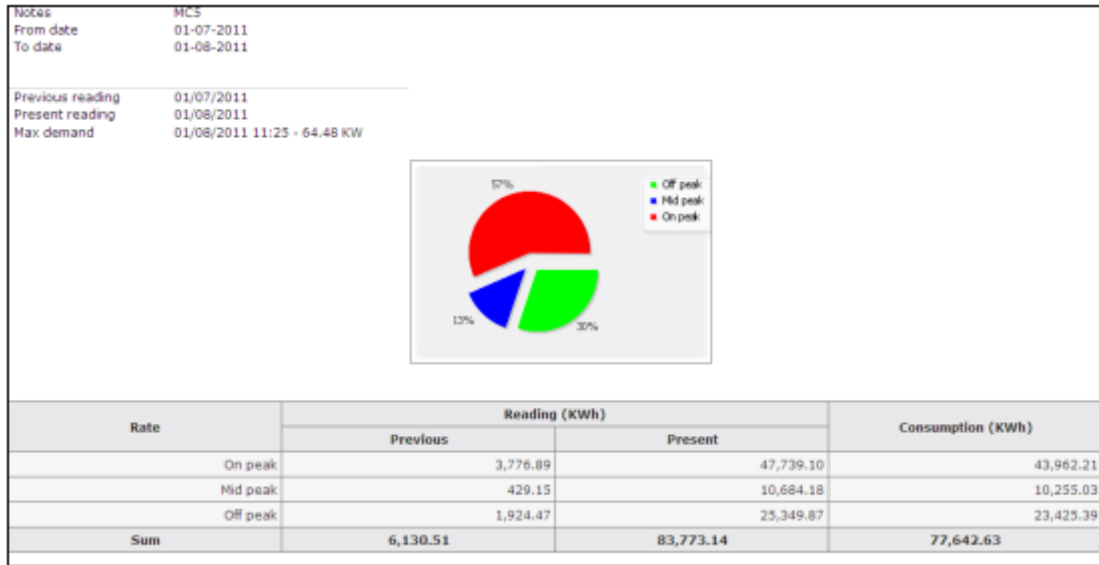


Figure 17: Monthly Consumption report

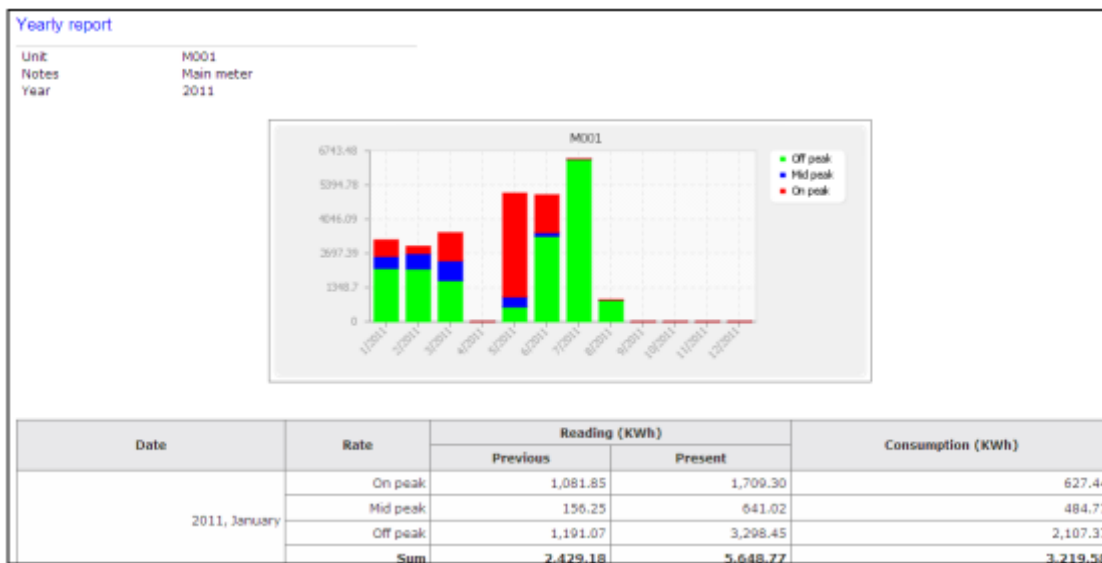


Figure 18: Yearly Consumption report

## 6 Trends

The ELNetWeb program allows monitoring the meters and storing the monitored data into graphical Trends. In order to activate a Trend for a meter it must be allowed in the meter definitions screen (please check paragraph 3.1, 7. Unit Type).

## 6.1 Standard Trends

According to desirable dates, unit and sum parameters, the user can easily plot graphical trends.

The screenshot shows a web-based interface for configuring trends. At the top, there are 'View' and 'Edit' buttons. Below that, there are two date input fields: 'From date' set to '25-12-2011 00:00' and 'To date' set to '25-12-2011 23:59'. A 'Trend' dropdown menu is set to 'M011 Elnet PQ Test'. The main area contains a grid of 27 checkboxes for parameters: P1 - V1 Volt (checked), P2 - V2 Volt, P3 - V3 Volt, P4 - I1 Amp, P5 - I2 Amp, P6 - I3 Amp, P7 - PF1, P8 - PF2, P9 - PF3, P10 - F1 Hz, P11 - F2 Hz, P12 - F3 Hz, P13 - E1 KWh, P14 - E2 KWh, P15 - E3 KWh, P16 - RE1 KVARh, P17 - RE2 KVARh, P18 - RE3 KVARh, P19 - P1 W, P20 - P2 W, P21 - P3 W, P22 - Q1 VAR, P23 - Q2 VAR, P24 - Q3 VAR, P25 - S1 VA, P26 - S2 VA, and P27 - S3 VA. Below the grid are three sections of radio buttons: 'Page layout' with options Table, Graph (selected), Graph and Table, Lines, and Bars; 'Group by' with options None (selected), Avg., 15m, Min., Max., Hour, day, Week, and Month; and 'Page width' with options Full (selected) and Fixed (for printing). At the bottom, there are two buttons: 'Create report' and 'Create report (csv)'.

Figure 19: Trends.

1. **Choosing dates** – in order to choose the time period to create a trend for, simply click on the dates at “Form date” and “To date” and define the desirable dates.
2. **Trend** – in order to choose which unit will be displayed, simply click on the trend and select the relevant unit.
3. Mark the parameters to be displayed (Ex. Voltage, Amp etc..).
4. **Page layout** - select the display mode “Table”, “Graph” or “Table and Graph” and select the type of the graph “Lines” or “Bars”.
5. **Group By** – select the time period (None, 15min etc.) of the samples to be displayed.
6. **Page width** – if you want to print the trend report from your PC choose “Fixed” else “Full”.
7. **Create report** – clicking on “create report”, will create a trend report on screen.
8. **Create report (CSV)** – will create the bill report in CSV (Excel) format file.

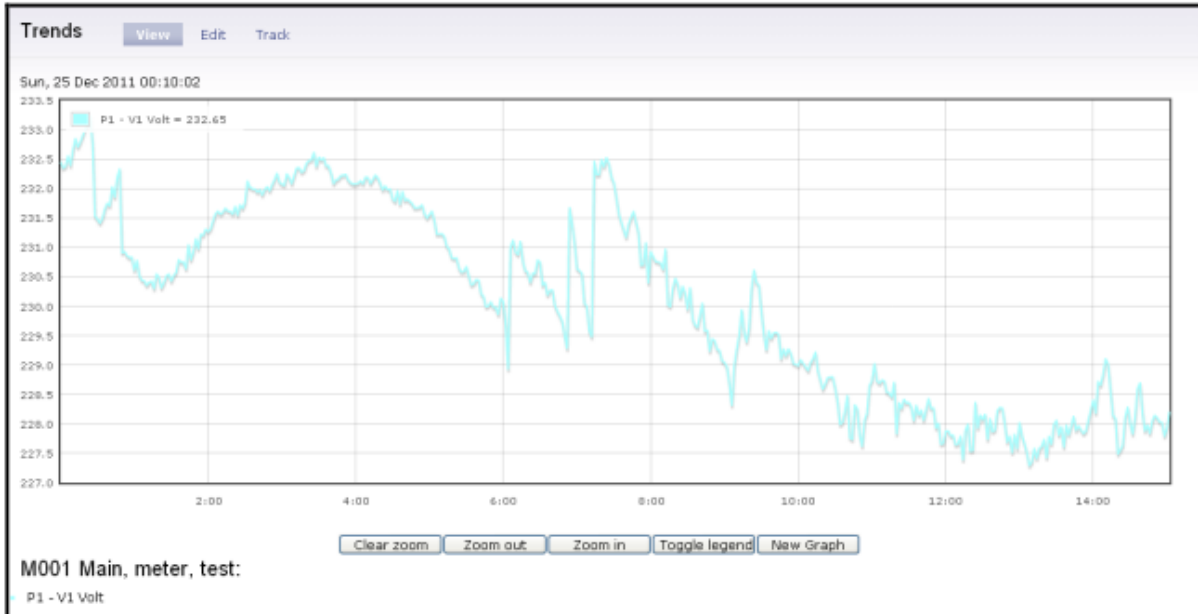


Figure 20: Trends report.

## 7 Power Quality

The ELNetWeb program allows power quality events monitoring and storing. In order to activate a Power Quality monitoring and storing mode for a meter it must be allowed in the meter definitions screen (please check paragraph 3.1, 8. Hardware Type).

### 7.1 EN50160 Report

According to desirable dates and the unit, the user can easily create summary results, which will present the results of the EN50160 standard report.

The figure shows a web form titled "EN 50160 Report" with "View" and "Edit" buttons. The form contains three input fields: "From date:" with the value "19-12-2011", "To date:" with the value "26-12-2011", and "Unit:" with a dropdown menu showing "Elnet PQ Test (M011)". A "Create report" button is located at the bottom of the form.

Figure 21: EN50160 Report.

1. **Choosing dates** – in order to select the time period to create a report for, simply click on the dates at "From date" and "To date" and define the desirable dates.

The screenshot shows the 'EN 50160 Report' interface. It includes a 'View' button and an 'Edit' button. Below these, there are input fields for 'From date:' (containing '19-12-2011'), 'To date:', and 'Unit:'. A 'Create report' button is located below the 'Unit:' field. A calendar for December 2011 is displayed, with the date '26' highlighted in yellow.

Figure 22: Choosing dates.

2. **Unit** –choose the unit that you want to display.

Summary Results			
Hide	Test	Status	Page
<input type="checkbox"/>	Frequency Test > +1%, < -1%	Passed	3
<input type="checkbox"/>	Frequency Test > +4%, < -6%	Passed	4
<input type="checkbox"/>	Line 1 Voltage variations test > +10%, < -10%	Passed	5
<input type="checkbox"/>	Line 2 Voltage variations test > +10%, < -10%	Passed	6
<input type="checkbox"/>	Line 3 Voltage variations test > +10%, < -10%	Passed	7
<input type="checkbox"/>	Line 1 voltage variations test < +10%, > -15%	Failed	8
<input type="checkbox"/>	Line 2 voltage variations test < +10%, > -15%	Failed	9
<input type="checkbox"/>	Line 3 voltage variations test < +10%, > -15%	Failed	10
<input type="checkbox"/>	Line 1 Rapid Voltage Change > +5%, < +5%	No Events	11
<input type="checkbox"/>	Line 2 Rapid Voltage Change > +5%, < +5%	No Events	12
<input type="checkbox"/>	Line 3 Rapid Voltage Change > +5%, < +5%	No Events	13
<input type="checkbox"/>	Line 1 flicker test	Passed	14
<input type="checkbox"/>	Line 2 flicker test	Passed	15

Figure 23: EN50160 report Summary Results page.

## 7.2 Event summary and Wave forms.

The system displays the record of the events received from the meter based on EN50160 standard.

The screenshot shows a web interface titled "Wave forms" with sub-headers "View", "Edit", and "Track". Below this is a "Report options" section with several filters: "From date" (01-12-2011), "To date" (26-12-2011), "Unit id" (empty), "Area" (1Km), "Phase" (All), "Event type" (All), "Event severity" (All), "Aggregation" (empty), "Time" (100ms), and "Area" (1Km). A "Create report" button is located below these filters.

Below the filters, there are time unit options: "milisec | second | minute | hour | week | month" and a timestamp: "Sun Dec 25 2011 07:12:49 GMT+0200 (Jerusalem Standard Time)". A timeline bar shows seconds from 39s to 0s.

The main part of the interface is a table with the following data:

Unit id	Time	Event type	Event severity	Phase	Duration	Value	
power quality A [M0010, 15037425]	2011-12-25 07:12:49:222	Voltage Transient	concern	L1	0.000250	276.979210	Wave form
power quality A [M0010, 15037425]	2011-12-21 06:30:33:370	Voltage Transient	concern	L1	0.000250	382.561512	Wave form
power quality A [M0010, 15037425]	2011-12-21 06:13:54:253	Voltage Transient	concern	L1	0.000125	360.558959	Wave form
power quality A [M0010, 15037425]	2011-12-19 14:23:44:326	Custom EI	concern	L1	8.000000	230.000000	Wave form
power quality A [M0010, 15037425]	2011-12-19 09:45:23:198	Custom EI	concern	L1	8.000000	230.000000	Wave form
power quality B [M0011, 14351237]	2011-12-18 06:38:28:698	Voltage Transient	concern	L3	0.000125	383.939514	Wave form

Figure 24: Events summary and Wave forms list

In order to view the wave form record of the event click on the wave form (in the most right column of the Events summary and Wave forms list).

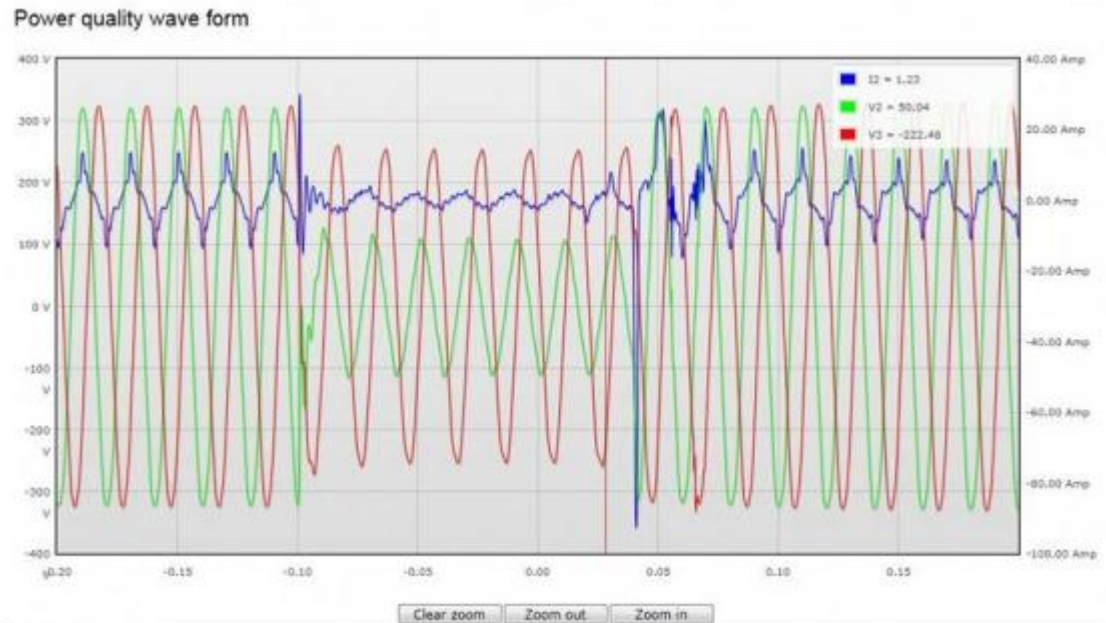


Figure 25: Wave forms records

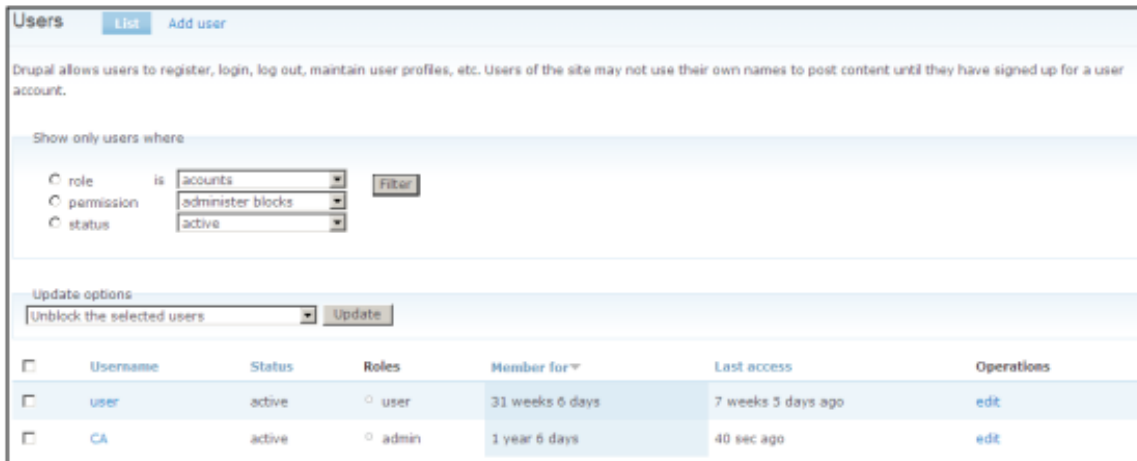
### Report options (Optional)

1. **Choosing dates** – in order to select the time period to display the report for, simply click on the dates at "From date" and "To date" and define the desirable dates.
2. **Unit ID** – display only the events of the unit that the ID belongs to.
3. **Phase** - display only the events of the specific phase.
4. **Event type** – display only the events of the specific event type.
5. **Aggregation** – in order to group by same event based on area zone or time, simply click on the time and define the time interval (will marked by blue color at the right side of the unit id) or click on the area and define the radius length (will be marked by green color at the left side of the unit id) .

## 8 User Settings

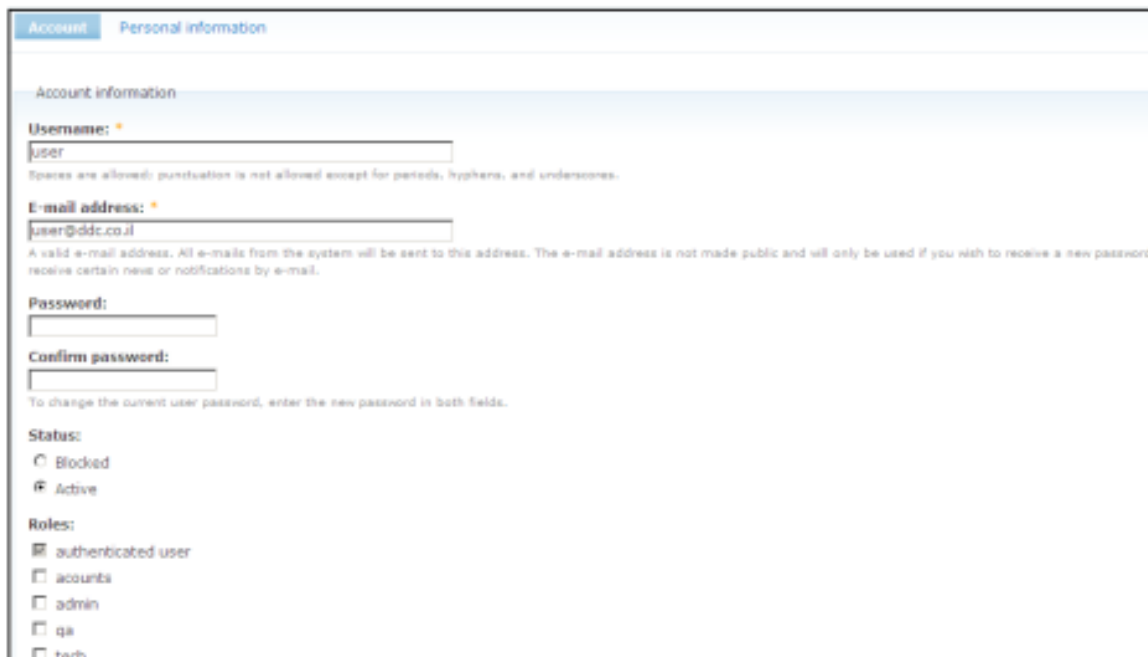
In order to allow a particular user to access only his account data the following definitions must be done:

1. In the General Settings menu click on the User Settings.
2. The User management screen will appear.



**Figure 26: User management.**

3. Click on "Edit" in the relevant user line.
4. The User details screen will appear.



**Figure 27: User details.**

5. Click on the "Personal Information" on the top part of the screen.
6. The "Personal Information" screen will appear.



The screenshot shows a web interface for editing a user. At the top, there is a header with the word 'user' and two buttons: 'View' and 'Edit'. Below this, there are two tabs: 'Account' and 'Personal information', with the latter being selected. The main content area is titled 'Personal information' and contains five input fields, each with a label to its left: 'location1:', 'location2:', 'location3:', 'graph:', and 'alarm:'. Each label is followed by a single-line text input box.

Figure 28: Personal Information.

7. In the personal information screen several fields are open for editing:
  - Location 1: Is the Project name which appears in particular account.
  - Location 2: Is the Location name which appears in particular account.
  - Location 3: Is the Building name which appears in particular account.
8. In order to link between particular user to its account one of the above mentioned fields must be filled in with the same data as appears in the desired account's fields. For example if the account's building name is "Building 1", than in Location 3 of the user the "Building 1" name should appear as well.
9. **Important** – other users that don't have such particular account link locations in their Personal Information page, **will be able to access all the accounts.**
10. When finished click "Save".