Energy Data Innovation Network

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Abstract	The EDI-Net online forum and league table are two key pieces of software developed to allow users to visualise and analyse their energy data and then comment and discuss with other users. These key elements of the software aim to provide relevant tools to communicate energy performance in a user-friendly manner (league tables) and to facilitate communication between stakeholders (online forum).

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Versioning and Contribution History

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v.04	06/04/2017	Darsheet Chauhan	Final version for QA
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1 Introduction

The EDI-Net league table and online forum are two components of the EDI-Net system developed to allow users to visualise and analyse energy data, and comment on and discuss energy data with other users.

These components enable users in public authorities to communicate energy performance in a user-friendly manner (league tables) and to facilitate communication between stakeholders (online forum). These are two of the four functional requirements defined in D2.2.

This deliverable, as a 'website, patents, etc.' type, describes the features and functionalities of these two elements at the time of writing (it is important to keep in mind that the complete software is being developed feature-by-feature and it will keep evolving over the following months.), giving brief details of their use to date.

Following this introduction section, section 2 describes the league table, section 3 describes the online forum, and section 4 provides concluding remarks for this deliverable.

2 League table operational

The league tables allow energy managers to communicate energy performance of the buildings in a user-friendly manner (F-R2). The information in complex graphs for tracking energy performance are converted into easy to understand smiley faces ranging from green and smiling faces when the metered consumption is lower than the expected level according to the baseline, to red and angry faces when the metered consumption is higher than the expected level according to the baseline. Subsequently, buildings are ranked according to their energy performance in a league table. The buildings at the top of the league table are those that are performing best against their baseline, those at the bottom of the table are performing worst against their baseline. This functionality of the software was made available on March 2017.

League tables are created by system administrators at each public. The process of creating a league table involves the following steps:

- Synchronising data sets
- Merging datasets with virtual meters
- Configuring virtual meters with location and baseline period
- Creating buildings
- Adding virtual meters to buildings
- Creating league tables
- Adding buildings to league tables
- Publishing league tables

Rather than having all buildings for an organisation in a long list, league tables can be created and configured for (smaller) coherent subsets of buildings, for example, libraries, schools, etc. The league tables not only allow users to track performance of their specific building, but also to see whether the building maintains its position, drops or moves up the table.

The following subsections provide a brief description of the league table in each PPA.

2.1 Leicester

In Leicester, four league tables have been created by Leicester City Council and five league tables have been created by De Montfort University. The four league tables set up by Leicester City Council comprise: Libraries, Leisure Centres, Multi Story Car Parks and Community Centres. These four league tables cover 42 buildings and 125 utility meters. The five league tables set up by De Montfort University comprise: Green Impact 2017,

Halls of Residence, Solar PV Buildings, All buildings, Faculty of Technology with more than 30 buildings, and approximately 80 utility meters.

Figure 1 shows a league table created for all libraries operated by Leicester City Council, FIGURE 2 shows a league table for Green Impact 2017 operated by De Montfort University.

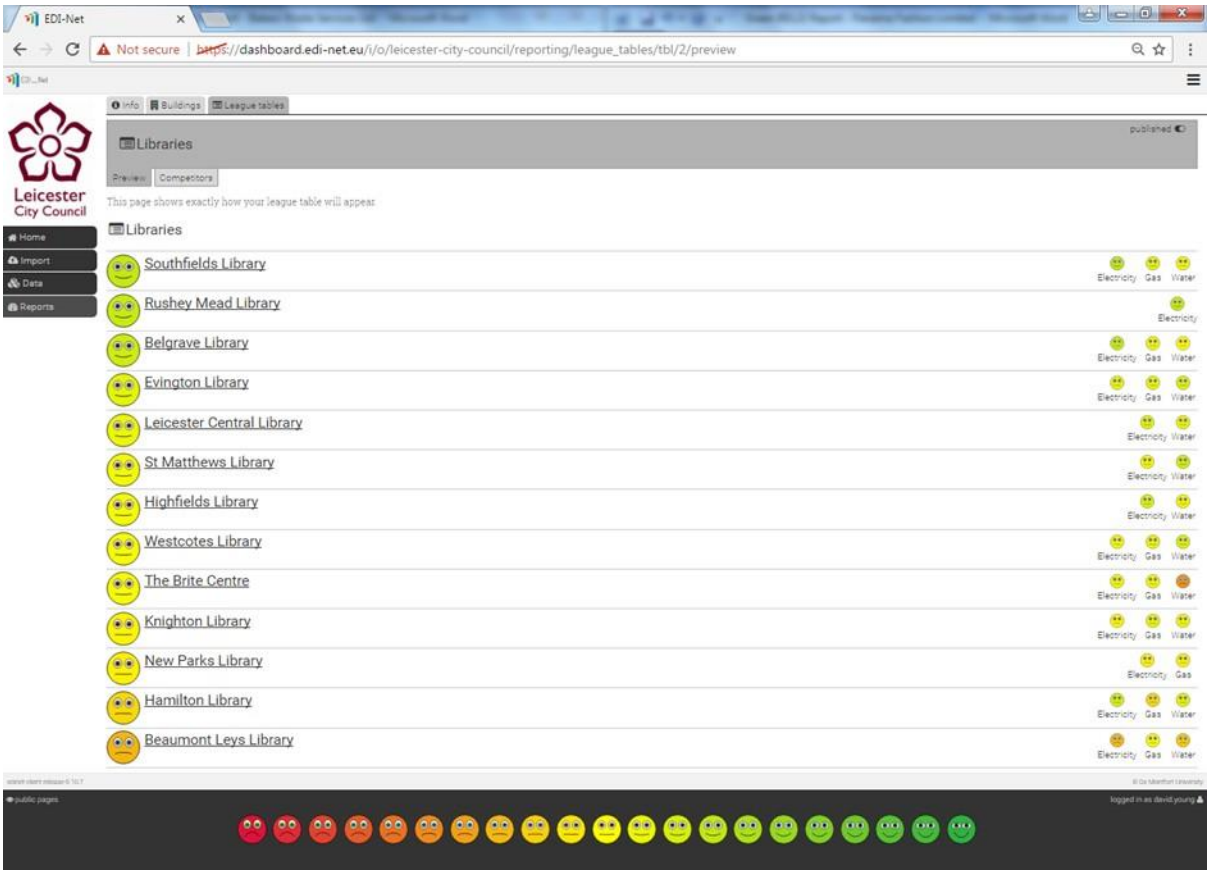

Figure 1: League table of libraries in Leicester City Council

DMU LEAGUE TABLE HERE

2.2 Nuremberg

Nuremberg has created six league tables including: schools, kindergartens, museums, leisure centres, and office buildings (Figure 2). Currently, only the league tables for schools and kindergartens (Figure 3) are available to the public users. The league tables for other building types are in the process of being set up as metered data become available.

Figure 2: City of Nuremberg's league tables

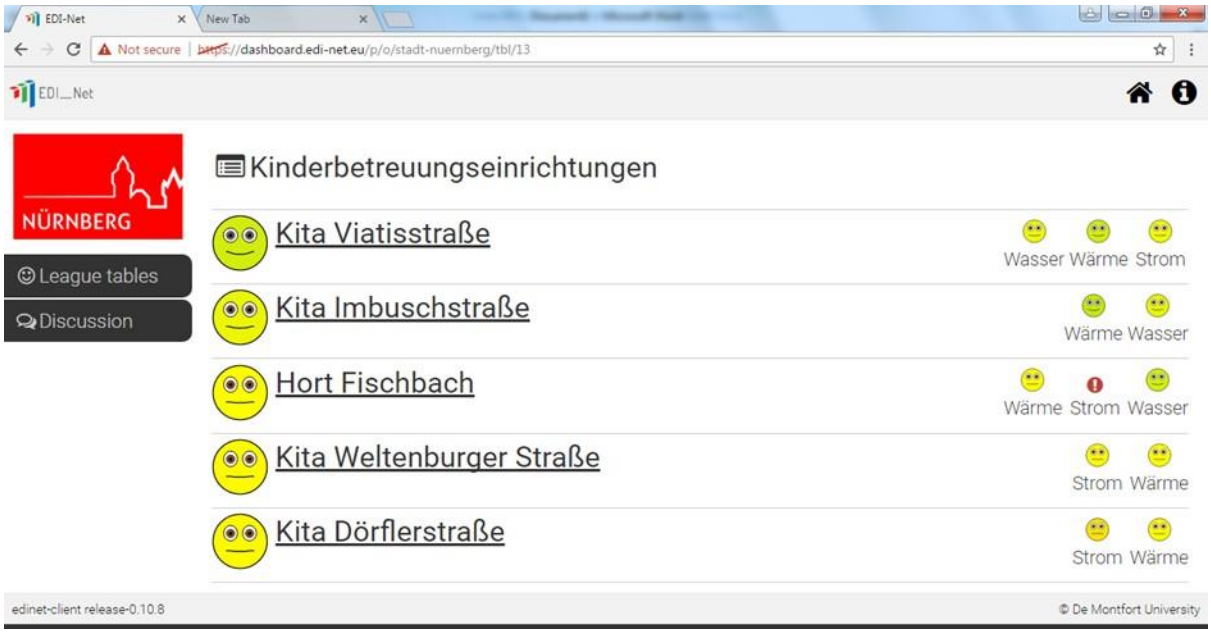

Figure 3: League table of kindergartens in the city of Nuremberg

2.3 Catalonia

The Generalitat of Catalonia has created one league table of their participating buildings, so far. Figure 4 shows this league table.

Figure 4: League table created by the Gen. de Catalunya

3 EDI-Net On-line forum

Communication between users is via an online forum. The EDI-Net forum was made available to the three public authorities in September 2016. The forum can be found at: https://discourse.edi-net.eu/ (Figure 5).

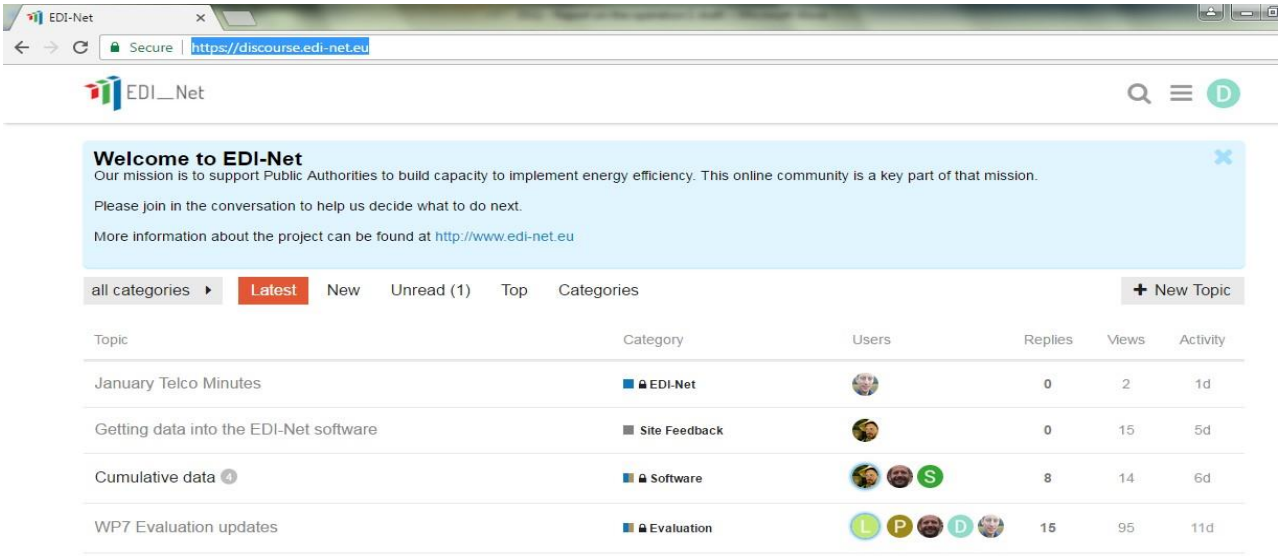

Figure 5: Home page of the EDI-Net forum

On the dashboard, each PPA has its own group which is managed by users with administrative rights. Currently, there are five main 'group' categories that contain their own topics and sub-categories: Catalunya, DMU, EDI-Net members, Leicester City Council and Nuremburg (Figure 6).

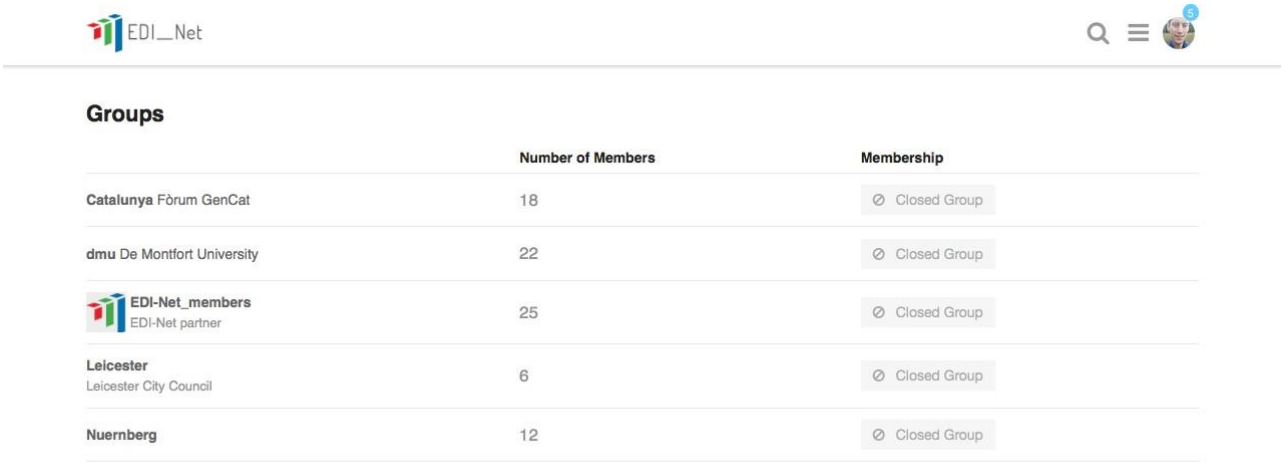

Figure 6: EDI-Net forum groups

In addition to the five group areas, there are nine categories: EDI-Net, Software, Generalitat de Catalunya, Stadt Nürnberg, Leicester City Council, DMU, Staff, Site Feedback and Uncategorised (Figure 7).

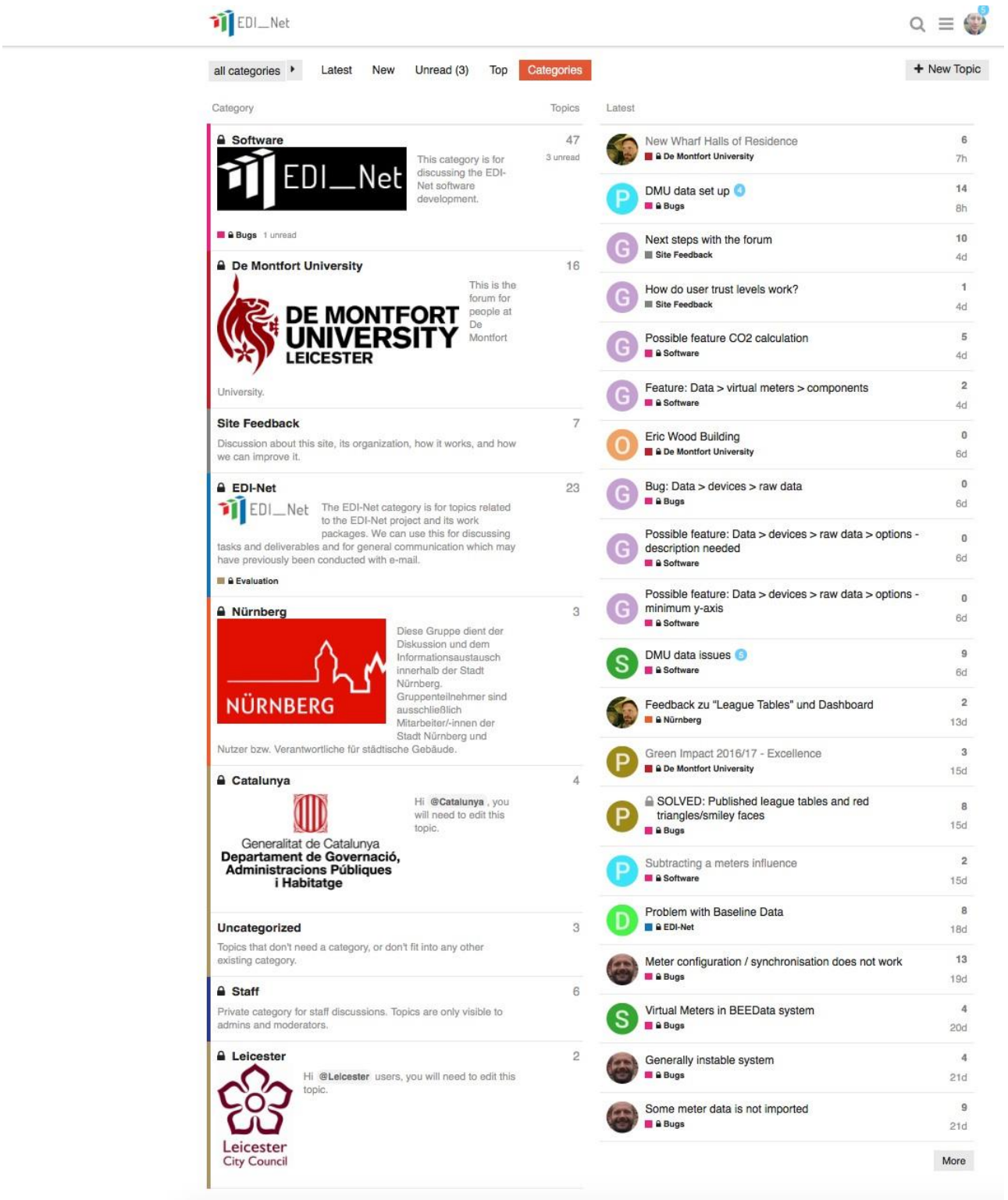

Figure 7: EDI-Net Forum Categories

Users can view the public part of the forum without having to log on, but they can only see the 'Site Feedback' category. To be able to fully participate in the forum, users need to be 'created' (assigned login credentials) by the administrative users at each PPA, and then login.

There are 60 registered users on the forum from the PPAs and project partners. Users have varied roles in their organisations – some are EDI-Net project partners, energy managers, maintenance staff, sustainability staff, building managers, students/researchers, and so on. Table 1 shows the number of registered users by group. It is important to note that some project partners are also members of other groups.

Table 1: Registered users on the EDI-Net forum by group (April 2017)

Groups	Number of members
EDI-Net project partners	25
De Montfort University	22
Generalitat de Catalunya	18
Stadt Nürnberg	12
Leicester City Council	6

Since developing the forum, almost 100 topic boards have been established. Topics allow for conversation threads to be grouped, making it easier to access information and navigate the forum. The topics are varied; some are informative statements, whilst others are general open discussions. There are over 400 replies to these posts, and almost 3,000 views. Table 2 illustrates the most popular topics ranked by views and replies by April 2017.

Table 2: Most popular topics in the EDI-Net online forum (April 2017)

Topic	Category	Views	Replies
Translation of information	Site feedback	194	9
Next steps with the forum	Site feedback	183	8
Potential topics for the forum (brainstorm)	Site feedback	180	10
Christmas – Think before you waste	Uncategorised	111	1
How should moderation work?	Site feedback	107	1
Configuring devices via link	Software	56	25
Software: Problemes i suggeriments	Catalunya	53	10
Nuremberg data transfer	Software	53	15
Propostes de millora	Catalunya	33	7

Topic	Category	Views	Replies
Green Impact 2016/17 - Excellence	De Montfort University	33	3
PENRT Hanf-Dämmplatten - Wie hoch ist er?	Nürnberg	24	5

The forum can send email alerts notifying users about recent posts at a frequency determined by the user. Users can also use the function keys on the system to view posts sorted according to their needs.

3.1 Creating topics/threads and replying comments

Figure 8 shows a user creating a new topic in the EDI-Net forum. This is done by following these steps:

1. Selecting the create topic button "+ New Topic" at the top of the screen. Subsequently, an editing sub-screen will appear at the bottom.
2. Provide the title for the new topic.
3. Select the category where the topic will be posted. Some users may only have access to certain categories.
4. Type your comment in the left-hand side screen. Graphs, images, photos and tables can also be inserted. The screen in the right-hand side shows how the comment will actually look like when the comment is posted in the forum.
5. Post your comment by clicking the button "+ Create topic" at the bottom of the screen.

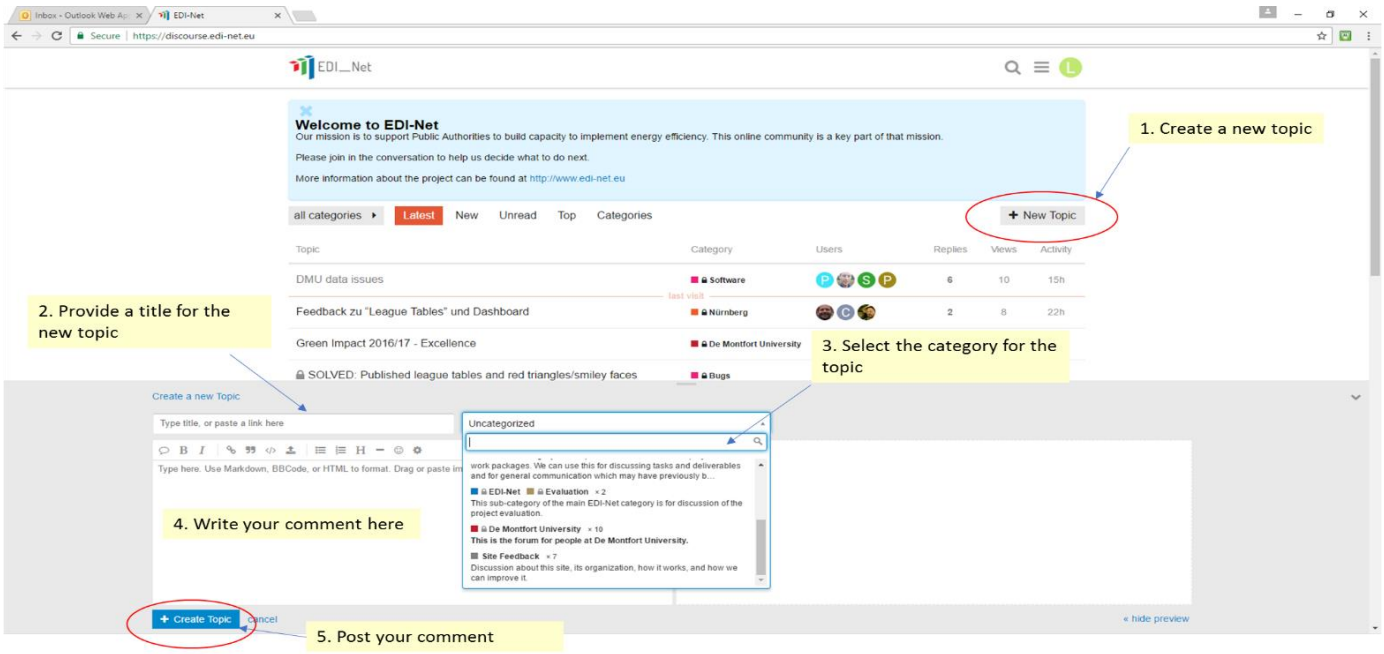

Figure 8: Creating a new topic or thread

To reply to the topics, users can choose to reply to a particular comment, or to the entire conversation (Figure 9). Subsequently, the editing sub-screen will appear.

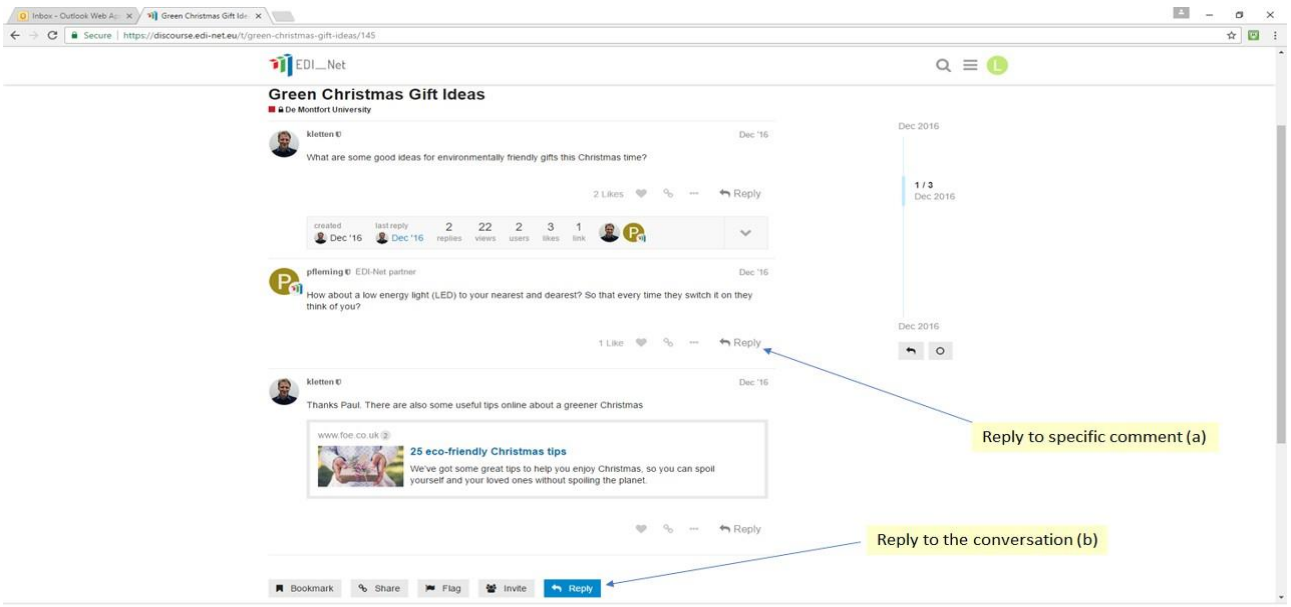

Figure 9: Replying to a comment

3.2 Trust levels

Similar to other online discussion fora, the EDI-Net online forum also utilises users trust levels. These levels aim to help new users to learn and understand how to use the online forum without harming themselves, other users or the forum in their initial participation.; while these levels also grant rights to experienced users that can help to moderate the newly formed and existing communities. These trust levels are:[i]

- Level 0- New: Users who have just created an account and joined the forum.
- Level 1-Basic: Users who have stayed in the forum for a while and read posts. Usually these users can upload images and attachments, edit and flag posts.
- Level 2-Member: Users who use and participate in the forum regularly. These users can invite other users to participate in the forum.
- Level 3-Regular: Active users of the forum with reliable contribution. These users can rename and recategorize topics and conduct moderation of the forum (hiding or removing post that can harm other users or the forum).
- Level 4-Leader: Regular active users that have complete knowledge about what is posted in the forum, and can set a positive example for the community. These users can edit all posts, pin/unpin and close topics, and split and merge topics among other rights.

When a new user joins the forum, they are restricted at trust level zero and must engage with the forum to earn the privilege to invite new users (level 2). All administrative users in the PPAs and project partners have a trust level 2 or above. Only EDI-Net users with trust levels of 3 or above can become moderators.

Moderation is an important aspect of all discussion fora to keep them organised and to enforce the rules of the forum. The organisation of the forum will keep it tidy in order that there are not an excessive number of topics that might be related or to split topics to enable strands of conversation to continue independently. There are no specific rules for the EDI-Net discussion forum, but as the number of users grow the likelihood of breaking rules may increase. In extreme cases, moderators will be able to 'flag' posts. If the 'flagged posts' keep increasing and users are reluctant to edit or delete them, the moderator can delete the posts and block or eject users with a behaviour that can harm the community.

4 Conclusion

The EDI-Net league table and online forum are two components of the EDI-Net system developed to allow users to visualise and analyse energy data, and comment on and discuss energy data with other users. These are two of the four functional requirements defined in D2.2.

This deliverable has shown that both of these components are implemented in the EDI-Net system, and are being used by both immediate project partners, and other users at each of the pilot authorities. As the project progresses, there will be many more league tables developed and many more users on the forum, both created from within the existing project partners, and also by those recruited in years two and three of the project.

[i] For further information, see https://meta.discourse.org/t/what-do-user-trust-levels-do/4924/2