



The De-risking Energy Efficiency Platform (DEEP)

User guide, version 31 05 21



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0.0 EEFIG and the De-risking Efficiency Platform (DEEP)



0.0 EEFIG and the De-risking Efficiency Platform (DEEP)



EEFIG

The Energy Efficiency Financial Institutions Group (EEFIG) was established in 2013 by The European Commission Directorate-General for Energy (DG Energy) and United Nations Environment Programme Finance Initiative (UNEP FI). The purpose of EEFIG is to operate as a platform for public and private financial institutions, industry representatives, sector experts and policy makers to identify barriers to the long-term financing for energy efficiency and propose solutions.

EEFIG comprises over 300 institutions today and has provided a significant contribution in accelerating private finance to energy efficiency.

DEEP background

The De-risking Energy Efficiency Platform (DEEP) is an open-source database for energy efficiency investments performance monitoring and benchmarking that provides detailed analysis and evidence on the performance of energy efficiency investments to support the assessment of the related benefits and financial risks.

The main objective of the DEEP Platform is to better understand the real risks and benefits of energy efficiency investments based on market evidence and track record.

The De-risking Energy Efficiency Platform (DEEP) can be accessed online at <http://deep.eefig.eu>



0.0 EEFIG and the De-risking Efficiency Platform (DEEP)



Our vision

Our vision is to Provide detailed analysis and evidence on the performance of energy efficiency investments to support the assessment of the benefits and financial risks.

This is done by disclosing thousands of data points showing the real technical and financial data from implemented energy efficiency projects across the economy. The DEEP platform is a source of operational risk management information, which will help project developers, financiers, and investors better assess the risks and benefits of energy efficiency investments across Europe.

Data source and confidentiality

DEEP provides anonymized historical data structured along major project characteristics (geography, energy efficiency measures, verification status, industry / type of building, multiple benefits, etc.).

The process of anonymization is carried out in primarily two steps. Firstly, the data provider uploads individual data records with selected information. Secondly, the database aggregates projects, so users cannot identify the projects from the graphical and tabular presentation of data within the platform.

Today, DEEP contains 17.000+ data points from 30 providers, where new data improved functionality is added regularly.



0.0 EEFIG and the De-risking Efficiency Platform (DEEP)



Why should you use it?

The DEEP platform provides insight of financial performance, that clearly document the existence of investment opportunities within energy efficiency in both buildings and industry. This includes indicators as Payback Time and Avoidance Costs for projects.

In addition, DEEP provides financial institutions the opportunity of uploading projects or portfolios in order to benchmark them against user-selected sub-sets of the existing projects in DEEP. Hence, DEEP is a strong tool for users to evaluate existing or forthcoming energy efficient investments.



Become a user

- ✓ Access anonymized historical data structured along major project characteristics
- ✓ Enhance your understanding of and access to energy efficiency finance related business opportunities
- ✓ Streamline underwriting procedures and decrease due diligence and transaction costs
- ✓ Improve risk assessment through high quality and credible data framework
- ✓ Upload your own individual projects or portfolios as private projects and benchmark them against user-selected sub-sets of the projects in DEEP



Become a data provider

- ✓ Contribute to the de-risking of energy efficiency financing and through this to decarbonization of the EU and global economy
- ✓ Gain acknowledgement and visibility as data contributor
- ✓ Benchmark your project performance versus others, connect your data to investors and influence the industry best practice
- ✓ EEFIG DEEP is financed by the European Commission DG Energy and the data you share will be kept confidential, not shared with third parties and only shown through aggregated analysis.
- ✓ Enter data through web interface, excel template or API.

Why should you provide data?

By becoming a data provider, you contribute to the de-risking of energy efficiency financing in buildings and industry. Energy efficient buildings are not only the cheapest fuel for the EU economy, but also generates non-energy benefits like reduced air pollution, improved indoor comfort and reduced respiratory diseases.

By being a data provider, you basically contribute to the decarbonization of the EU economy, as you help DEEP provide detailed analysis and evidence on the performance of energy efficiency investments.

It is possible to enter data directly into the web interface, but an excel based input sheet allows easy data entry for multiple projects. An API for easy data upload and access to aggregated DEEP analysis is under development. The data you share will be kept confidential. Your data will not be shared with third parties and only shown through aggregated analysis on the DEEP platform.



1.0 Introduction to DEEP 2.0



1.0 Introduction to DEEP 2.0



Structure of DEEP 2.0

DEEP 2.0 presents a new structure and visual identity to the platform. As a new feature, users are now able to access the platform and view selected charts, without the need to register as a user. As a non-registered user, you can access the following services:

- 1. Key Figures (KPI's):** Provides a quick overview of the buildings and industry projects in the DEEP.
- 2. Data Overview:** Provides a more comprehensive (but still aggregated) overview of the energy efficiency projects in the DEEP.
- 3. View Charts:** Allows the user to view and filter a number of predefined charts for buildings and industry energy efficiency projects.

For further access to the additional services of DEEP, the visitor must register as a user. This will give you access to the following:

- 4. Add and Manage Projects:** Data providers can upload and manage data on their energy efficiency projects.
- 5. Analysis Toolbox:** Allows users to create charts in a dynamic and highly customizable manner.
- 6. Benchmark your Projects:** Allows users to benchmark their own projects and portfolios of projects against a selected group of reference projects from the DEEP database.



1.0 Introduction to DEEP 2.0



What is new?

Besides a new structure and visual identity, DEEP 2.0 also provides a significantly improved benchmarking tool and new data fields. The new data fields are added in order to align with new EU taxonomy and for building integrated RE's. For more specification see image to the right.

The new and improved benchmarking tool now provides three new and more advanced risk measures. The new measures include; Skewness, Kurtosis and Value at Risk. These new indicators are presented below the benchmark results on the DEEP platform.

For an illustrative example see image to the right. The benchmarking table is elaborated in the section Reading the charts.

Fields aligning with new EU taxonomy				
(206)	(207)	(208)	(209)	(210)
Type of activity: Construction of new buildings; Renovation of existing buildings; Individual renovation measures; or Acquisition of buildings	The annual net primary energy demand during the operational phase of the building life-cycle, i.e. "Phase B6" according to CEN T350, calculated ex-ante according to the national methodologies for asset design assessment as defined in EN 52000, expressed as kWh/m2 per year	The annual net carbon-equivalent emission rate (Global Warming Potential – GWP100) arising from energy consumption during the operational phase of the building life-cycle, i.e. "Phase B6" according to CEN/TC350, calculated ex-ante for the building "as designed", and expressed as kgCO2eq/m2 per year	GHG emissions embodied into building materials during production, transportation and construction (modules A1-A5) and end of life (modules C1- C4 and D) according to CEN/TC350, expressed as kgCO2eq/m2	Calculation methodology for the measurement of floor area (m2) with clear definition of what is within boundary (disclosed/not disclosed)

Fields for buildings integrated RE	
(18a)	(71a)
RES Investments Type	Energy produced from RES, kWh/y , total

Benchmark results

	Projects	Percentile 90th	Percentile 75th	Median	Percentile 25th	Percentile 10th	Average	Standard Deviation	Kurtosis	Skewness	Value at Risk	Observations
1	Series 1	13,61	6,6	3,13	1,52	0,64	6,88	22,07	1277,17	29	N/A	6652
2	Series 2	20,35	9,16	4,06	1,84	0,93	9,23	18,24	42,1	5,83	N/A	803

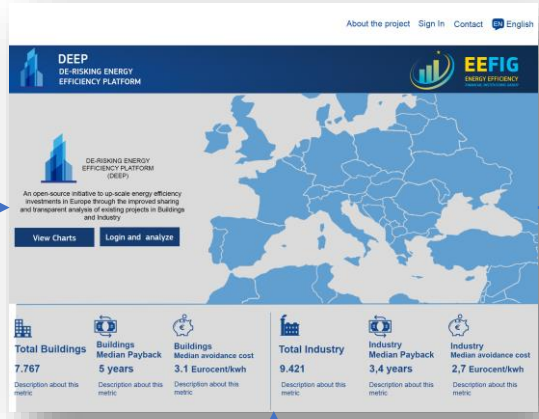


1.0 Introduction to DEEP 2.0

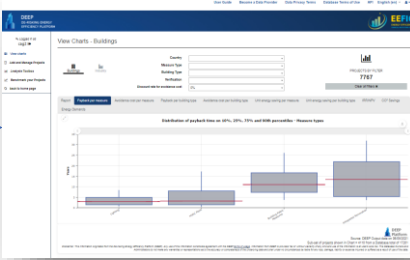
Figure 1: DEEP 2.0's new structure and visual identity



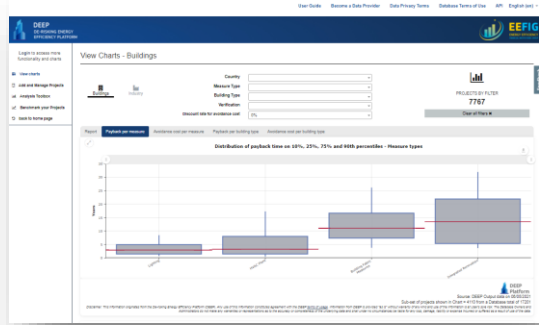
URL



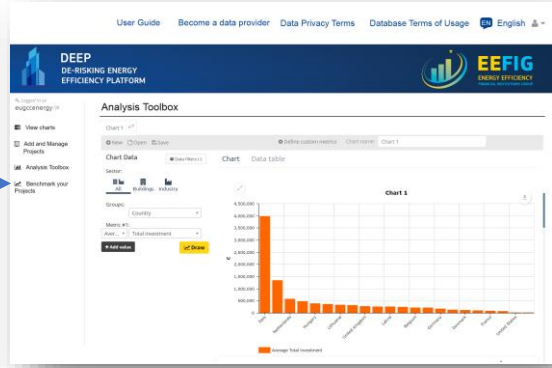
Login



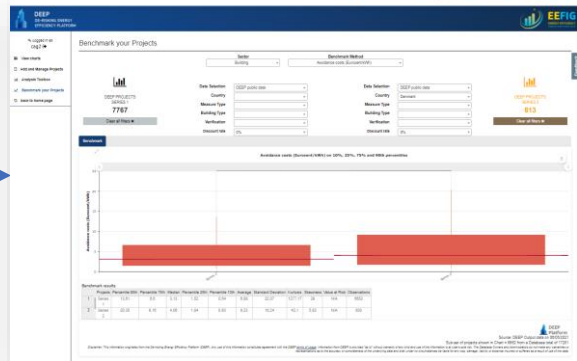
View Charts - All



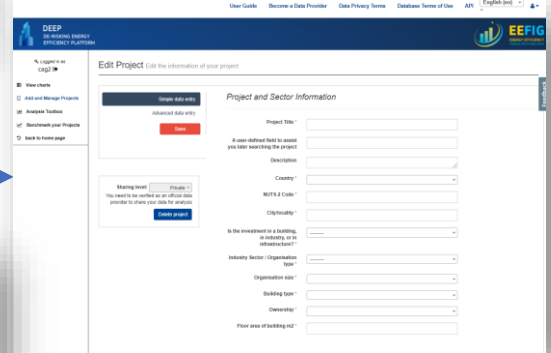
View Charts - Selected



Analysis Toolbox



Benchmark Projects



Add Projects



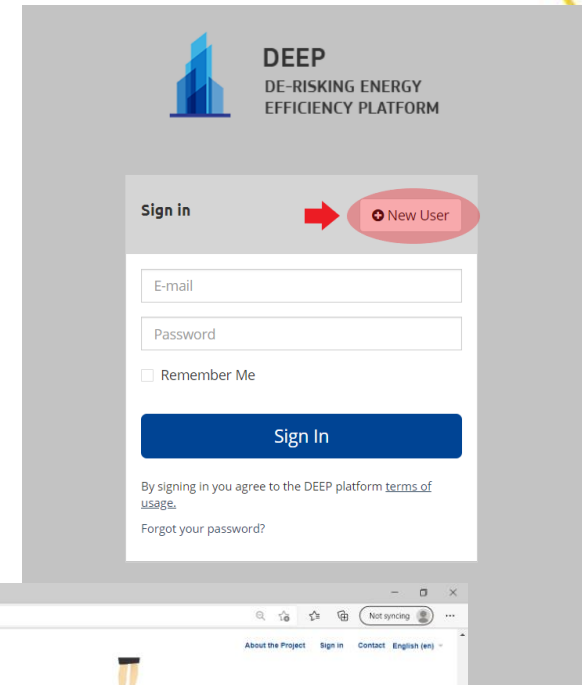
1.0 Introduction to DEEP 2.0

- Registering for additional functionality

Registering and signing in

In order to access full functionality of the DEEP 2.0 platform, visitors must register as a user. To do so, click the “sign me up” button on the front page (at the bottom of the page), or “sign in” and then “new user”. For the sign up the visitor should provide his / her e-mail, which will be used as a username, and a password.

A recaptcha mechanism has been used to avoid registration from spam sign-up bots. By signing up and in the user must agree to the DEEP platform terms of usage. Upon signing up a confirmation email is being sent to the user’s email address. The user must then confirm their registration by clicking the link in the E-mail.



1.0 Introduction to DEEP 2.0

- Registering for additional functionality



Profile settings

The profile settings page can be accessed by clicking “My Profile” at the user menu that is located on the top menu bar. In the profile settings page, the user is able to :

- › change / update profile information including, name, organization name and nature of the organization
- › change current login password
- › Select a sample size limit on charts (10,20 or 50). This sets a restriction regarding the minimum sample size. If the results of the query of a specific chart are below the selected threshold sample size, the platform will not generate the chart with an appropriate warning message

The image shows two screenshots of the DEEP DE-RISKING ENERGY EFFICIENCY PLATFORM interface. The top screenshot displays the 'View Charts - Buildings' page. It features a navigation menu on the left with options like 'View charts', 'Add and Manage Projects', 'Analysis Toolbox', 'Benchmark your Projects', and 'back to home page'. The main content area includes filters for 'Country', 'Measure Type', 'Building Type', 'Verification', and 'Discount rate for avoidance cost'. A 'Report' section offers various metrics like 'Payback per measure', 'Avoidance cost per measure', etc. The bottom right shows 'Date: 05/12/2021', 'Projects by filter: 7767', and 'Country: All'. The bottom screenshot shows the 'Edit Profile' page for a user 'aba@example.com'. It contains form fields for 'Your name', 'Your organization name', 'Nature of your organization', and a dropdown for 'Please select the sample size limit on charts' with 'Uncertain (n=10)' selected. A 'Save Profile' button is at the bottom.



2.0 The landing page



2.0 The landing page

The landing page of DEEP offer several services. In the top var the visitor can learn more about the DEEP project, sign in (and register as a user), see contact information or change the language settings.

Additionally, the landing page consists of a map section. The map has a mouse-over-effect, which presents information about the current number of projects, median payback and median avoidance cost for buildings and industry projects for each country visually in a map by hovering above each country. **The payback time** is defined as the average (median) payback time (years required for the saving to pay for the investment without any interest costs). The **avoidance cost** is defined as the average cost in Eurocent for each kWh energy saved over the lifetime of the measure. To see more countries, click the map and drag with your mouse.

On the right, you see an illustrative example of the mouse-over-effect of the map section. We see that Germany has provided a total of 2183 building projects to the DEEP platform, which have a median payback time of 3.8 years, and median avoidance cost of 2.6 Eurocent for each kWh energy saved over the lifetime of the measure. . The avoidance cost is defined as the average cost in Eurocent for each kWh energy saved over the lifetime of the measure.



2.0 The landing page

KPI's

Below the map, you see the KPI's of the total number of projects in DEEP. This feature provides a quick overview of the buildings and industry projects in the DEEP platform. More specifically this service presents information about the current number of projects, median payback and median avoidance cost for buildings and industry projects.

Below we see that DEEP currently consists of 9421 industry projects (right), which have a Median Payback Time of 3.4 years and Median Avoidance Costs of 2.7 Eurocent/kWh. The same information is also provided for building projects, which can be seen on the left side of the picture below.



<p>Buildings</p> <p>7767</p> <p>Projects</p>	<p>Median Payback time - Buildings</p> <p>5,0</p> <p>Years</p>	<p>Median Avoidance cost - Buildings</p> <p>3,1</p> <p>Eurocent/kWh</p>	<p>Industry</p> <p>9421</p> <p>Projects</p>	<p>Median Payback time - Industry</p> <p>3,4</p> <p>Years</p>	<p>Median Avoidance cost - Industry</p> <p>2,7</p> <p>Eurocent/kWh</p>
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3.0 View Charts



3.0 view charts



The picture on the left illustrates the structure and features of the view charts services. This includes,

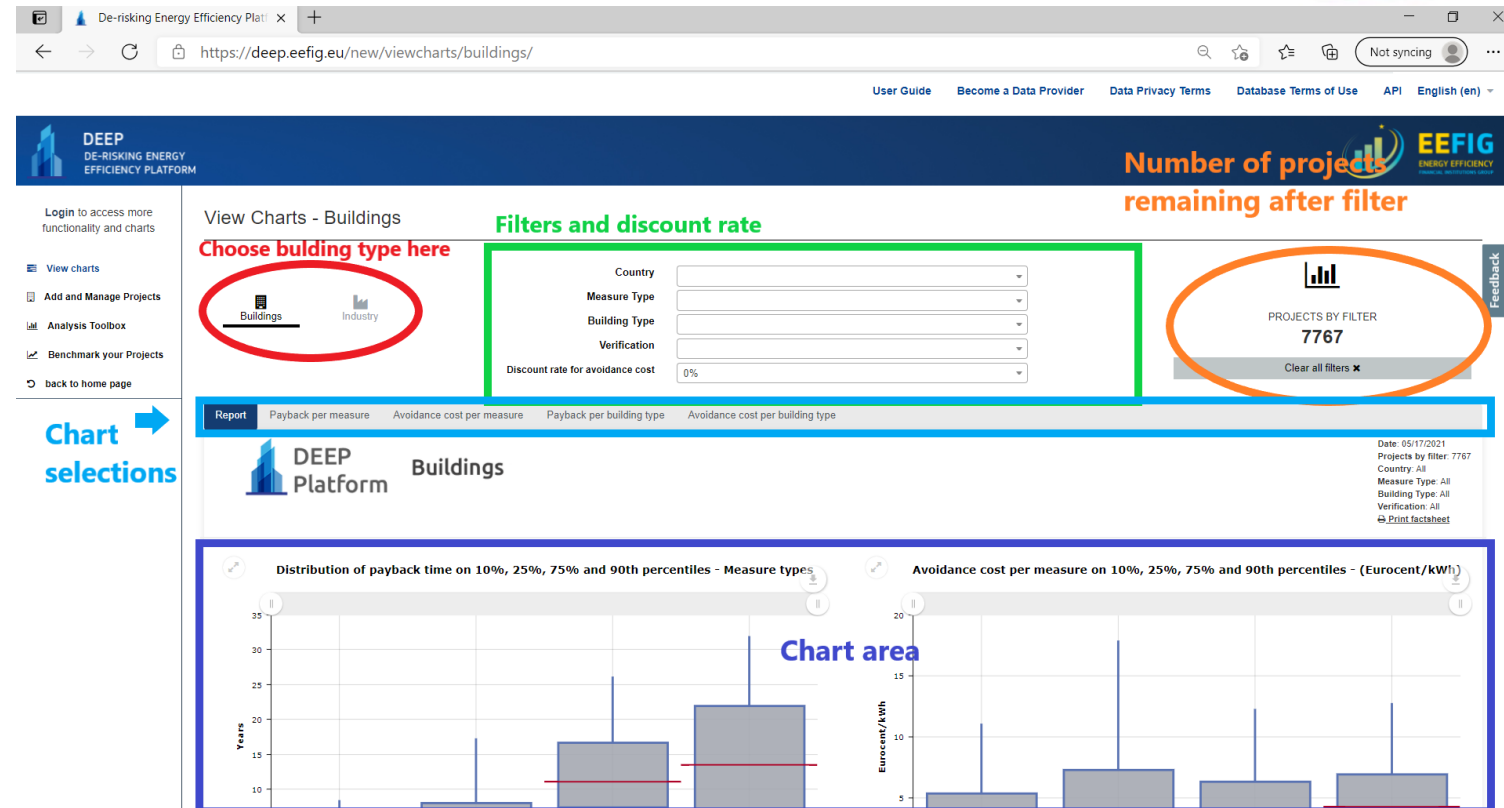
Chart selection: By clicking on the blue bar above the chart area the user can isolate the view of a specific chart included in the main report

Choose Building Type: This selector allows users to switch between Buildings and Industry energy efficiency projects in the platform

Filters and Discount rate: Through this panel the user can filter the projects that will be included in the bellow charts.

Number of projects after filter: This number represents the number of projects remaining for analysis after the filter. The number of projects actually contributing to each chart can be less if the projects remaining after filter do not contain the information required by each chart.

Chart area: Depending on the visitor's chart selection, the results will be presented here. The default is the chart selection report. A limited selections are available as unsigned visitor, for further access to alle chart selections sign in or register as user.



3.0 view charts



Through the view charts service the user can visualize and customize the following,

Buildings:

- › Energy saving potential for the projects included in the database (GWh/a) shown by average payback time (in years) and use of the building
- › Payback time in years (distributed on 10%, 25%, 75% and 90% percentiles) per energy efficiency measure type
- › Payback time in years (distributed on 10%, 25%, 75% and 90% percentiles) per building types
- › Avoidance cost in Eurocent/kWh (distributed on 10%, 25%, 75% and 90% percentiles) per energy efficiency measure type
- › Avoidance cost in Eurocent/kWh per building type (distributed on 10%, 25%, 75% and 90% percentiles) per building types
- › Unit energy saving in EUR/m²/year (distributed on 10%, 25%, 75% and 90% percentiles) per energy efficiency measure type
- › Unit energy saving in EUR/m²/year (distributed on 10%, 25%, 75% and 90% percentiles) per building types

Industry:

- › Energy saving potential for the projects included in the database (GWh/a) shown by average payback time (in years) and industrial energy efficiency measure type
- › Avoidance cost in Eurocent/kWh (distributed on 10%, 25%, 75% and 90% percentiles) per industrial energy efficiency measure type
- › Payback time in years (distributed on 10%, 25%, 75% and 90% percentiles) per industrial energy efficiency measure type
- › Payback time in years (distributed on 10%, 25%, 75% and 90% percentiles) per size of organization



3.0 view charts



You can enter the view charts section from the landing page. If you are already in the DEEP platform, you can choose “view charts” in the menu on the left.

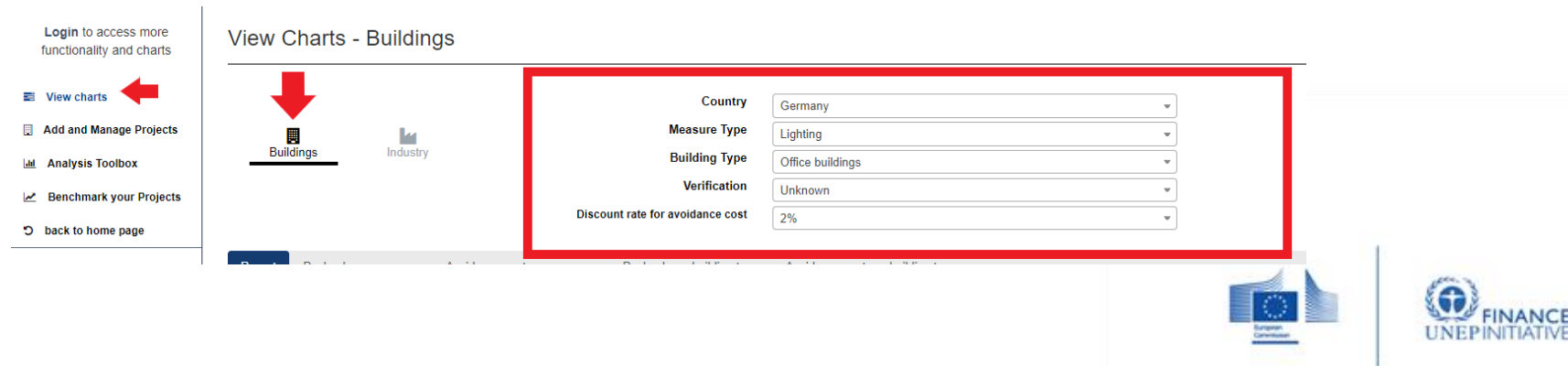
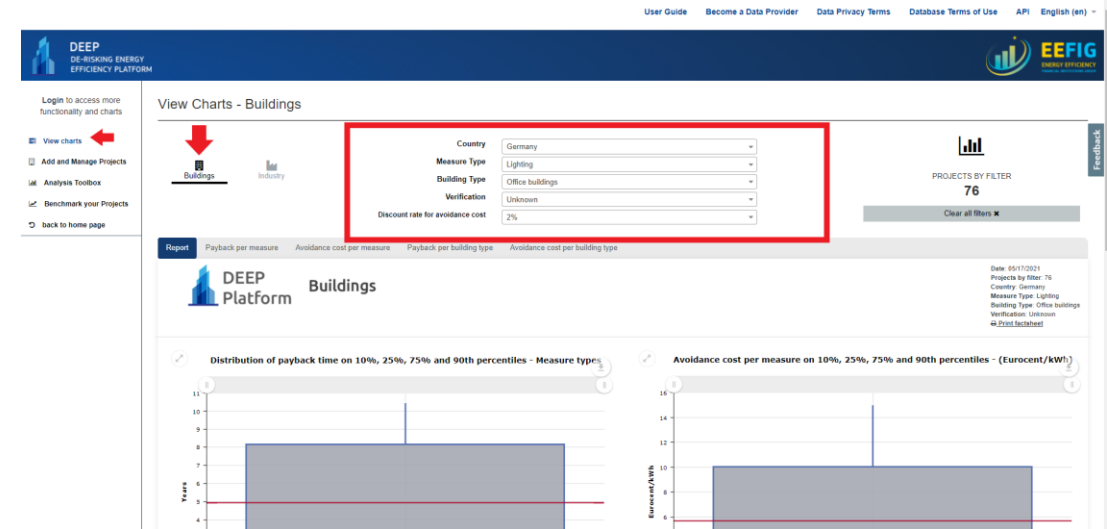
The view charts functionality allows the user to view and filter several predefined charts for Buildings / Industry energy efficiency projects. Through this panel the user can filter the projects that will be included in the bellow charts based on:

1. Country
2. Measure Type
3. Building Type
4. Verification method
5. Discount rate for avoidance costs (default is 0%)

You can view charts without registering to the platform. To access more of the DEEP services, visitors need to register.

In the example below building projects are chosen and the filters are set to as:

1. Country: Germany
2. Measure Type: Lightning
3. Building Type: Office buildings
4. Verification method: unknown
5. Discount rate for avoidance costs: 2%



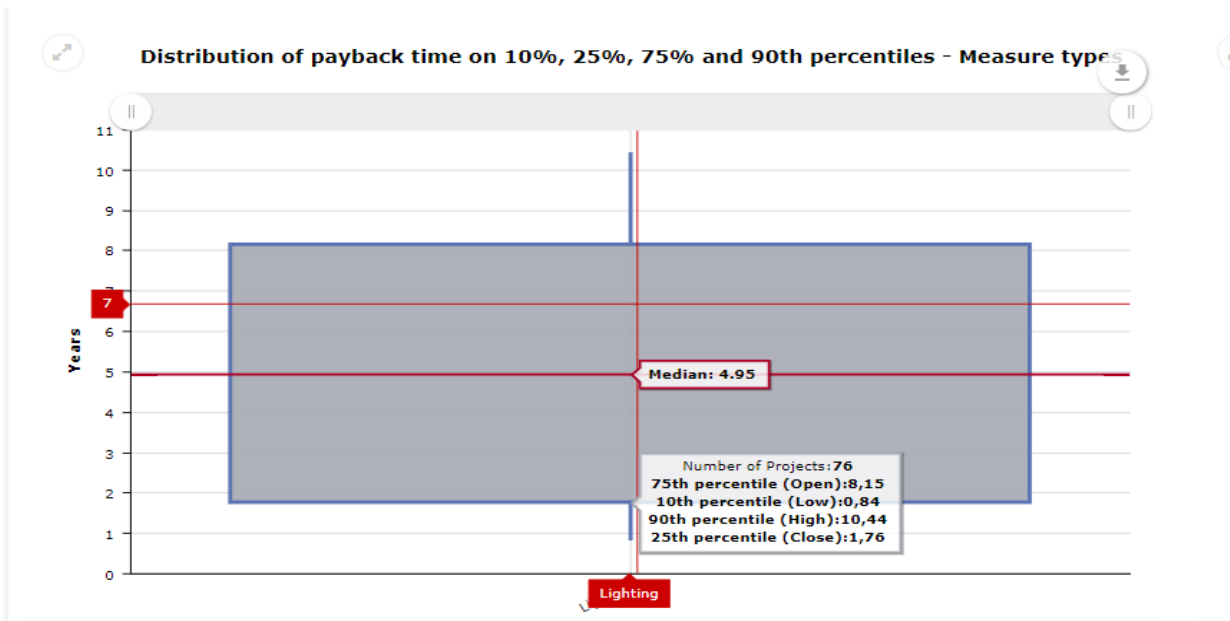
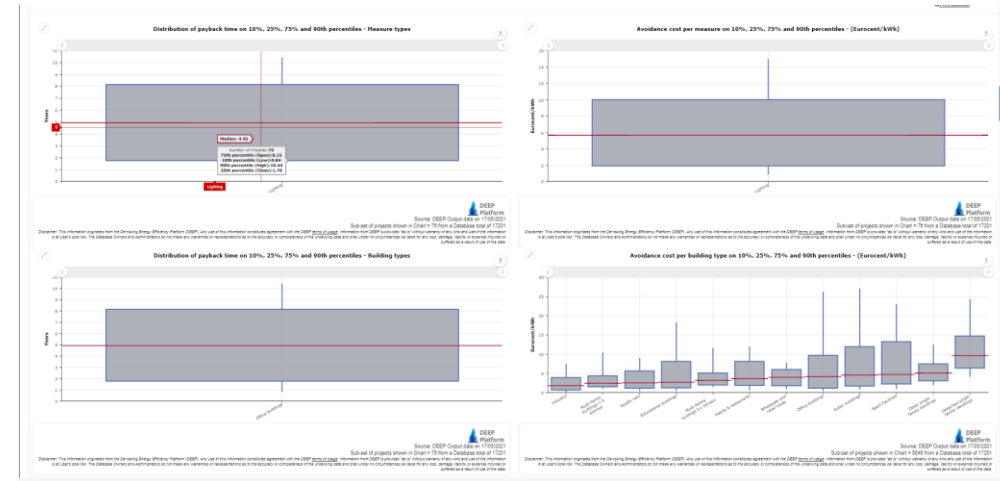
3.0 view charts

After choosing the settings for the filter and project type, the results will be reported in the chart area. In continuation of previous settings, we see that the results for German building projects for the measure type lightning of office buildings with a 2% discount rate we get the following results on the right.

The first figure in the upper right corner is presented to the right. We see that the figure illustrates the distribution of payback time on 10%, 25%, 75% and 90th percentiles – Measure types.

The figure has a mouse-over-effect where the percentiles as well as the median is given. We see, that for the filters added, German building projects for the measure type lightning of office buildings with a 2% discount rate has a median payback time of 4.95 years in total including in total 76 projects. Further we see, that that the over-mouse effect gives the payback time at the different percentiles.

This mouse over effect is also available at the remaining three figures of the report results.



3.0 view charts

Chart area functionality

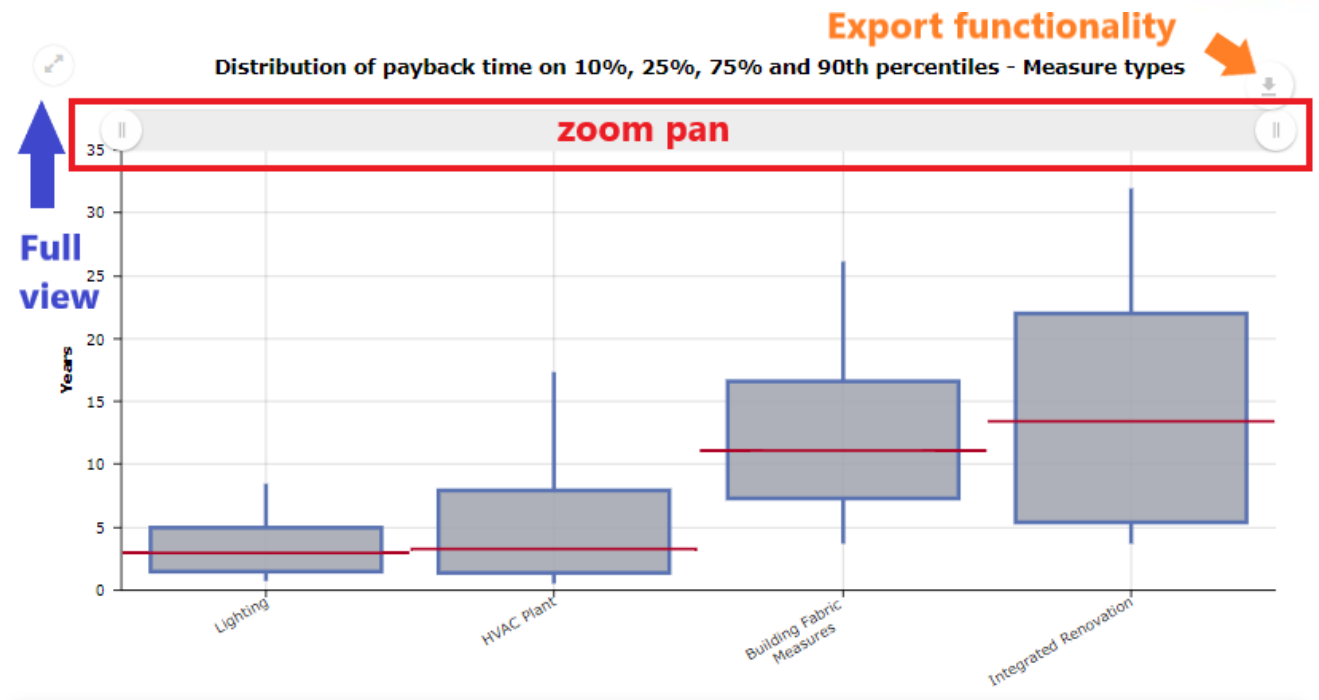
The view charts service offer different additional display functions:

Full View: By clicking the double arrow at the top left corner of any chart in the Deep Platform the user can maximize the chart into a full view.

Scroll / Zoom functionality: By dragging the bar on the top of each chart the user can zoom in / out and pan the chart.

Export Functionality: By clicking the downward arrow in the top right corner of any chart, the user is able to,

- › download the current chart as image or pdf
- › save the data of the chart in excel, csv or json
- › annotate the chart with custom graphics / text
- › print current chart



4.0 Add and manage projects

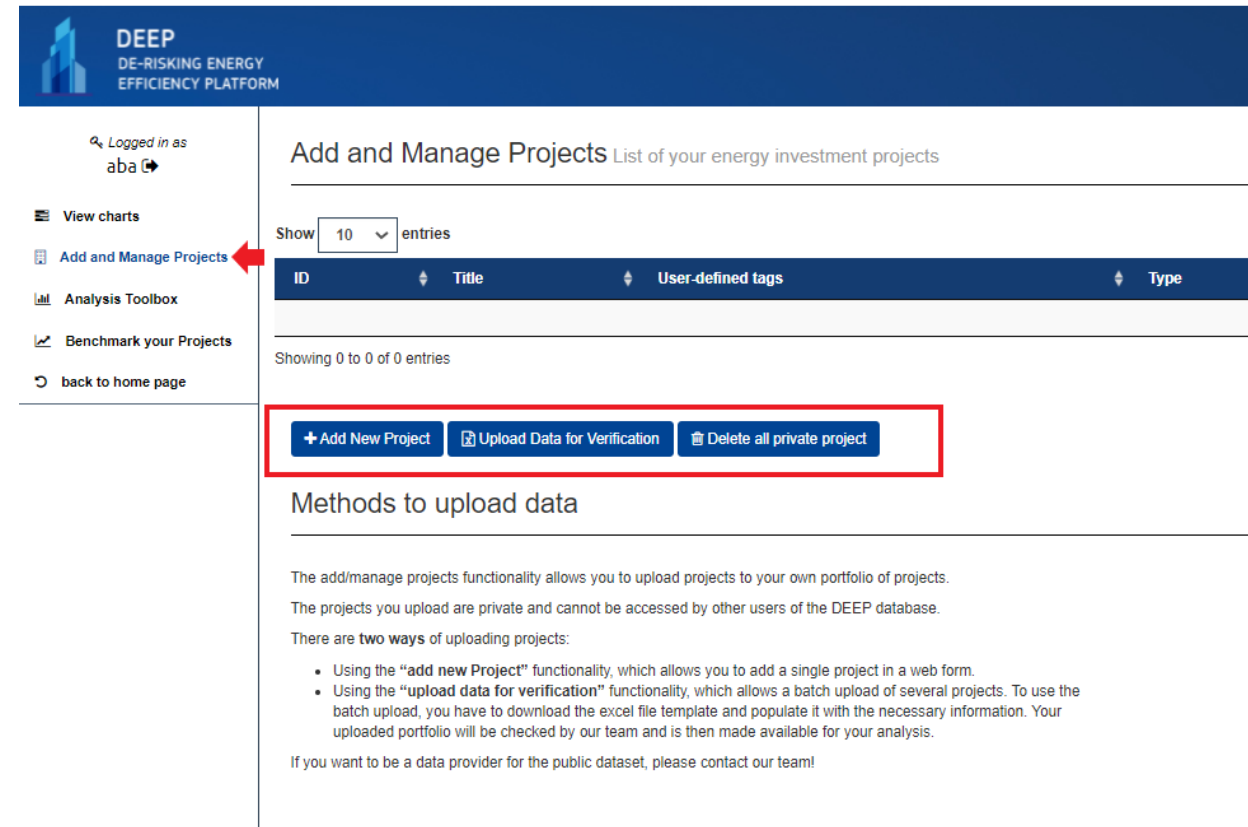


4.0 Add and manage projects

Data providers can upload and manage energy efficiency projects from the Add and Manage projects menu item. This section presents the list of the current added projects connected to the user’s profile. The list indicates the title, a user-defined tag and other information including the sharing level of the project. By default, all added projects are private and are not taken into consideration in the other sections of the platform (View charts, analysis toolbox, overview). Private projects are only visible in the benchmark service in order to benchmark the existing Deep platform projects with the user’s portfolio.

Data providers can upload data for verification, where the administrators of the Deep Platform will examine and approve the data in order to include it in the overall analysis of the platform (overview, view charts, analysis toolbox, benchmark) that is shared with all users. The administrators can change the sharing level of the projects by clicking the respective buttons at the bottom of the projects list page.

Users can create a new project by clicking “Add new project” or edit an existing project by clicking on the project in the list of projects. In both cases the edit project page will appear where the user can provide input for the energy efficiency project.



DEEP
DE-RISKING ENERGY
EFFICIENCY PLATFORM

Logged in as
aba

View charts

Add and Manage Projects

Analysis Toolbox

Benchmark your Projects

back to home page

Add and Manage Projects List of your energy investment projects

Show 10 entries

ID	Title	User-defined tags	Type
Showing 0 to 0 of 0 entries			

+ Add New Project Upload Data for Verification Delete all private project

Methods to upload data

The add/manage projects functionality allows you to upload projects to your own portfolio of projects. The projects you upload are private and cannot be accessed by other users of the DEEP database. There are **two** ways of uploading projects:

- Using the “add new Project” functionality, which allows you to add a single project in a web form.
- Using the “upload data for verification” functionality, which allows a batch upload of several projects. To use the batch upload, you have to download the excel file template and populate it with the necessary information. Your uploaded portfolio will be checked by our team and is then made available for your analysis.

If you want to be a data provider for the public dataset, please contact our team!

4.0 Add and manage projects

Add project

The edit project page is as shown to the right. On this page the user is asked to fill out the mandatory data fields in the four categories; Project and Sector Information, Energy Efficient Investment, Energy Consumption and Data Sources and Savings.

In the two boxes to the left, the user can save, delete and manage the sharing level of the project. The default sharing level is private. If the user is verified as an official data provider, the user can share projects for analysis.

A user can always return to a project, if the user wishes to change/add some of the data entries or share the project after being verified as an official data provider.

Edit Project Edit the information of your project

Simple data entry

Advanced data entry

Save

Sharing level: Private

You need to be verified as an official data provider to share your data for analysis

Delete project

Project and Sector Information

Project Title *

A user-defined field to assist you later searching the project

Description

Country *

NUTS 2 Code *

City/locality *

Is the investment in a building, in industry, or in infrastructure? *

Industry Sector / Organisation type *

Organisation size *

Building type *

Ownership *

Floor area of building m2 *

Energy Efficiency Investment

Which Measures are included in the investment *

Select Measure from Tree

Date investment became operational (month/year) *

Energy Consumption Data and Data Sources

Energy Consumption BEFORE intervention (kWh/y) *

Predicted Energy Consumption AFTER intervention (kWh/y) *

Energy Consumption AFTER intervention (actual) (kWh/y) *

Have the project energy savings been independently verified? *

Value of EE investment (€) *

Net annual saving (€) *

Savings

total *

Save

4.0 Add and manage projects

Upload data for verification

The “upload data for verification” functionality, allows you to upload a batch projects. To use the batch upload, you have to download the excel file template and populate it with the necessary information. Your uploaded portfolio will be checked by our team and is then made available for your analysis.

The data template consist of 20 simple fields, and 200 advanced fills. The minimum information for a project to meaningful is:

- › Country
- › Building/industry
- › Measures included
- › Investment in EUR
- › Energy saving in EUR and/or Energy saving in kWh
- › Has the energy saving been independently verified

After filling out the example template the user uploads the file by clicking “choose file” and select the filled-out format of the excel template. The project is now uploaded and waiting to be verified.

Project		Where is the investment located?			Sector Indicators				Please describe the energy efficiency	
(1) Project ID	(2) Project Title	(3) Country	(4) City/locality	(5) Is the investment in a building, in industry, or in infrastructure?	(6) Industry Sector/Organisation type	(7) Organisation size	(8) Building type	(9) Ownership	(10) Floor area of building m2	(11) Which Measures are included in the investment
										Follow 3 steps to fill in measures: 1: Double click relevant cell to show measures 2: Mark selected measures as desired 3: Click on "select" in order to "save" your choices

4.0 Add and manage projects

Data privacy

The database is owned by the European Commission (DG Energy), but the day-to-day operation has been contracted to a Database Administrator. Database Terms of Use (for Data Users) and Data Privacy Terms (for Data Providers) are available through the links:

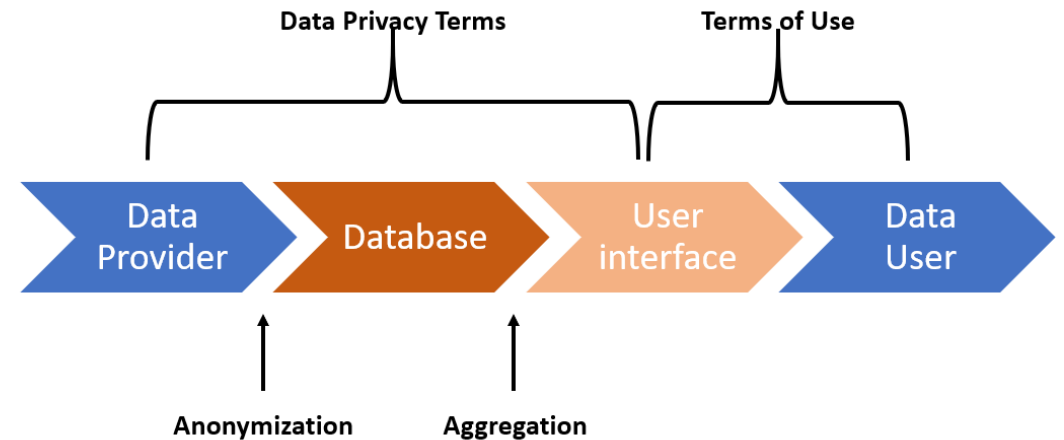
[Terms of Usage \(eefig.eu\)](https://eefig.eu/terms-of-usage)

[Privacy Terms \(eefig.eu\)](https://eefig.eu/privacy-terms)

Data providers are requested to deliver data that is anonymized to a level that is in conformity with the legal requirements of their home jurisdiction and any legal agreements entered between them and the underlying projects.

Full sets of Project Data provided by Data Provider are not made visible or otherwise available on an individual project level to Users or any outside entity through the user interface of the Platform or otherwise. Limited subsets of selected Project Data are displayed to Users in aggregated form along with similar data for other projects in graphs, charts and tables for User-selected subsets of projects.

To ensure privacy of personal data, detailed project location (zip code, address) and personal information (names and contact details for individuals) provided to the Platform by the Data Provider will not be visible for any other users of the Platform than the Data Provider and the Database Owners and Administrators.



5.0 Analysis Toolbox



5.0 Analysis Toolbox

The analysis toolbox allows the creation of charts in a dynamic and highly customizable manner. First, the user can see the list of existing saved charts that can be opened or deleted. The user can create a new chart by clicking the “Create new analysis” button.

By creating a new chart, the user selects the desired chart type (Column, Bar, Line, Area, Pie, X & Y / Scatter / Bubble). After selection of the desired chart type, the user will be navigated to the main chart creation wizard.

The screenshot shows the DEEP DE-RISKING ENERGY EFFICIENCY PLATFORM interface. The user is logged in as 'aba'. The 'Analysis Toolbox' is active, showing a sidebar with navigation options: View charts, Add and Manage Projects, Analysis Toolbox, Benchmark your Projects, and back to home page. The main content area is divided into 'Templates' (with a message 'No templates available') and 'Saved charts'. The 'Saved charts' section includes a '+ Create a new analysis' button and a table of existing charts.

#	Name	Created	Last modified	Actions
129	Chart 1	May 20, 2021, 7:24 a.m.	3 minutes ago	<input type="checkbox"/> Open <input type="checkbox"/> Delete
130	Median energy cost saving by country	May 20, 2021, 7:27 a.m.	0 minutes ago	<input type="checkbox"/> Open <input type="checkbox"/> Delete

The 'Add chart' dialog box displays a grid of chart types powered by amcharts. The categories are: Column, Bar, Line, Area, Pie & Donut, XY/Scatter/Bubble, and Other charts. The 'Column' category is selected, showing various sub-types like clustered, stacked, 100% stacked, clustered and stacked, 3D clustered, 3D stacked, 3D 100% stacked, 3D column, column and line, date based data, column with scroll, floating columns, two value axes, and logarithmic scale.

5.0 Analysis Toolbox

The main functionalities of the chart toolbox is illustrated in the following on the right. The primary functionalities are:

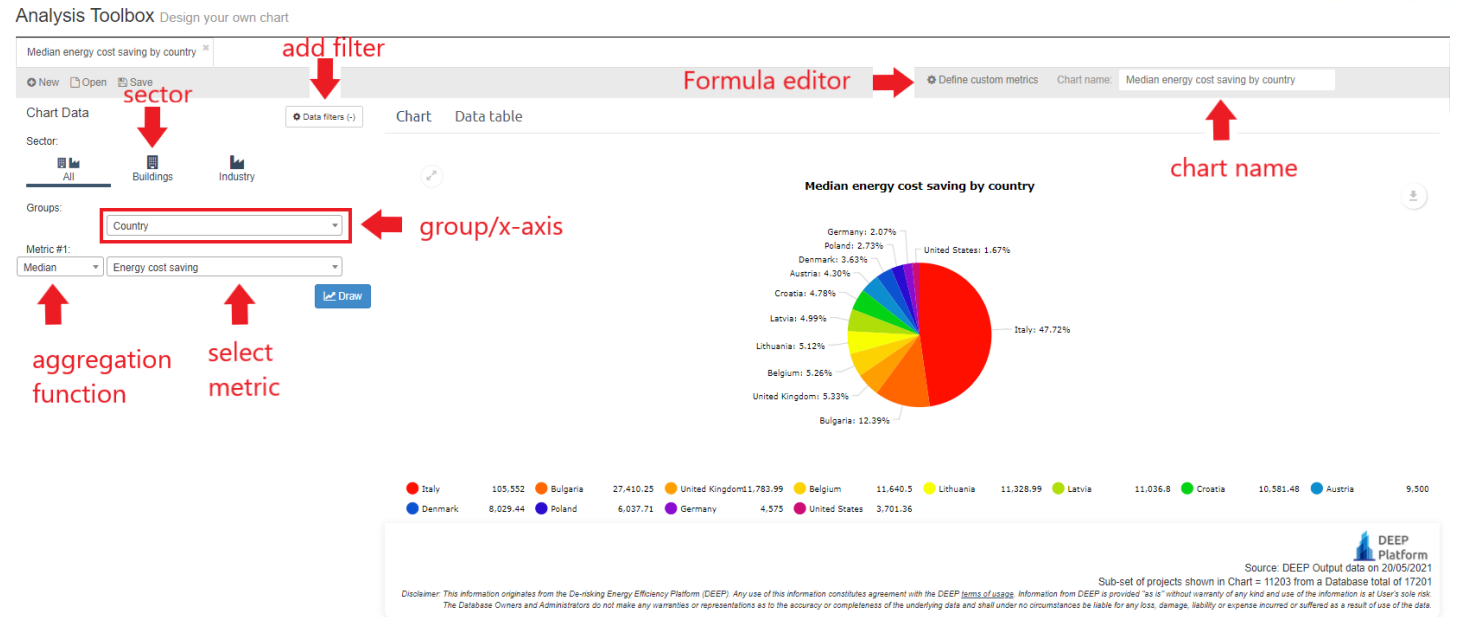
Sector: Choose the sector that you want the chart to illustrate

Group (x-axis): Choose how you want the division in the figure displayed; country, measure type, verification method, building type, organization size and so on.

Select metric (y-axis): Select the metric of interest Total investment, Energy consumption (before, after, forecast),etc.

Aggregation function: Average, Sum, Count, Min, Max, Percentiles, Median, Standard deviation

Data filters: the user is able to add multiple filters for the projects as indicated in the following figure



5.0 Analysis Toolbox

Data filters

The user is able to add multiple filters for the projects as indicated in the following figure by clicking on “Data filters” in the upper left menu.

Choose the desired filter variable, along with the wished proposition value of filter. After setting up the filter click “Add to filters” in order to apply the filter to the chart figure. The results, included the applied filter, is now available in the chart area of the Analysis Toolbox page.

Custom metrics

Moreover, the user is able to create advanced, custom metrics by clicking the Define custom metrics button on top of the chart.

To create a custom formula, the user drags and drops variables and math functions from the left menu into the formula field. If there is an error in the formula the toolbox will indicate the issue with a warning, else the user can save the formula and the system will automatically estimate the unit of the formula. After the formula is saved the user will be able to pick the created formula from the Metrics drop down menu.

Save changes

6.0 Benchmark your projects



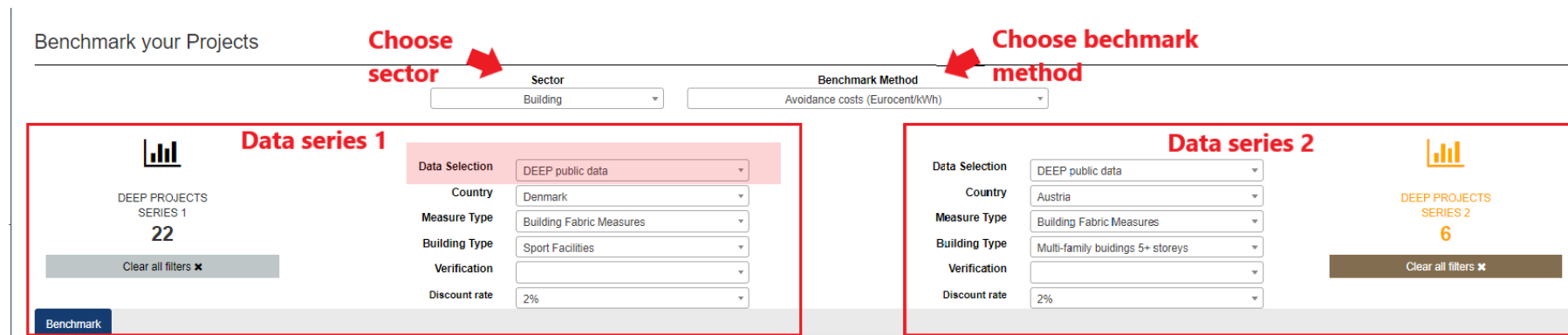
6.0 Benchmark your projects

Benchmarking

Deep 2.0 offers a new and improved benchmark service, which allows users to benchmark their projects against the projects of the Deep Platform database. The user can also benchmark existing projects from the deep database against each other. The user can choose between DEEP Public data or the user’s portfolio in the “data selection”-filter. The user should begin with choosing the sector (Industry or Building) and the benchmark method. The benchmark methods includes Avoidance costs, Simple payback time, Area costs, Energy saved forecast, Energy saved realized, IRR and NPV.

The right side of the panel defines the Data series 1 and the left side Data series 2. The panel for both data series also provides information regarding the number of projects in each benchmark data series. The lower limit for allowed specified sample size of projects is 10. Hence, if the chosen filters concludes in projects with sample size less than ten there will not be displayed any results. Besides data selection, DEEP also offers the following benchmark filters:

- › Country
- › Measure Type
- › Building Type
- › Verification method
- › Discount rate



The screenshot shows the 'Benchmark your Projects' interface. At the top, there are two dropdown menus: 'Sector' (set to 'Building') and 'Benchmark Method' (set to 'Avoidance costs (Eurocent/KWh)'). Red arrows point to these with the text 'Choose sector' and 'Choose benchmark method' respectively.

Below these are two panels for 'Data series 1' and 'Data series 2':

- Data series 1:** Shows 22 projects. Filters include: Data Selection (DEEP public data), Country (Denmark), Measure Type (Building Fabric Measures), Building Type (Sport Facilities), Verification (empty), and Discount rate (2%).
- Data series 2:** Shows 6 projects. Filters include: Data Selection (DEEP public data), Country (Austria), Measure Type (Building Fabric Measures), Building Type (Multi-family buildings 5+ storeys), Verification (empty), and Discount rate (2%).

Each panel has a 'Clear all filters' button and a 'Benchmark' button at the bottom.

6.0 Benchmark your projects

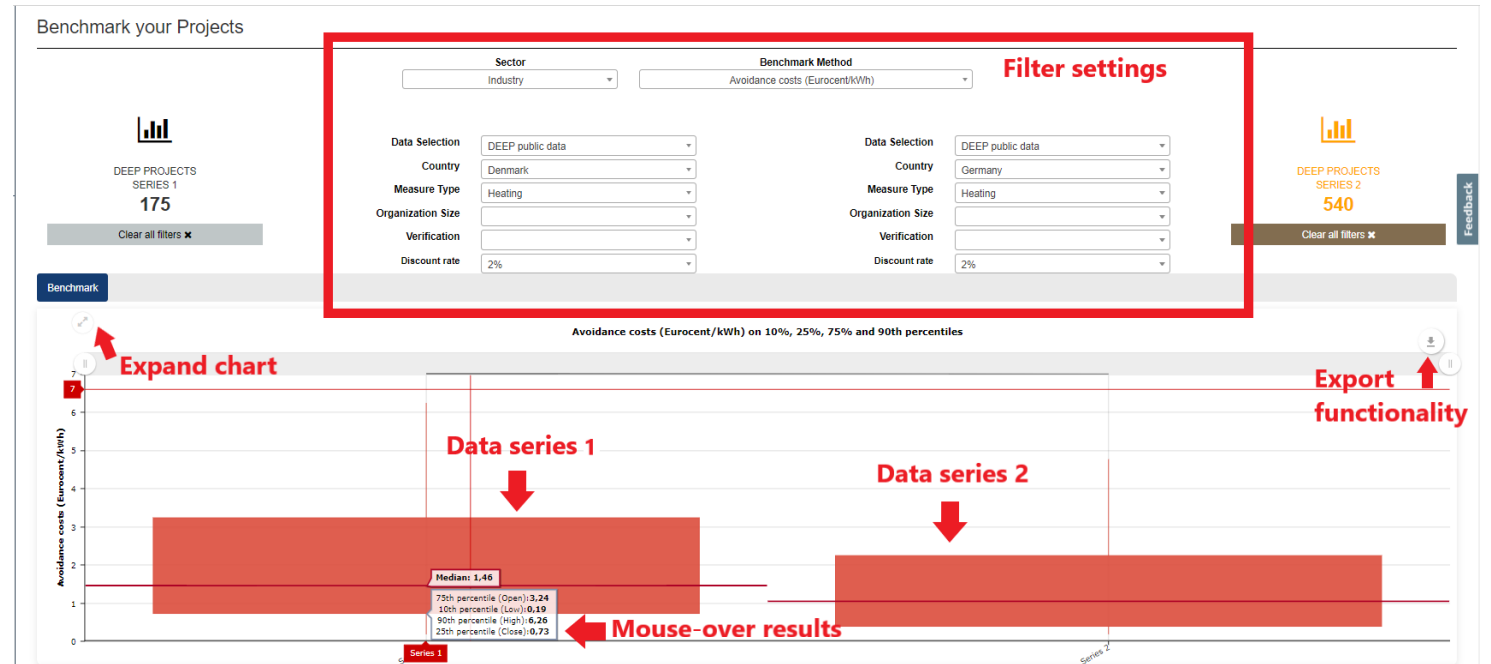
Benchmarking chart area

In the worked example on the right, Denmark and Germany is being benchmarked for the measure heating and with a 2% discount rate. The data used for this example is DEEP public data.

We see that data series 1 and 2 consist of 175 projects (Denmark) and 540 projects (Germany) respectively. The Benchmark area offers additional functionalities as the mouse over effect for each data series, which shows further information about data.

Moreover, the user can expand the chart in the upper left corner or use export functionalities in the upper right corner. The export functionality includes;

- › download the current chart as image or pdf
- › save the data of the chart in excel, csv or json
- › annotate the chart with custom graphics / text
- › print current chart



6.0 Benchmark your projects

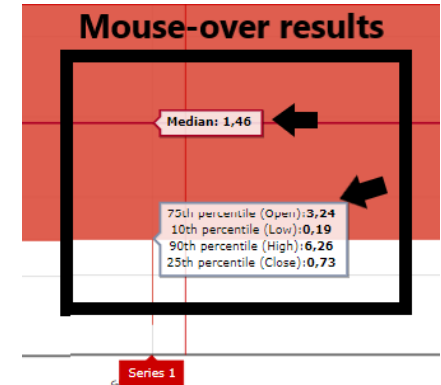
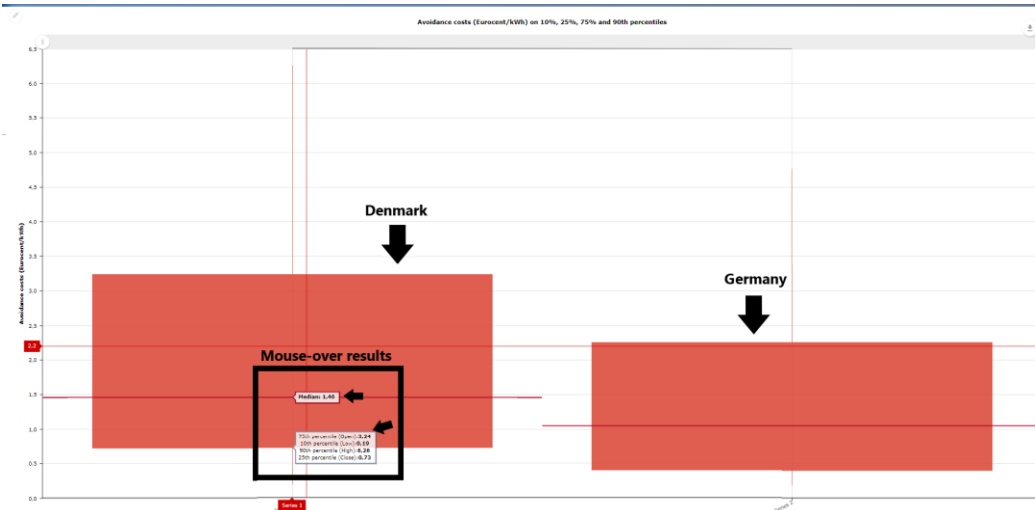
Benchmarking charts interpretation

The mouse over and benchmark table effect includes information about;

- › Open, the 75th Percentile.
- › Low, the 10th Percentile.
- › High, the 90th Percentile.
- › Close, the 25th Percentile.
- › Median

We see that for the worked example Denmark has a median avoidance cost of 1,46 (EUR/kWh) and a 75th percentile of 3,24 (EUR/kWh). Meaning, that 75% of the heating projects in Denmark for the sector industry has avoidance costs equal or less than 3,25 (EUR/kWh).

Below the chart area in the benchmarking tool, the benchmark results are also represented along with additional information as average, standard deviation, kurtosis, skewness, value at risk and the number of observation for each data series.



Benchmark results

	Projects	Percentile 90th	Percentile 75th	Median	Percentile 25th	Percentile 10th	Average	Standard Deviation	Kurtosis	Skewness	Value at Risk	Observations
1	Series 1	6,26	3,24	1,46	0,73	0,19	3,02	4,64	13,97	3,44	N/A	174
2	Series 2	4,77	2,25	1,05	0,4	0,19	2,55	9,49	210,65	13,88	N/A	540

7.0 Using the API



7.0 Using the API

You can use the API to acquire the platform's data directly in your third party applications. For using the API, you need to use the API key assigned to your user account. You can see your API key under the API page (see image to the right).

The API offers several selection of parameters, the parameter input are;

1. Projecttype
2. Country
3. Measuretype
4. Comapnysize
5. Verification

To see the possible selections for the parameters go to API page on the DEEP platform. On the API page, there is a full list of parameter options for the different inputs.



GET Parameters

1.projecttype
The project type for the query.
Allowed values:
'Building'
'Industry'

2.country
Filter the results for a specific country.
Allowed values:
The ISO code name for the country. E.g. 'DE' for Germany, 'EL' for Greece. You can put 'EU' for all EU countries.

3.measuretype
Filter the results for a specific measure.
Allowed values:
For buildings
'Building Fabric Measures'
'Combination of Building Fabric and HVAC'
'Integrated Renovation'
'Lighting'
'HVAC Plant'
'Ventilation and air conditioning'
'Other'
For Industry
'Compressed Air'
'Cooling'
'Heating'
'ICT'
'Metering, Monitoring and Energy Management'
'Motors'
'Power Systems'
'Pumps'



7.0 Using the API

Usage example of the API:

Let's suppose we want to extract median and number of observations for selected KPI (Payback time per measure) and selection of data (Sector = Buildings) and filters (Country = EU countries):

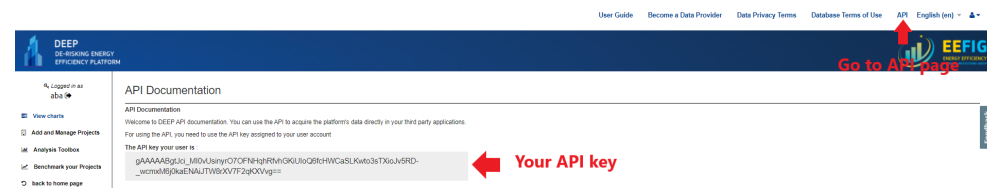
The basic API url for payback time per measure is <https://deep.eefig.eu/external/api/factsheet/payback/>

We choose the sector for building by appending `?projecttype=Building` to the url and becomes <https://deep.eefig.eu/external/api/factsheet/payback/?projecttype=Buildings>

We want to filter for EU countries. We do that by appending `&country=EU` to the url and becomes <https://deep.eefig.eu/external/api/factsheet/payback/?projecttype=Buildings&country=EU>

Lastly we need to put our private api key found on the top of the page therefore we append `&apikeythe` to the url as

```
https://deep.eefig.eu/external/api/factsheet/avoidance/?projecttype=Industry&apikey=(your api key)
```



The platform returns the following JSON object:

```
[{"category": "Lighting", "open": 5.0, "high": 8.43, "low": 0.78, "medianFormatted": "2,97", "close": 1.53, "observations": "1.126", "totalobservations": "4.110"}, {"category": "HVAC Plant", "open": 7.96, "high": 17.31, "low": 0.55, "medianFormatted": "3,29", "close": 1.42, "observations": "1.555", "totalobservations": "4.110"}, {"category": "Building Fabric Measures", "open": 16.61, "high": 26.11, "low": 3.75, "medianFormatted": "11,08", "close": 7.32, "observations": "1.072", "totalobservations": "4.110"}, {"category": "Integrated Renovation", "open": 21.98, "high": 31.95, "low": 3.74, "medianFormatted": "13,47", "close": 5.41, "observations": "357", "totalobservations": "4.110"}]
```

You can then parse the JSON object on your programming environment. You can view the results of the JSON object in a table using a converter (such as <http://json2table.com/>) as below:

category	open	high	low	medianFormatted	close	observations	totalobservations
Lighting	5	8.43	0.78	2.97	1.53	1.126	4.110
HVAC Plant	7.96	17.31	0.55	3.29	1.42	1.555	4.110
Building Fabric Measures	16.61	26.11	3.75	11.08	7.32	1.072	4.110
Integrated Renovation	21.98	31.95	3.74	13.47	5.41	357	4.110