



DEEP

DE-RISKING ENERGY EFFICIENCY PLATFORM



Energy Efficiency
Financial Institutions Group



IEPPEC Energy Evaluation Academy
WEBINAR COURSE on 6 Jul 2017
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AGENDA

1. Intro (10 minutes)
 - EEFIG and the EEFIG de-risking project
 - DEEP and the EEFIG Underwriting Toolkit
2. The DEEP (15 minutes)
 - Data structure and sources
 - Emerging results
 - How to become a user or a data provider
3. Walkthrough of the platform (15 minutes)
4. Q&A (20 minutes)

INTRO

- Energy efficiency investments have multiple benefits for Europe: Reduced reliance on imported energy; enhanced competitiveness of Europe's industry; and reduced global and local environmental problems.
- Buildings are responsible for 40% of final energy consumption and industry is responsible for 26% of final energy consumption in EU.
- 75% of buildings were built with no or minimal energy-related building codes and 75-90% of today's buildings will still be in use in 2050.
- EU's industry is a world leader in energy efficiency, but there are still substantial potential savings.
- EU's investment need in energy efficiency up to 2035 (for 2°C scenario, IEA) is EUR 1,180 billion in buildings and EUR 140 billion in industry.
- Current investment trends must increase multiple times.

- The EEFIG (www.eefig.eu) was established by DG Energy and UNEP FI, in 2013 as a working forum for public and private financial institutions, industry representatives and sector experts with a common interest in overcoming the challenges of obtaining long-term financing for energy efficiency.
- The EEFIG 2015 report "Energy Efficiency – the first fuel for the EU Economy; How to drive new finance for energy efficiency investments" highlighted among others the following problems:
 - Lack of evidence on the performance of energy efficiency investments makes the benefits and the financial risk harder to assess.
 - Lack of commonly agreed procedures and standards for energy efficiency investment underwriting increase transaction costs.

THE EEFIG DE-RISKING ENERGY EFFICIENCY PROJECT

- In continuation of the EEFIG 2015 findings, the EEFIG de-risking project is during 2016-17 addressing the fundamentals of energy efficiency investments in the buildings and corporate sectors through:
 - Creation of an open source database for energy efficiency investments performance monitoring and benchmarking (De-risking Energy Efficiency Platform or 'DEEP')
 - Development of common, accepted and standardized underwriting and investment framework for energy efficiency investing (The EEFIG Underwriting Toolkit - Value and risk appraisal framework for energy efficiency finance and investments)
- The EEFIG de-risking project is supported by a consultant team:

THE DE-RISKING ENERGY EFFICIENCY PLATFORM

DEEP is an open source database for energy efficiency investments performance monitoring and benchmarking.

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

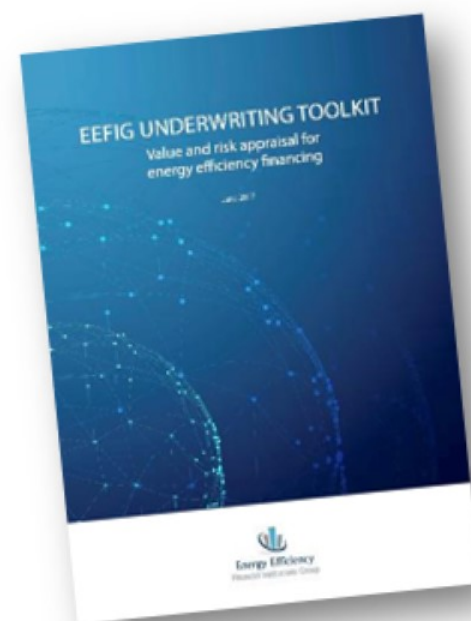
Upon launch the database includes 7,800+ energy efficiency projects in buildings and industry from 25 data providers.



THE EEFIG UNDERWRITING TOOLKIT

A value and risk appraisal framework for energy efficiency finance and investments to assist scaling up the deployment of capital into energy efficiency by:

- helping financial institutions better understand and evaluate value and risks.
- providing a common framework for evaluating energy efficiency investments and analysing the risks.
- helping developers and owners develop projects in a way that better addresses the needs of financial institutions.
- fostering a common language between project developers, project owners and financial institutions.



THE DEEP AND THE EEFIG UNDERWRITING TOOLKIT

- The De-risking Energy Efficiency Platform (DEEP) was launched in connection with the EC Winter Package in November 2016



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<http://deep.eefig.eu>

- The EEFIG Underwriting Toolkit (Value and risk appraisal framework for energy efficiency finance and investments) was launched in connection with the EU Sustainable Energy Week in June 2017

<http://valueandrisk.eefig.eu>



THE DEEP

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- DEEP contains 4,900+ buildings projects and 2,400+ industrial projects from 24 European Member States and 560 from elsewhere (mainly USA) at launch.
- DEEP tracks Euro 1.5 billion of investment projects contributed by 25 large companies, public banks, private investment funds, financial institutions and ESCOs.
- DEEP directly addresses the need to have a user-friendly, transparent and open source evidence base for EU financial investors to reference when considering entry into the energy efficiency markets.



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THE INITIAL DATA PROVIDERS



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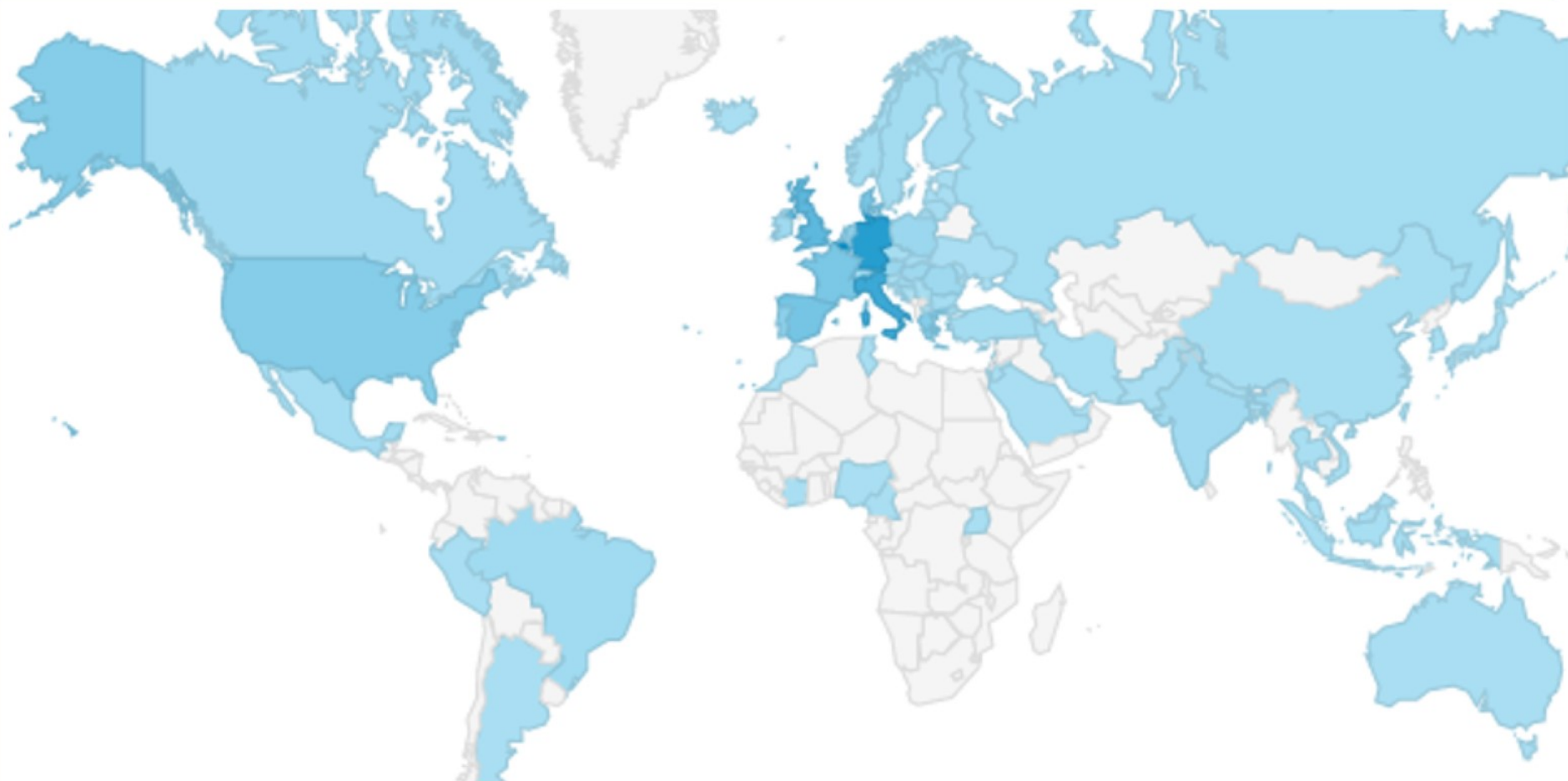
THE USERS



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2,000+ users
70+ countries
10,000 DEEP pages

THE DE-RISKING ENERGY EFFICIENCY PLATFORM

PROCESS OF ESTABLISHING THE DEEP



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- Review of other EE project data platforms (Jan 2016)
- Definition of user groups, use cases and data needs (Feb 2016)
- The data matrix (Mar 2016)
- The data collection template (Mar-Apr 2016)
- Mock-up of outputs (Mar-May 2016)
- The data privacy terms and terms of use (Mar-Jun 2016)
- Programming and testing of the DEEP (Jul-Nov 2016)
- Contacts to data providers (Jan 2016 - now)
- Data cleaning and clarification on received data (Jan 2016 - now)
- Launch (3 Nov 2016)



The data template covers (simple 20 fields, advanced 200 fields):

- Project and sector information
- The energy efficiency investment measures
- Energy consumption data before and after
- Financial indicators
- Qualitative indicators (reasons for investment and benefits realized)

The absolute minimum information for a project to be meaningful are:

- 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

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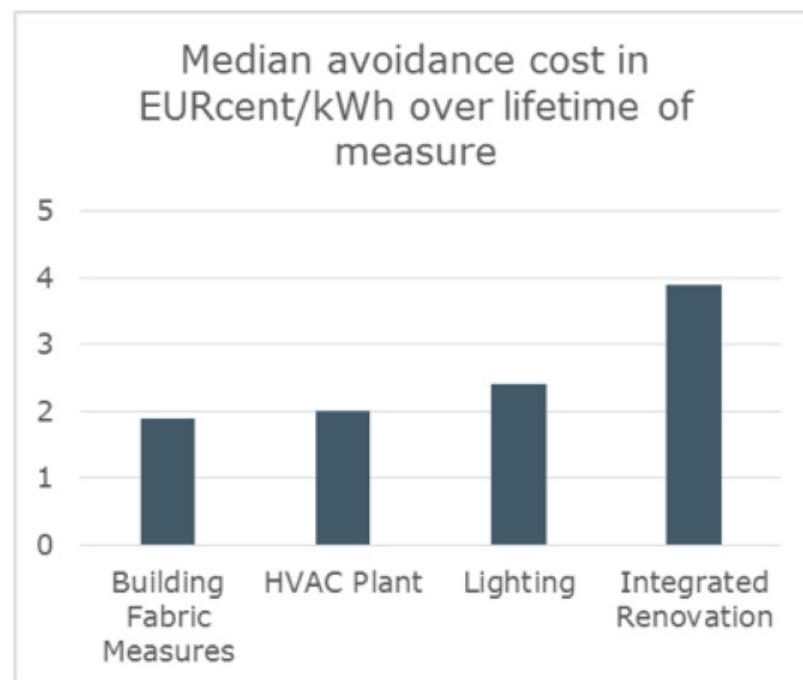
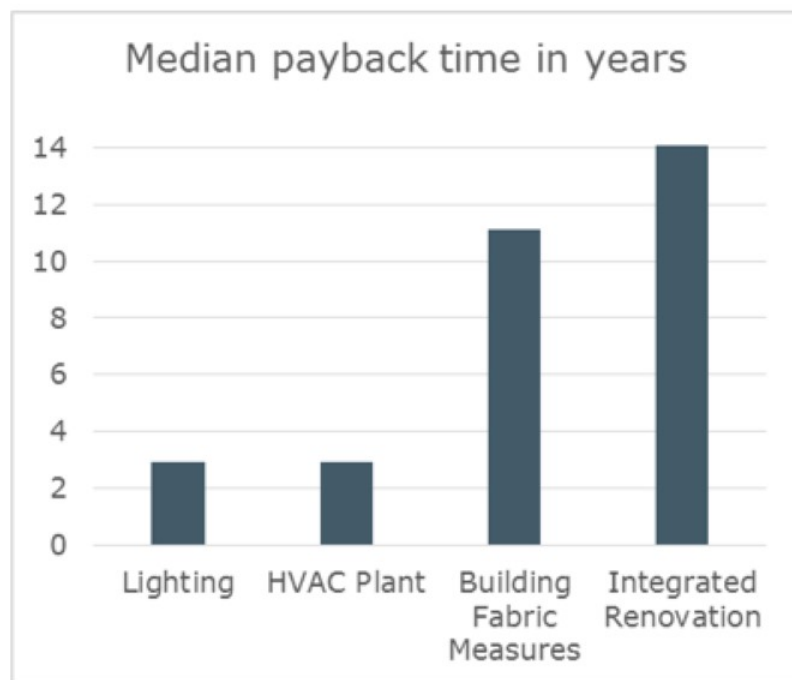
EMERGING RESULTS - BUILDINGS



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Single measures (e.g. Lighting or HVAC) payback in a median of 3 years, whereas projects with deeper renovations typically require over 11 years to be paid back.

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EMERGING RESULTS - INDUSTRY



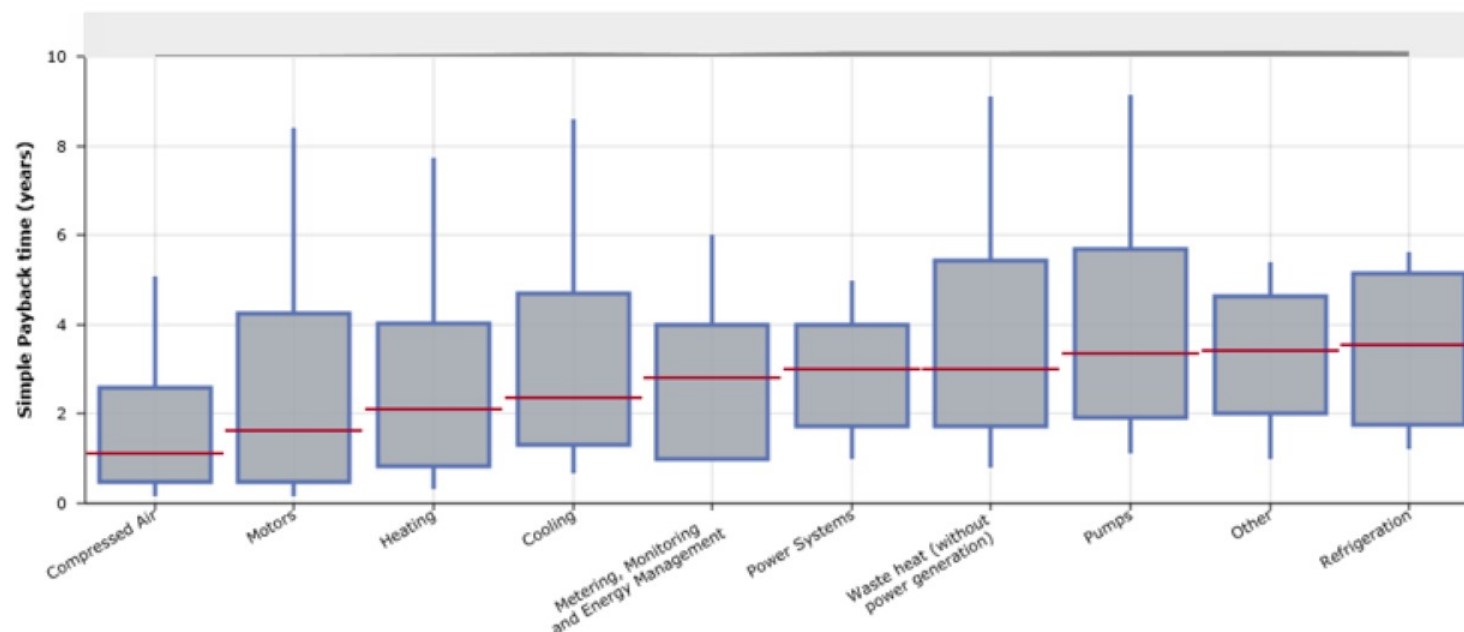
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Distribution of payback time on 10%, 25%, 75% and 90% percentiles - Measure types



The median payback from contributed energy efficiency projects in industry is 2 years.

THE DE-RISKING ENERGY EFFICIENCY PLATFORM

WHY SHOULD YOU USE IT?



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- DEEP provides anonymized historical data structured along major project characteristics.
- DEEP platform provides insight on financial performance indicators such as payback time and discounted avoidance cost.
- These clearly document the existence of many investment opportunities within energy efficiency in both buildings and industry.
- Financial institution may upload their own individual projects or portfolios as private projects and benchmark them against user-selected sub-sets of the projects in DEEP.



Become a user

- ✓ Enhance your understanding of and access to energy efficiency finance related business opportunities
- ✓ Streamline underwriting procedures through the development and use of a common language for energy efficiency underwriting
- ✓ Decrease due diligence and transaction costs
- ✓ Better risks assessment through high quality and credible data framework

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WHY SHOULD YOU PROVIDE DATA?



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Supplementary data collection during 2017 to ensure:

- Better geographic spread
- More projects with data on verification status
- More projects with information on multiple benefits

Please help us achieving this by becoming a data provider!

You may contact:

Carsten Glenting (cag@cowi.com) or
Timothée Noël (Timothee.Noel@ec.europa.eu)



Become a data provider

- ✓ Contribute to creating of European evidence base which is key to "get the EE policy and market story right"
- ✓ Acknowledgement and visibility as data contributor
- ✓ Benchmarking your project performance versus others
- ✓ Connect your data to investors
- ✓ Influence the industry best practice

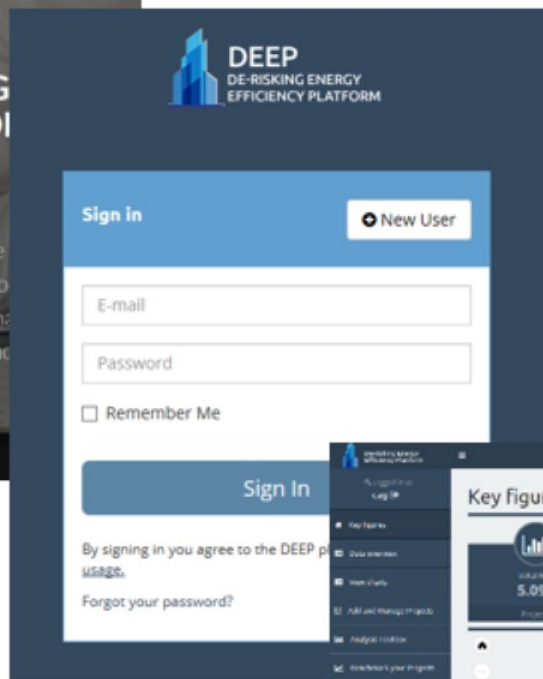
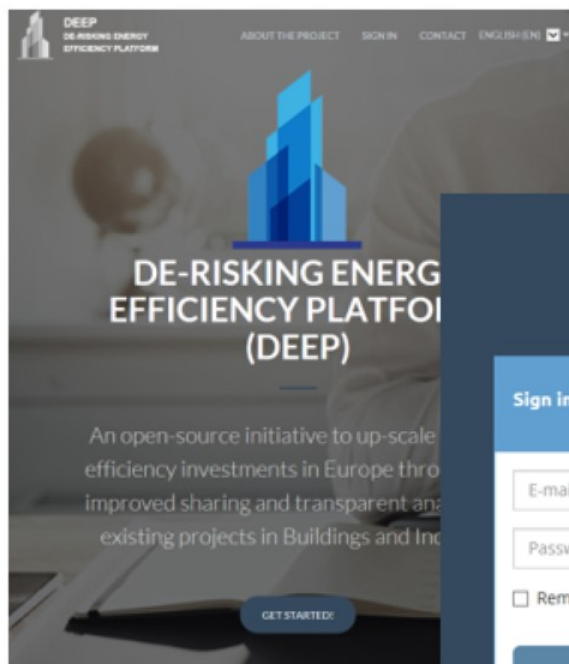


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


A WALKTHROUGH OF THE PLATFORM

THREE SIMPLE STEPS TO EXPLORE THE DEEP



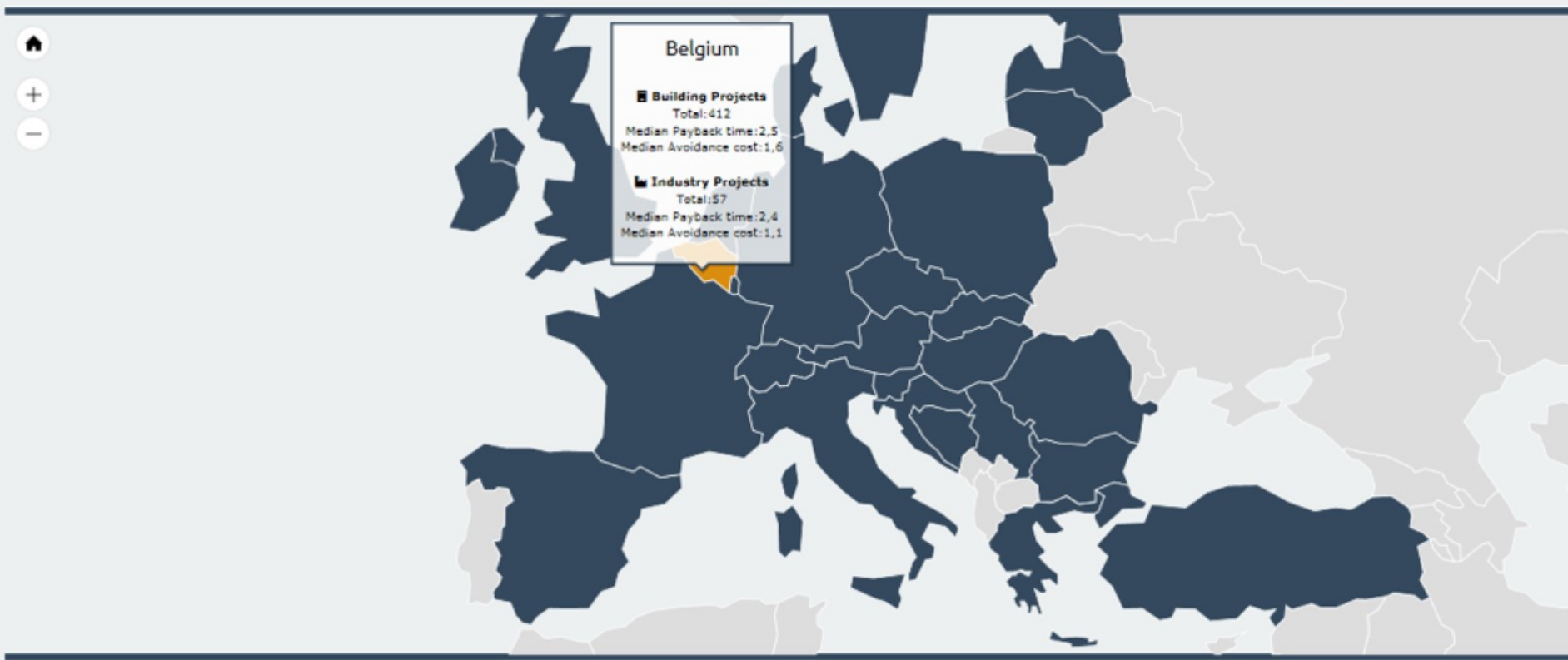
1. Access deep.eefig.eu
2. Sign in or sign up
3. Start exploring the DEEP

KEY FEATURES IN DEEP

[User Guide](#)[Become a Data Provider](#)[Data Privacy Terms](#)[Database Terms of Use](#)[English \(en\)](#) [Key figures](#) [Data overview](#) [View charts](#) [Add and Manage Projects](#) [Analysis Toolbox](#) [Benchmark your Projects](#)

Key figures

Key figures for energy investments in the platform



Note:
Payback Time: The average (median) payback time (years required for the saving to pay for the investment without any interest costs)
Avoidance Cost: The avoidance cost (average cost in Eurocent for each kWh energy saved over the lifetime of the measure)



Buildings Industry

Country

Measure Type

Building Type

Verification

Discount rate for avoidance cost

PROJECTS BY FILTER

5094

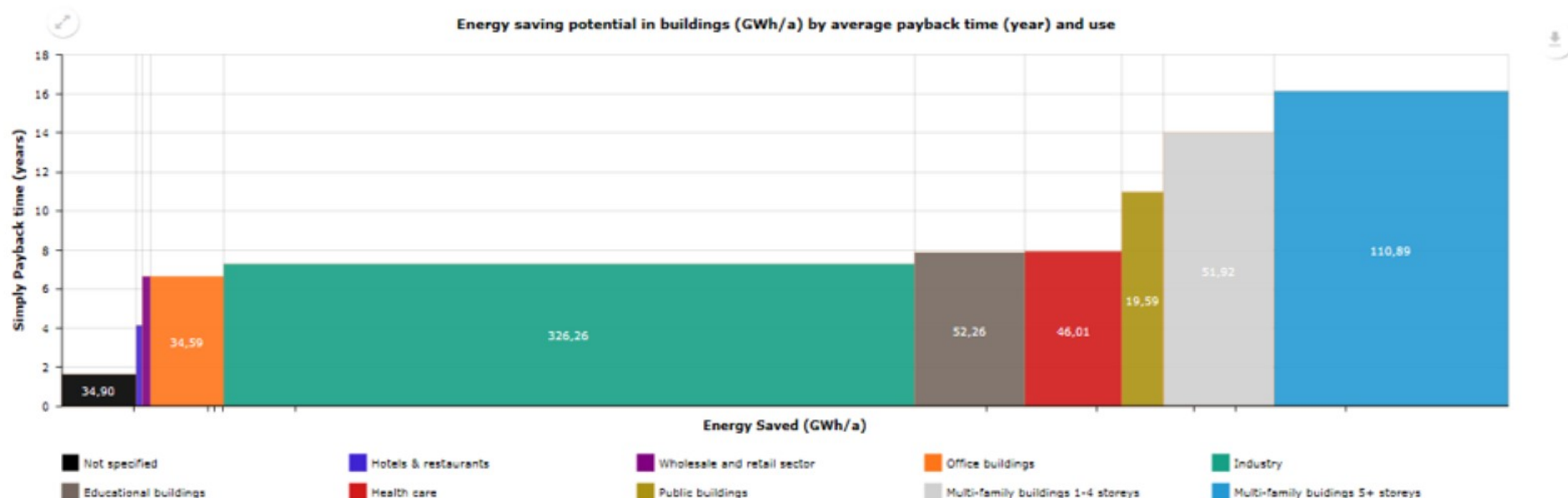
[Clear all filters](#) ✕

Report Energy saving Payback per measure Payback per building type Avoidance cost per measure Avoidance cost per building type Unit energy saving per measure Unit energy saving per building type



Buildings

Date: 07/05/2017
 Projects by filter: 5094
 Country: All
 Measure Type: All
 Building Type: All
 Verification: All
[Print factsheet](#)



Source: DEEP Output data on 05/07/2017
 Sub-set of projects shown in Chart = 3,489 from a Database total of 7877

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Buildings

Industry

Country

EU-28

Measure Type

Building Type

Verification

Discount rate for avoidance cost

0%

PROJECTS BY FILTER

4501

Clear all filters

Report

Energy saving

Payback per measure

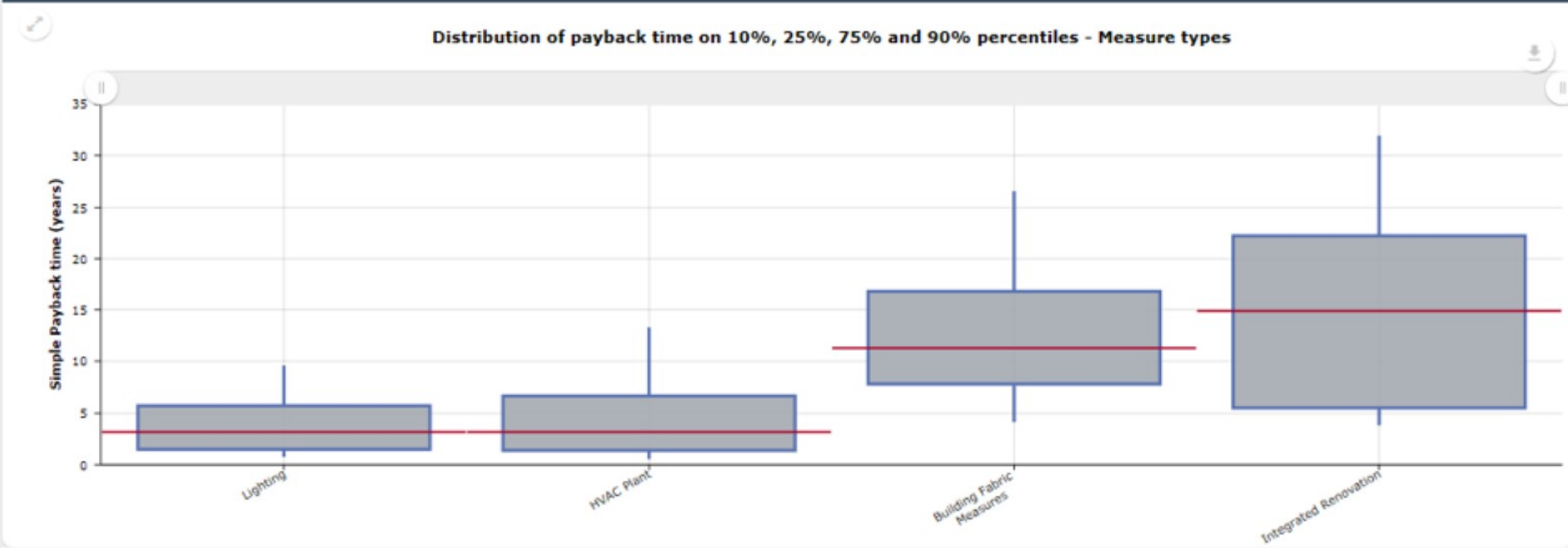
Payback per building type

Avoidance cost per measure

Avoidance cost per building type

Unit energy saving per measure

Unit energy saving per building type



View Charts - Buildings

Buildings

Industry

Country

EU-28

Measure Type

Building Type

Verification

Discount rate for avoidance cost

0%

PROJECTS BY FILTER

4501

Clear all filters

Report

Energy saving

Payback per measure

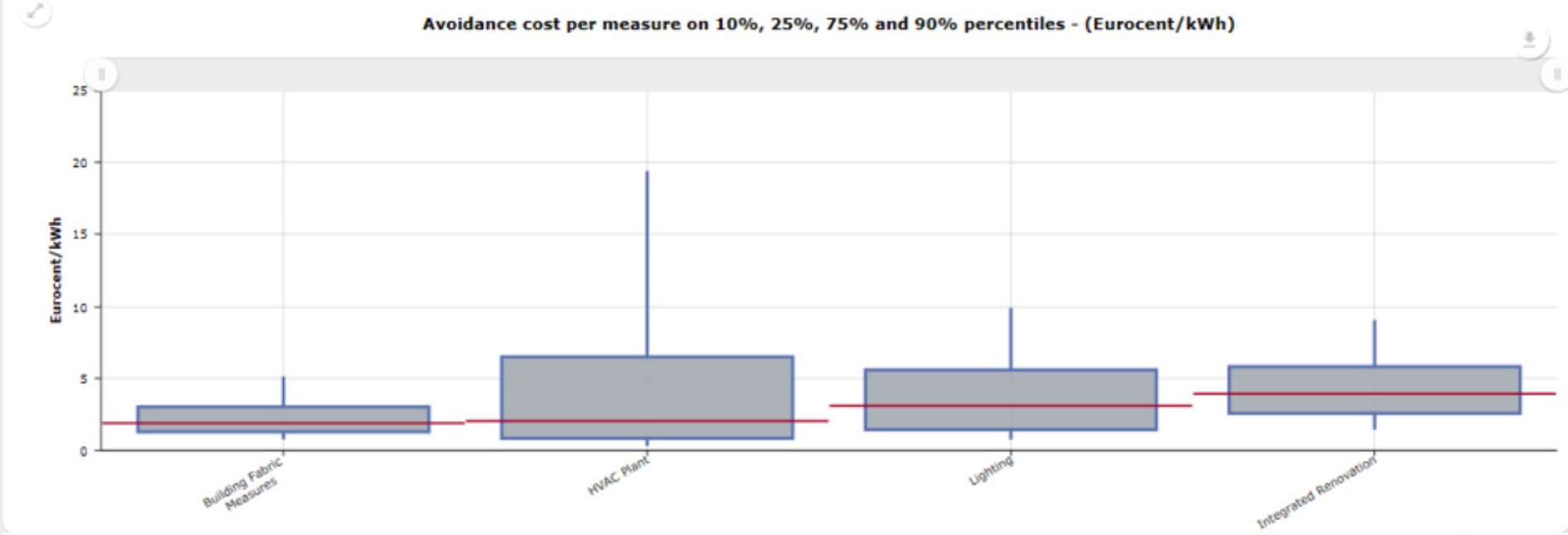
Payback per building type

Avoidance cost per measure

Avoidance cost per building type

Unit energy saving per measure

Unit energy saving per building type



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View Charts - Buildings



Buildings



Industry

Country

EU-28

Measure Type

Building Type

Verification

Discount rate for avoidance cost

10%



PROJECTS BY FILTER

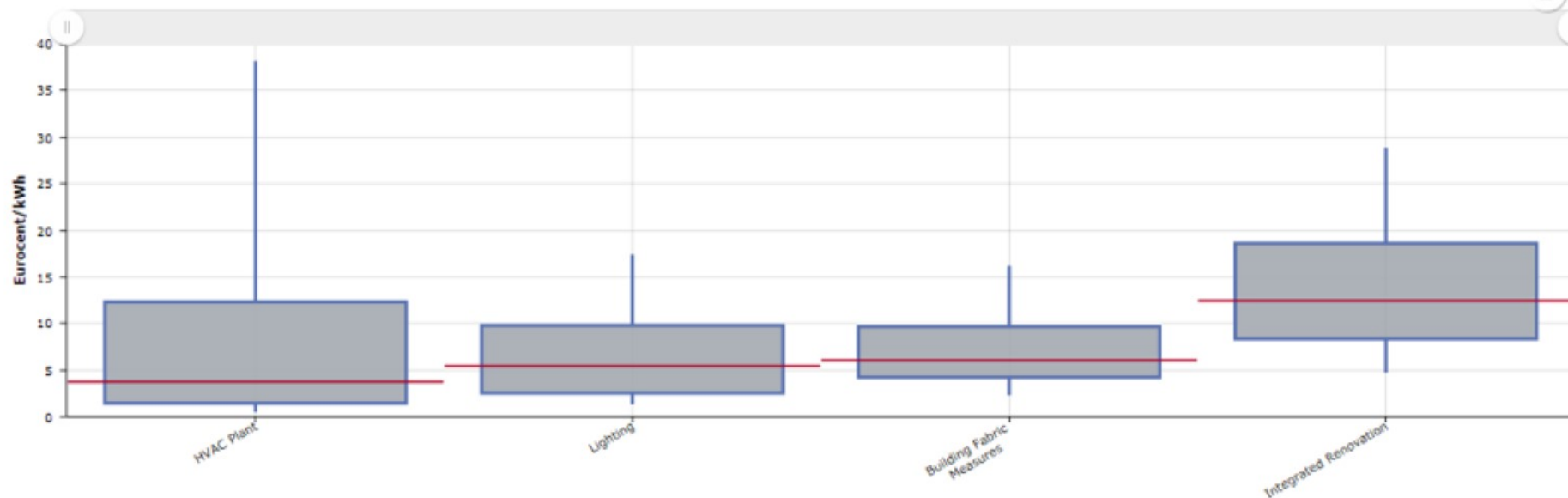
4501

Clear all filters ✕

Report Energy saving Payback per measure Payback per building type **Avoidance cost per measure** Avoidance cost per building type Unit energy saving per measure

Unit energy saving per building type

Avoidance cost per measure on 10%, 25%, 75% and 90% percentiles - (Eurocent/kWh)



Buildings

Industry

Country

Measure Type

Organization Size

Verification

Discount rate for avoidance cost

0%

PROJECTS BY FILTER

2783

Clear all filters ✕

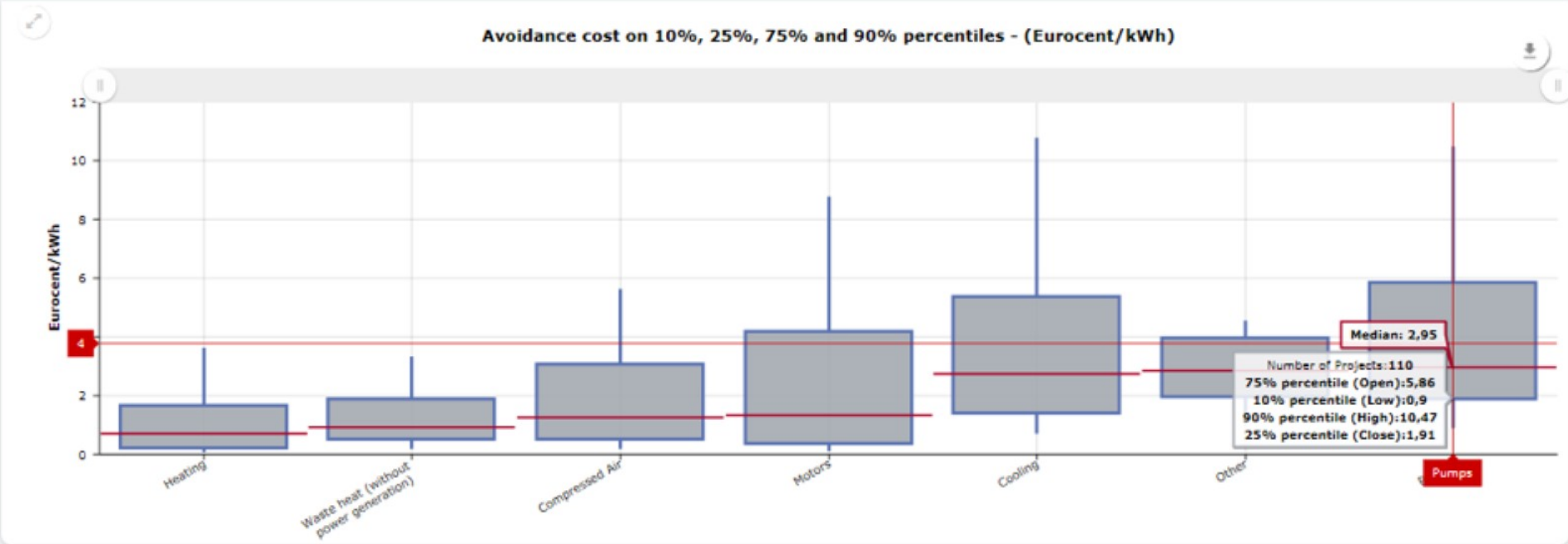
Report

Energy saving

Avoidance cost

Payback per Measure

Payback per Size



ADDING AND MANAGING PROJECTS

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 *

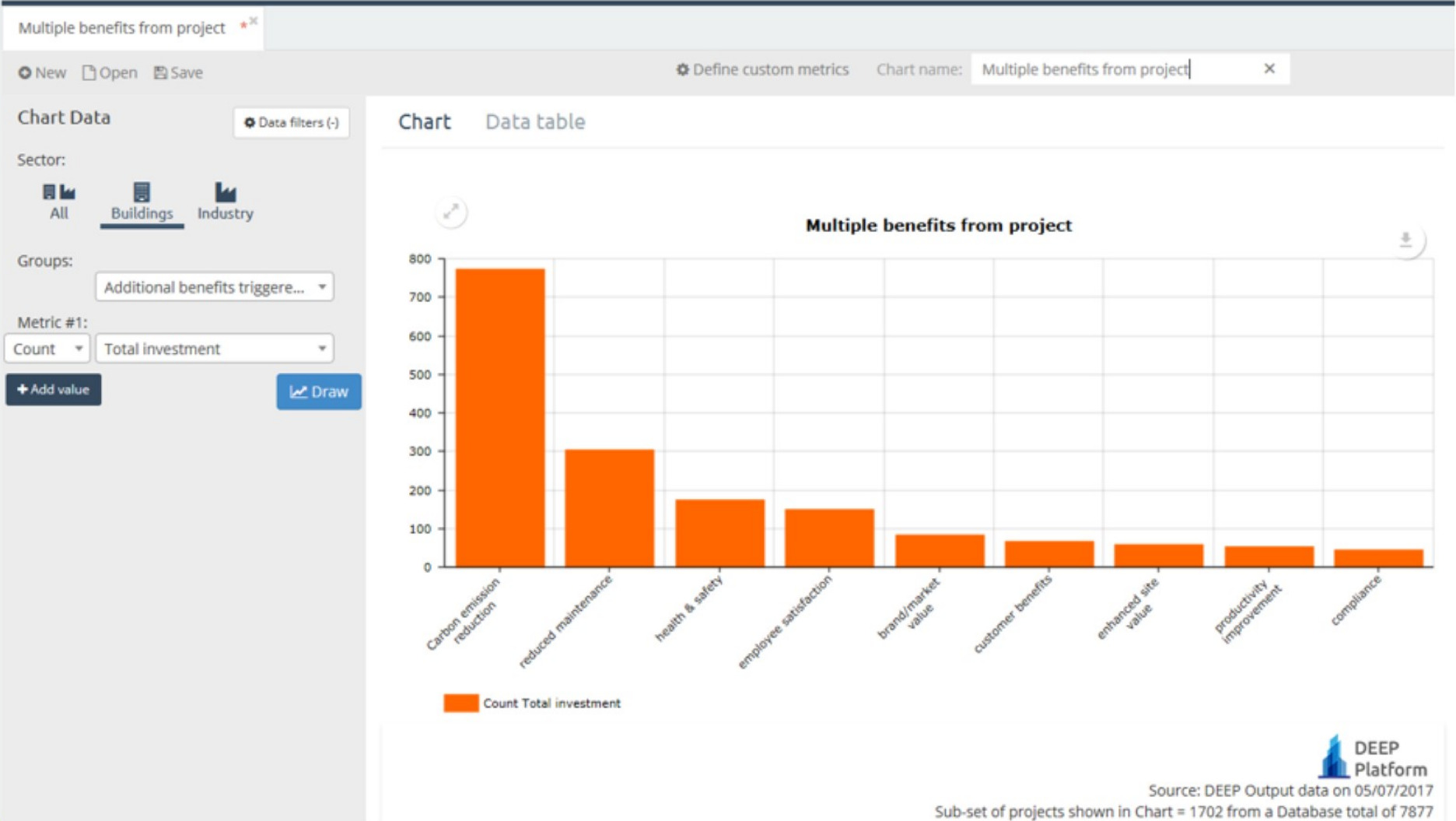
ADDING AND MANAGING PROJECTS

MEASURES

Select Measures

- ☐ Heating (process heating)
- ☐ Cooling (Process cooling)
- ☐ Street Lighting
- ☐ Lighting (without street lighting)
- ☐ Compressed Air
- ☐ Waste heat (w.o. power generation)
- ☐ Waste heat (with power generation)
- ☐ Power Systems
- ☐ Refrigeration
- ☐ Motors
- ☐ Pumps
- ☐ Other
- ☐ Building Fabric Measures
 - ☐ Walls
 - ☐ Roof
 - ☐ Floor
 - ☐ Glazing
 - ☐ Air infiltration
 - ☐ Shading
- ☐ HVAC (Space and Water) Heating, Ventilation and Air Conditioning
- ☐ Information and Communication Technologies (ICT)
- ☐ Metering, Monitoring and Energy Management

Analysis Toolbox Design your own chart



BENCHMARKING YOUR PROJECTS

Benchmark your Projects

Sector
Industry ▼

Benchmark Method
Avoidance costs (Eurocent/kWh) ▼


Country ▼


Measure Type
Compressed Air ▼

Organization Size ▼

Verification ▼

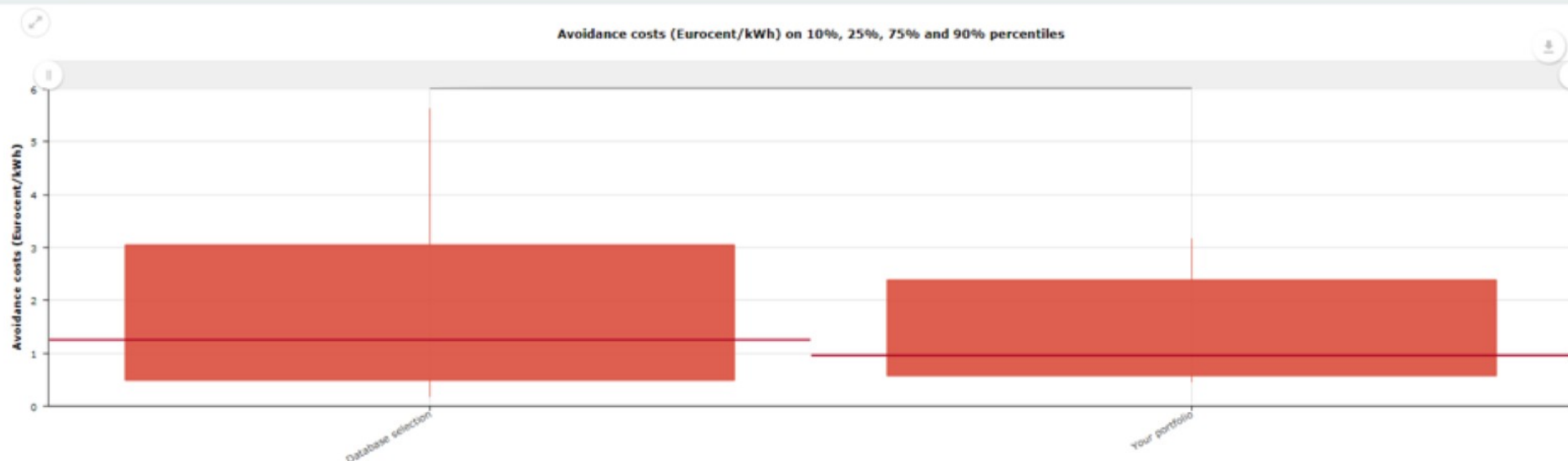
Discount rate for avoidance cost
0% ▼


DEEP PROJECTS SELECTED
626
Clear all filters ✕


YOUR PORTFOLIO
27
Select projects

Benchmark

Avoidance costs (Eurocent/kWh) on 10%, 25%, 75% and 90% percentiles



Benchmark results

	Projects	Percentile 90%	Percentile 75%	Median	Percentile 25%	Percentile 10%	Average	Standard Deviation	Observations
1	Database selection	5,64	3,06	1,25	0,5	0,18	2,85	7,26	619
2	Your portfolio	3,18	2,39	0,96	0,58	0,46	1,53	1,32	15

BENCHMARKING YOUR PROJECTS

Benchmark your Projects

Sector
Building

Benchmark Method
Simple Payback Time (years)

Country
United Kingdom

Measure Type

Building Type
Educational buildings

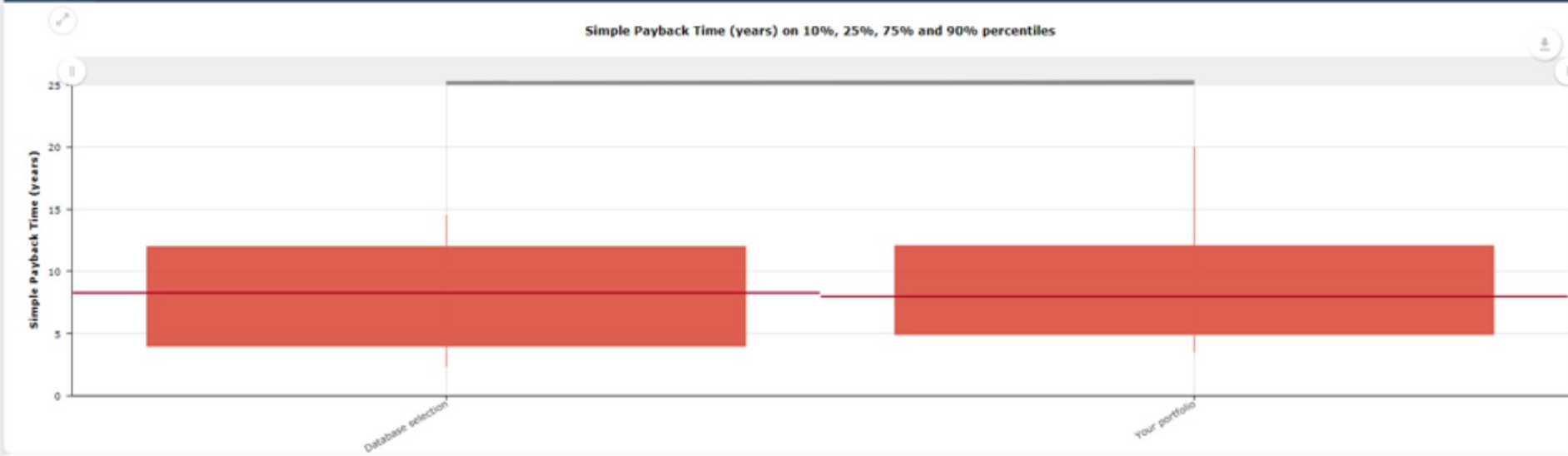
Verification

Discount rate for avoidance cost
0%

DEEP PROJECTS SELECTED
35
Clear all filters ✕

YOUR PORTFOLIO
15
Select projects

Benchmark



Benchmark results

	Projects	Percentile 90%	Percentile 75%	Median	Percentile 25%	Percentile 10%	Average	Standard Deviation	Observations
1	Database selection	14,55	11,99	8,3	4	2,3	8,42	5,29	35
2	Your portfolio	19,99	12,05	7,96	4,9	3,5	10,62	9,03	10

Q&A SESSION