



EEFIG
ENERGY EFFICIENCY
FINANCIAL INSTITUTIONS GROUP

EEFIG Working Group on “Collecting and monitoring data on energy efficiency investments and financing across EU Member States and targeted economic sectors”

Presentation of main results and conclusions

23 February 2023



Scope of the EEFIG SR15 Working Group: Key questions, challenges and approach

1 Key questions	2 Challenges	3 Approach
<ul style="list-style-type: none"> • What are the the relevant datasets to monitor energy efficiency investments and financing across EU Member States and in targeted economic sectors (residential buildings, SMEs, and industry)? • What is the best method to capture, process, and organize data on energy efficiency investments and financing over time and across EU Member States and targeted economic sectors? 	<ul style="list-style-type: none"> • Highly diverse universe of methodologies and data sources • Available data focusses on diverse energy efficiency and investment related aspects, in Europe as well as globally • Near complete lack of relevant, coherent and EU-level data, i.e. tracking efficiency investments • High efforts required to align and harmonize different datasets • This results in high uncertainties in these results 	<ul style="list-style-type: none"> • To disentangle this complexity, the full expertise available at EEFIG is required. • EEFIG WG brought together 23 selected and qualifying members from 18 institutions along with 41 expert observers. • Deliberations were facilitated by expert presentations and interviews, an expert survey, and the collection of a WG library.

Scope of the EFIG SR15 Working Group: Main features of the report



1	Data sources	<ul style="list-style-type: none">• 52 data sources were analysed that provide insights into energy efficiency or specific investment data.• Data sets cover primarily residential buildings, SMEs and industry sectors.
2	Methodology	<ul style="list-style-type: none">• Review of the two main existing methodologies used to measure energy efficiency investments• Including top-down, involving aggregation and estimates/modelling, and bottom-up, relying more on large volumes of empirical data.
3	Benchmarks	<ul style="list-style-type: none">• In-depth examination of current efforts to track energy efficiency investments by leading organisations, including for example Eurostat, the European Investment Bank (EIB), the International Energy Agency (IEA), and Odysee-Mure.
4	Innovation & AI	<ul style="list-style-type: none">• Key innovations in data collection and analysis were discussed e.g. based on web and machine learning or artificial intelligence (AI) applications• including examples from SkenData in Germany and Sociedad de Tasacion in Spain.
5	Barriers	<ul style="list-style-type: none">• An examination of barriers and obstacles to analysing multiple and disparate datasets• Including an example (EuroDat) of how to resolve these issues to create primary keys for data matching.

The SR15 WG performed a data mapping exercise particularly considering European funded projects and initiatives

Approach:

- **Assessment** performed of potential data sources and detailed examination of a representative sub-set (see table).
- **Tremendous complexity** of existing data sources which makes it necessary to structure the WG's process more consistently and find a common frame of reference for the assessment.

Data sources	Number
Associations	4
Dedicated funds	1
Energy agencies	7
EU projects	7
Financial data providers	1
Financial Institutions	3
International organisations	9
Market research companies	2
Media	2
Ministries	7
NGOs/think tanks	1
Research institutes & consultancies	8
	52

Major downsides observed:

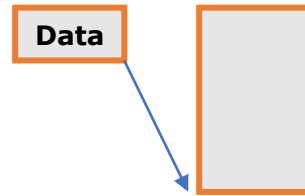
- **Diversity of data sources and formats** which means that tracking energy efficiency investments effectively requires a substantial 'manual' effort
- Several of the data sources identified **require commercial and/or data sharing agreements** that need to be negotiated, paid for and periodically renewed.

Additionally, the SR15 WG assessed various methodologies underlying the data collections, with two major types being identified

- **Top-down approaches**

involve high-level data points which provide an estimate – after transformation - of the investments at a certain level of aggregation.

Top-down

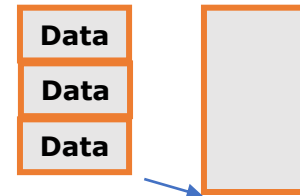


- Examples include estimation methods used by the **IEA** or the **EIB's** industry and SME survey (EIBIS).

- Typically involve **global assumptions and scaling factors**, giving rise to the downsides.

- + Less effort for data collection
- + More adaptable
- Less transparent
- Many assumptions
- Higher estimation error

Bottom-up



- High effort for data collection
- Less adaptable
- + More transparent
- + More data based
- + Low estimation error

- **Bottom-up approaches**

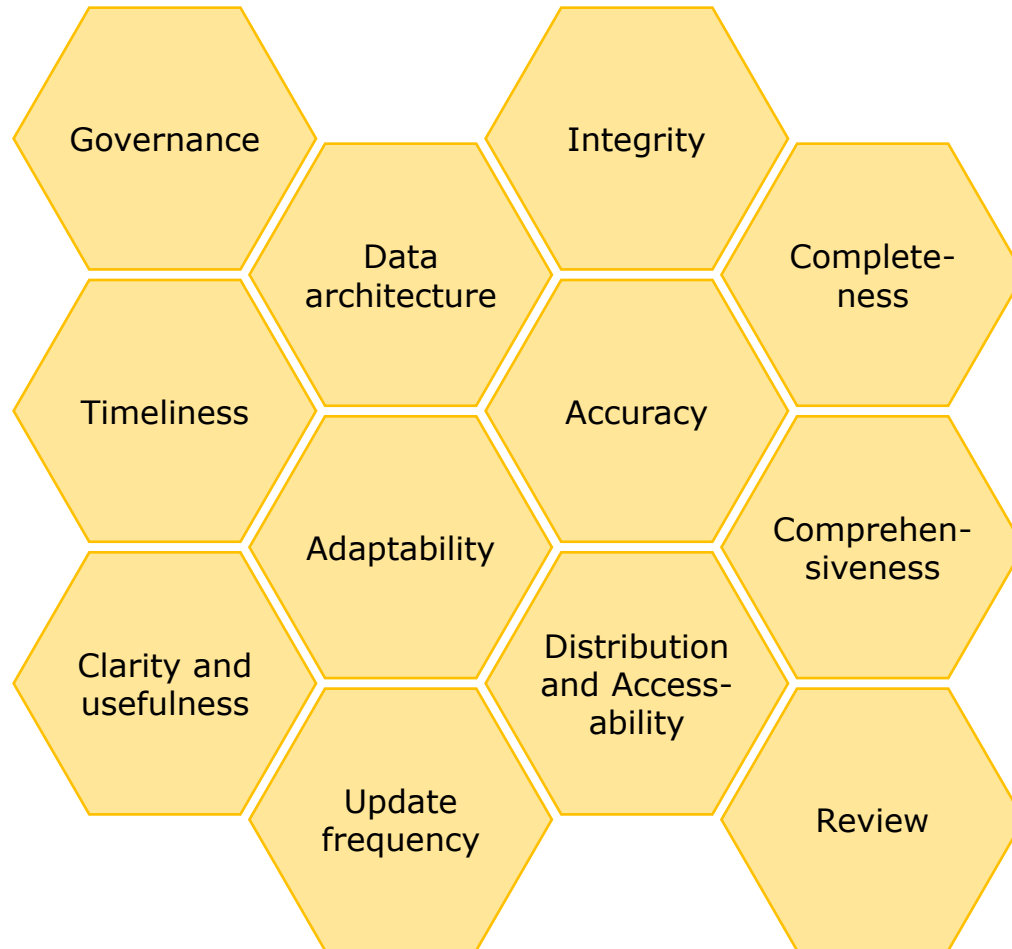
in contrast, aim to build a comprehensive dataset comprising the desired information on a granular level and then sum these up to create the dataset.

- Such an approach is used to compile EU-wide databases like EEFIG's **DEEP** or **EN-TRACK**.

- Major downside here is the **large effort for data collection and limited sample size**.

The SR15 WG developed a specific approach to assess data sources, derived from the well-established BCBS 239 of the Basel committee

- Defining **criteria for sound data collection and monitoring** is not straightforward, especially when the data is imperfect, and the frame is complex and dynamic.
- Within the financial industry the common frame of reference for assessing the soundness of data flows within a financial institution is provided by the **Basel Committee on Banking Super-vision (BCBS) in its paper number 239**.

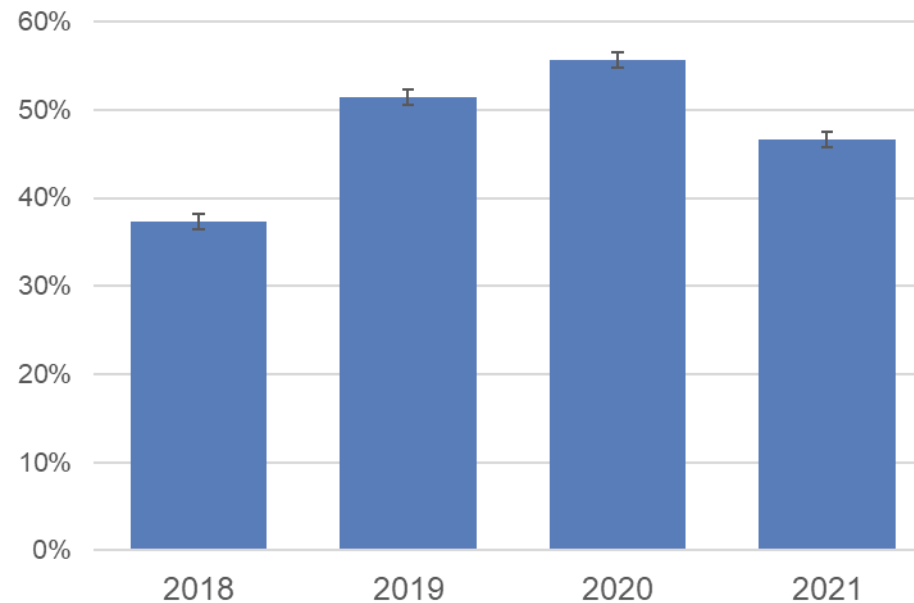


- BCBS 239 describes **12 principles** for the sound aggregation of risk data in banks.
- Due to its **principle-based nature**, this document describes a set of best practices for data collection and aggregation, which can be applied beyond the financial industry.
- The 12 principles have been **adapted to the needs of this Working Group's task**, i.e. to the task of tracking energy efficiency investments.

Example 1: After screening data sources, the WG examined nine data sources in more detail, for example, the EIB Investment Survey

- The European Investment Bank Investment Survey (EIBIS) is a survey that has been developed by the European Investment Bank (EIB) to **assess and monitor** a variety of issues relevant for European business, **including investments in energy efficiency**.
- It was established to track non-financial **corporate investment** activities in the 27 EU Member States, the UK and, since 2019, the US as a benchmark.

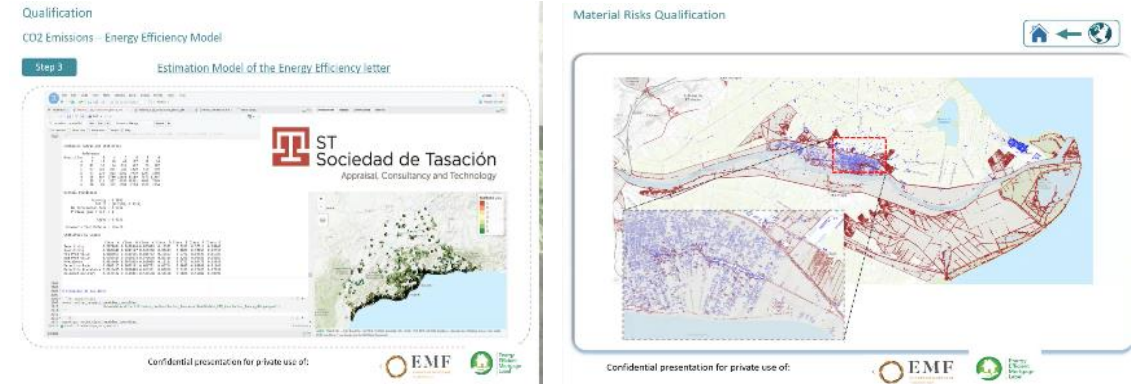
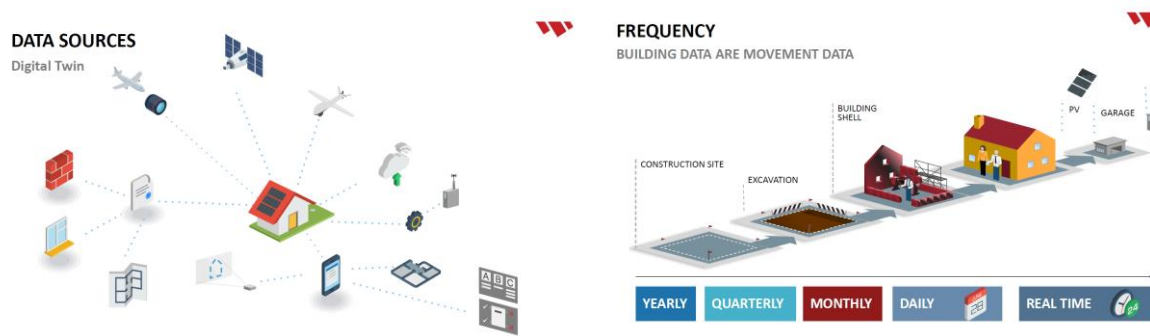
Survey question: What proportion of the total investment was primarily for measures to improve energy efficiency in your organization?



x total investment = investment amount

- EIBIS is a powerful and **established tool** to use sampled data to estimate energy efficiency investments of companies in the EU.
- Being run by a major European institution, the EIB, the EIBIS is a tool **directly accessible** to European authorities.
- Its unified methodology across Member States provides a sound and **consistent picture** across all Member States.

Example 2: European technology start-ups are providing innovative solutions for overcoming the barriers to data in the building sector



- **SkenData** is a German technology company providing valuation, land tax, and energy services in the German and Austrian market. The technology is based on creating digital twins for the whole building stock of a country and allows for identifying buildings individually and to calculate their ESG KPIs including energy efficiency properties, and additionally, an individual estimate renovation roadmap.

- As a response to the increasing sustainability reporting requirements on European financial institutions, the Spanish valuation company **Sociedad de Tasación** (ST) - with 36 years of experience in real estate - has developed an AI-machine learning data analytics tool to estimate the energy performance and climate risks of mortgage portfolios.

A survey of the Working Group members provided a consensus assessment of data sources and approaches

	Industry data	SME data	Building data	Data partner for EC
Energy agencies	3,3	3,1	3,3	3,9
EU Member State ministries	3,6	3,3	3,4	3,7
Multilaterals/IFIs/Development Banks	3,3	2,7	3,0	3,5
Lenders/FIs	3,0	3,1	3,3	3,3
Machine learning/AI	2,6	2,4	3,3	3,3
International organisations	2,8	2,9	2,4	3,3
Regional and municipal authorities	2,3	2,4	3,3	3,2
Research institutes & consultancies	3,1	3,1	3,1	3,1
EU projects	2,8	2,8	2,9	3,1
Associations	3,4	2,6	2,6	3,0
NGOs/think tanks	2,3	2,3	2,7	2,9
Market research companies	2,9	2,6	2,3	2,6
Media	1,6	1,1	1,3	1,3

Data sources considered	BCBS criteria												Overall assessment
	Governance	Data and IT infrastructure	Accuracy and Integrity	Completeness	Timeliness	Adaptability	Accuracy	Comprehensiveness	Clarity and usefulness	Frequency	Distribution and accessibility	Review	
EIB Investment Survey	3,2	3,0	3,3	3,5	3,3	3,3	3,2	3,0	3,3	3,3	2,6	3,3	3,2
<u>SkenData</u>	2,5	3,8	3,0	2,8	4,0	3,8	2,8	2,8	3,8	3,8	2,3	1,8	3,1
<u>Sociedad de Tasacion</u>	2,5	3,8	3,0	2,8	4,0	3,8	2,8	2,8	3,8	3,8	2,3	1,8	3,1
Eurostat	3,5	3,4	3,0	2,9	2,6	2,0	3,1	2,7	2,8	2,6	3,6	3,5	3,0
IEA	3,0	2,8	2,4	2,8	3,1	3,0	2,6	3,0	3,3	3,1	2,6	3,0	2,9
<u>Odyssee-Mure</u>	2,9	3,0	2,7	2,9	2,9	2,3	3,1	2,7	3,1	2,7	2,6	3,2	2,8
DEEP	3,0	3,4	3,2	2,6	2,4	2,8	3,0	2,4	2,8	2,4	3,0	3,0	2,8
<u>Operat</u>	2,7	3,0	3,3	2,3	2,7	2,3	3,0	2,3	2,7	2,7	2,7	2,7	2,7

Assessment of identified data partners (left) and datasets (right) by survey respondents. The colours indicate positive (green), medium (amber) or less positive assessment (red) of how well these data partners and sources would fit to the mission of the tracking investments into energy efficiency.

Based on its analyses, EEFIG's SR15 Working Group on data has drawn the following conclusions:

1

Current data is not fit-for-purpose

There is no single data set identified which would by itself support the EC's effort to track and monitor energy efficiency investments across sectors and member states.

2

Current methodologies are not satisfactory for EC

None of the methodologies assessed by the Working Group fulfils 100% of all the requirements of the EU Commission.

3

A good governance structure must be developed

In terms of governance models, and while there is no 1:1 fit to the needs of the Commission, there are aspects of several which can be combined within Eurostat for improved policy making

EEFIG's SR15 Working Group recommends to perform a step-by-step build-up of capabilities on the European level

1

Short
term

An extended EIB investment survey can provide a short-term starting point for the European Commission for policy making and identifying routes towards a future developments of a long-term data collection

2

Medium
term

Defining the organisational setup is critical e.g. Which unit is going to be responsible for the new data collection? In which organisation should this unit be anchored? Who are the most important stakeholders?

3

Long
term

Once methodology and data requirements have been finalised, a legislative process needs to be initiated with the objective to finally make the new data requirements not only consistent but also enforceable across Members States.

THANK YOU!