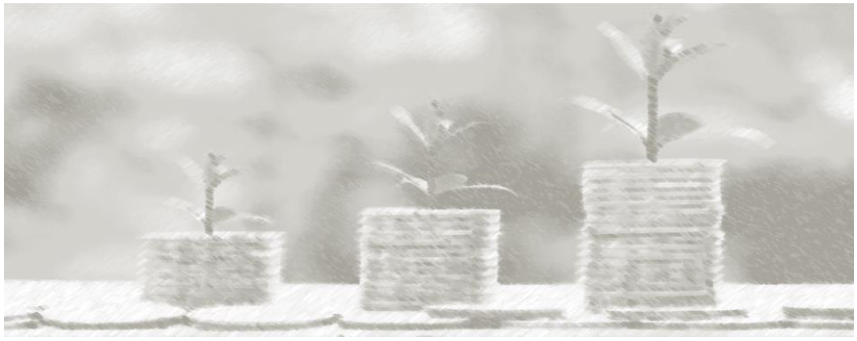
TRIPLE-A
BRIEFING NOTES



TRIPLE-A WEB-BASED DATABASE: BRIDGING THE TRANSPARENCY GAP IN ENERGY EFFICIENCY FINANCING

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SUMMARY

In order to make Energy Efficiency Investments (EEIs) more transparent, Triple-A offers a Web-Based Database as an open-source online tool for a holistic reporting of the most significant aspects on Energy Efficiency Financing (EEF). The scope of the Web-Based Database is to set the ground for upscaling EEIs via collecting, storing, reporting and sharing data that serve an added value to relevant stakeholders and actors in EEF, such as financing bodies (e.g., investors), project developers (e.g., ESCOs), policy makers and researchers. Up to date, the regions covered under this database are the eight Triple-A case study countries, namely Czech Republic, Germany, Greece, Italy, Lithuania, The Netherlands, Republic of Bulgaria, and Spain.

The 5th Triple-A Briefing Note presents the data, specifications and functionalities of the Triple-A Web-based Database, as well as how these support each involved actor in EEF and contribute towards mainstreaming EEIs. Besides, the key insights that can be extracted from the information included in the Triple-A Web-based Database and enrich relevant stakeholders, are presented.

KEYWORDS

Knowledge Database; Energy Efficiency Financing; Stakeholders; Investors; Project Developers; Policy Makers; Decision Making

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1 Introduction

Triple-A supports capital providers, i.e., financiers and investors, in finding an attractive project idea that merits attention, providing, in parallel, a better understanding of the project's framework to those looking for capital (e.g., project developers).

In this effort, a knowledge-based platform on the basic aspects of Energy Efficiency Financing (EEF), such as entailed risks and mitigation strategies, is considered as critical to relevant stakeholders; while the country features should be taken into consideration to provide a cross-country analysis. On the one hand, project developers are supported to deliver attractive Energy Efficiency Investments (EEIs) proposals by grasping a deeper technical knowledge. On the other hand, financiers, bankers and investors are provided with an easy access to information concerning EEIs, such as their risk nature and financial performance, in order to facilitate their decision-making related to the implementation of EE projects.

To this end, Triple-A Web-based Database on EEF[1] has been developed in order to provide advanced functionalities and crucial information to relevant stakeholders. More particularly, it is a visual representation of the most important aspects on EEF, including the risks that could endanger the successful implementation of an EE project, factors that might reduce profitability, strategies that could mitigate risks, preferences of investors on EEIs, financial performance of EE projects, models and instruments usually used to finance EE projects and the performance of case study countries in terms of Sustainable Development Goals (SDG)[2].

Triple-A Web-based Database is an online open-source interactive application that incorporates the results from the status quo analysis per case-study country within the framework of the Triple-A project. The data reported within its context are based on agencies and other open-access repositories, and as a versatile instrument, Triple-A Web-based Database is updated on a regular basis, taking into account stakeholders' feedback either in the form of content's update or new functionalities.

This Briefing Note describes the functionalities and data included in the Triple-A Web-based Database, along with the added value that could be produced per key target group of Triple-A and the key insights that could be derived from the database's information. As a result, this document proves the necessity of knowledge-based information in an interoperable way to mainstream EEIs.

2 Triple-A Web-Based Database Content

Triple-A Web-based Database incorporates the results of the Triple-A methodology about the basic aspects on EEF. It is based on data gathering from other relevant databases (e.g., De-risking Energy Efficiency Platform (DEEP)[3]), information from project developers (i.e., risk calculation questionnaire[4]) and outcomes from the Triple-A stakeholders consultation processes (questionnaires, bilateral meetings, events, etc.[5]).

Particularly, the database includes the following aspects (Figure 1):

- The **country-specific risks** that endangers the successful implementation of an EE project, exploiting data from global organisations (e.g., Regulatory Indicators for Sustainable Energy (RISE)[6]) and credit

[1] Available online at: https://database.aaa-h2020.eu/

[2] Triple-A (2021). Updated Web-Based Database on Energy Efficiency Financing and Supporting Documentation, Deliverable 3.5, Horizon2020 Triple-A project, No. 846569.

[3] Available online at: http://deep.eefig.eu

[4] Available online at: https://toolbox.aaa-h2020.eu/assessHome/

[5] Triple-A (2021). Triple-A Survey on Investors Preferences on Energy Efficiency Investments, Briefing Note No.3, Horizon2020 Triple-A project, No. 846569.

[6] Available online at: https://rise.esmap.org/about-us

rating agencies (e.g., Standard & Poor's (S&Ps)[7]; "***Country Risks***" menu).

- The **risk of failure** of various EE projects, indicating the minimum, maximum, and average values that it could take ("***Energy Efficiency Projects Risk***" menu).
- The proposed **risk mitigation strategies** per risk identified by the Triple-A methodology ("***Risk Mitigation Strategies***" menu).
- The projected **financial performance** of various EE projects as a function of the investment's holding period[8] ("***IRR: Project's Perspective***" menu).
- The **preferences of investors** on EEIs in terms of **minimum required return** and **holding period**, considering all the main investor profiles in EEF ("***IRR: Investor's Perspective***" menu).
- The **financing instruments** that are usually used to finance EE projects, along with the **financial models** that combine them in innovative ways ("***Financing Instruments***" **&** "***Financial Models***" menus).
- The necessity of boosting EE per case study country, with respect to their progress in terms of **SDG** ("***Sustainable Development Goals***" menu)).

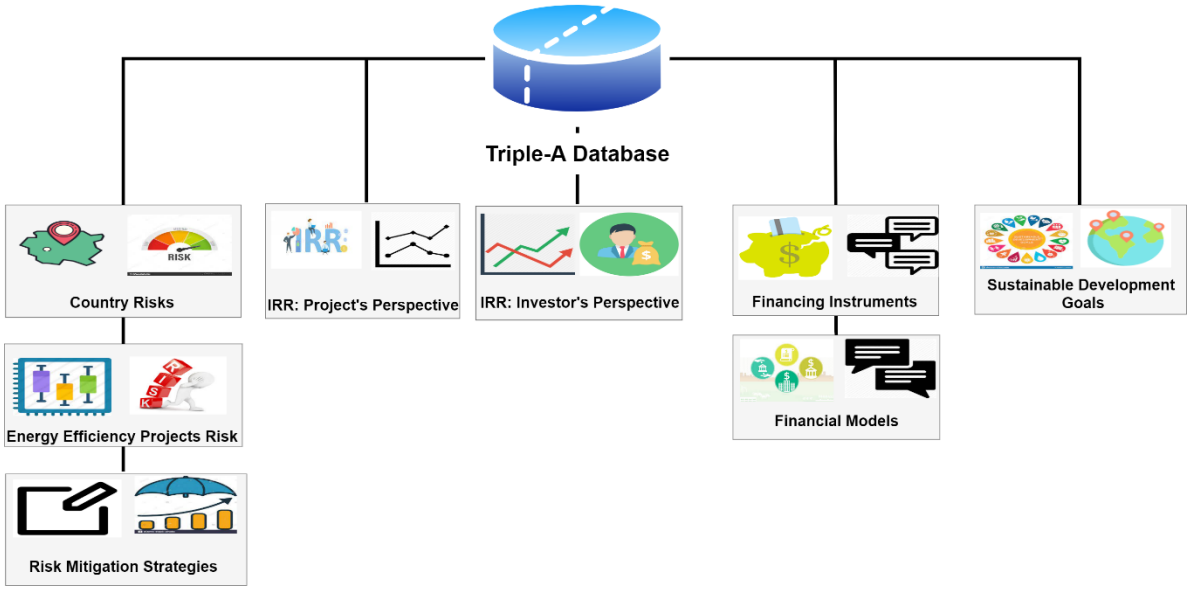

Figure 1. Triple-A Web-based Database menus

[7] Available online at: https://www.spglobal.com/ratings/en/

[8] Holding period is the time (years) that the investors accept to hold their money on an investment before earning the required return.

3 Added Value from different perspectives

3.1 Data Dimension & Functionalities

Triple-A Web-based Database contains information with respect to a wide range of countries and EE sectors, thus providing a cross-country and sectoral analysis to its users.

As regards the countries included up to date in the database, these are the eight Triple-A case study countries. These countries have been selected in view of incorporating countries of diverse characteristics, based on the following features: a leading European economy (**Germany**), an innovation front-runner in energy (**The Netherlands**), a weak economy that went through one of the longest and most severe recessions (**Greece**), an economy with slow economic recovery (**Italy**), a diversified economy with a strategic geographical location having some of the largest European firms (**Spain**), a country that has experienced one of the fastest economic recoveries in Europe (**Lithuania**), a progressing country slightly moving towards low carbon development (**Czech Republic**), and a country, recovering from a slow transition to a market economy, with growing regional strategic role and significant ambition towards EU processes (**Republic of Bulgaria**). All country related data reported by the Triple-A Database are classified per country, giving to users the chance of getting useful insights.

The Triple-A Database includes information data from different sectors. These are the main sectors of the EU Taxonomy, where each of these sectors is connected to several economic activities (Figure 2). Similarly, to the country analysis, the sector specific data are reported in reference to the EE sector under examination.

Moreover, Triple-A Web-Based Database includes all the main investor profiles in EEF, namely ***"Retail investor"***, ***"Institutional investor"***, ***"Impact investor"***, ***"ESCO"***, and ***"Fund"***.

It should be noted that Triple-A Web-based Database will be enhanced including more elements from the related components (e.g., countries) in order to depict the up-to-date scene in EEF.

Apart from the multidimensionality of the reported data that described above, Triple-A Web-based Database provides advanced functionalities to its users such as interactive maps and graphs. These functionalities substantially facilitate the comparison between reported countries and sectors. In addition, the open-source nature of the database enables its users to freely navigate themselves to its interface without any requirement, whereas the data reported within its context can be download in an excel format. Therefore, they can be easily stored, shared and analysed.

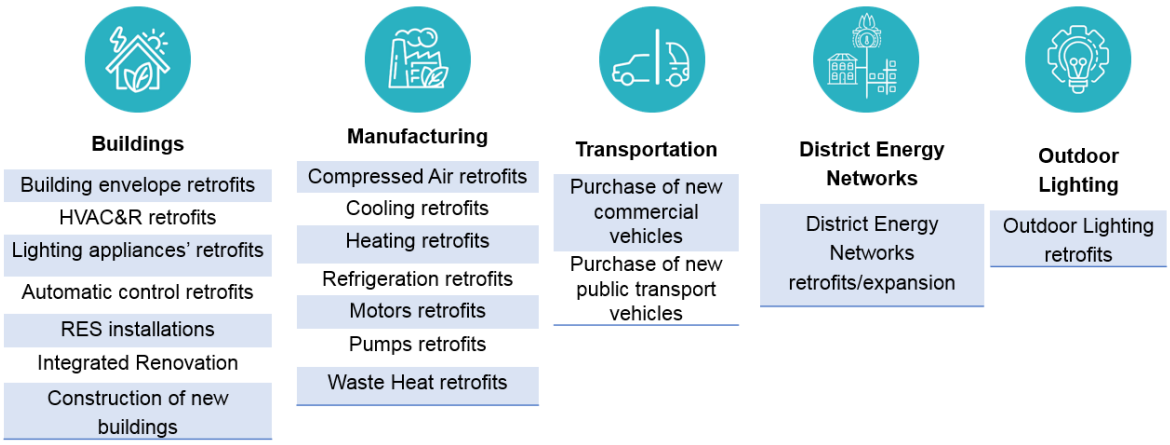

Figure 2. Triple-A Web-based Database sectors and economic activities

3.2 Stakeholders Capabilities Enhancement

In view of upscaling EEIs, it is of paramount importance that the key stakeholders that participate in the entire EEIs value chain gain access to the required knowledge towards taking reasoned decisions. In this procedure, they may be the ones that provide this knowledge to other relevant actors in EEF.

The key stakeholders in EEF comprise investors, project developers, policy makers and researchers. These profiles could derive significant added value from the information included in the Triple-A Web-based Database, which can be categorized per main target group as follows.

Investors

Investors constitute the key target group of Triple-A and the one that the project outcomes serve the most. Triple-A Web-based Database has been designed with a special focus on facilitating their decision-making and participation in EEF.

First, Triple-A Web-Based Database provides the opportunity to investors to get significant insights about the case study countries' characteristics, helping them substantially on the selection of the country of implementation for capital investments. In that regard, investors could harvest information on the case study countries' **macroeconomic risk, energy market's volatility** and **quality of governmental policies** on EE implementation.

Moreover, by inspecting the **risk value ranges** of each EE project type covered by the Triple-A Web-based Database, a better understanding is provided about their risk nature and the potential level of alleviation of their entailed risk.

Focusing on the **mitigation** of the entailed risk and the incorporation of appropriate measures, investors can take advantage of a detailed analysis via the Triple-A Web-Based Database. As a result, they could make better evaluations of EE projects, considering if **mitigation strategies** have been adopted within their context or not.

Finally, insights from **financial performance** of various EE project types, through the demonstration of their project IRR curves[9] and available **financial models** are provided. Investors have the opportunity via Triple-A Web-Based Database's functionalities, to identify the **optimal holding period** per case by inspecting the turning point of the curves[10] and combine financing instruments in view of **maximising their profits**.

Project developers

Project developers comprise another key target group of Triple-A, by representing the other side of an EE project.

Project developers could leverage information on the **risk nature per EE project**, something that could lead to the analysis of the necessity of adopting appropriate mitigation measures. Besides, the projected performance of each project type could serve as evidence of the **EEIs profitability potential**. As such, it could be used by them to persuade capital providers to invest their money in their projects, thus performing better proposals to investors.

Moreover, Triple-A Web-Based Database provides project developers with the opportunity to inspect the minimum required returns by investors. Therefore, they could identify the minimum performance that the projects they are involved in must achieve to be considered as eligible per investor profile. This insight works as a **benchmark of the EE projects' performance**.

In this way, project developers could benefit in order to ensure the smooth operation of EE projects which consequently consists of a strong proof of evidence to persuade investors and capital providers in general. Finally, a whole **range of financing means** is provided.

[9] IRR curves depict how the project IRRs vary over the different time horizons of the investments.

[10] The turning point of the project IRR curves is the point from which the projects' performance starts to improve at a negligible rate for an additional year of investment.

Policy Makers

Policy makers, in spite of not being directly involved in EEF, could play an important role in upscaling EEIs by taking vital decisions, directly affecting EEIs implementation, such as the formulation of tax and regulatory policies.

Triple-A Web-Based Database includes information on the necessity of boosting EE implementation in each case study country and EE sector. By evaluating the progress of case study countries in terms of **SDG**, policy makers could ensure the quality of their decision making in order to get **higher benefits**. To this end, a more efficient prioritisation of investments could be performed focusing on social aspects in view of a **fair energy transition**[11].

Researchers/Academia

Apart from upscaling EEF, there is the need for mainstreaming EEF as well. Researcher and academia in general could enhance these actions. By developing appropriate methodological frameworks for evaluating and benchmarking EEIs, they work towards the **identification and categorisation of EE attractive project ideas** for the key actors of EEF (investors and project developers).

Triple-A Web-Based Database offers a variety of information per case study country, such as the risk factors, project IRR curves and EE necessity, which could be used for relevant methodologies development.

Key Insights

Country Risk

Greece presents the largest uncertainties, while ***The Netherlands*** composes the most attractive place for investors due to the stable environment that provides.

Financial Performance

Industrial sector's projects ***outperform*** in terms of financial performance the ones of the ***Buildings*** sector.

Project Types Riskiness

"Outdoor lighting retrofits" and ***"Purchase of new public transport vehicles"*** compose the riskiest EE project types. Focusing on the ***Buildings*** sector, the ***"Construction of a new building"*** constitutes the riskiest project type.

Investors Preferences

Retail investors could be considered as more ***risk-averse***, ***Funds*** as more willing ***risk-takers*** and ***ESCOs***, ***Institutional*** and ***Impact investors*** as more ***risk-neutral***.

Energy Efficiency Necessity

Lithuania encompasses the highest necessity for boosting EE in the ***Industrial*** sector, while ***Republic of Bulgaria*** lies at the other end of the spectrum, presenting the lowest one.

DATABASE
on Energy Efficiency Financing

[11] Newell, P.; Mulvaney, D. The political economy of the 'just transition'. The Geographical Journal, 2013, 179, 132–140.

4 Conclusions

Triple-A Web-Based Database presents in an interactive way the key findings of the Triple-A methodology across the different case study countries and EE sectors. Thus, it generates added value in the whole value chain of EEF.

The added value points produced per target group can be summarised as follows.

Investors

- Selection of the **country of implementation** for EEIs.
- Understanding of EE projects' **risk nature**.
- Effective **EEIs evaluations**.
- Evaluation of EE projects' **financial performance** with respect to **investment horizon**.
- Identification of the **optimal holding period**.
- Identification of **innovative ways** of **combining financing instruments**.

Project developers

- Identification of the **de-risking potential** of various EEIs.
- Identification of **risk mitigation strategies**.
- **Evidence** acquisition of EE projects' **profitability potential**.
- Identification of the **minimum required performance** to be achieved for attracting investors.
- Identification of the **means of financing** for their projects.

Policy makers

- Identification of the **countries** and EE **sectors** that need to be **prioritized**.

Researchers

- Employment of the **risk assessment framework** adopted by the Triple-A methodology.
- **Inspiration** for performing further **research**.