



INTEGRATION OF TWO STANDARDISED APPROACHES FOR TRANSPARENCY IMPROVING OF ENERGY EFFICIENCY INVESTMENTS AND CONFIDENCE BETWEEN OWNER AND INVESTOR IN BUILDING SECTOR

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SUMMARY

This briefing focuses on the potential of integrating two standardised approaches Triple-A and the Investor Confidence Project (ICP), so that the implementation of an already identified Triple-A project will bring maximum benefits, taking advantage of the strengths of both standardised approaches.

In other words, a project identified as Triple-A project in its conceptual phase of development must be the same during the other phases of its life cycle (implementation, operation and maintenance of building and monitoring and verification of the achieved energy savings). This could provide additional clarity and transparency on how to invest in Energy Efficiency (EE) projects and provide additional confidence for potential investors.

Indicative EE projects are presented summarizing lessons learnt from the investment implementation.

KEYWORDS

Energy Efficiency Investments; Standardization; Building Renovation projects

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1 Introduction to ICP and Triple-A

The lessons learned from the experience gained in financing EE projects in the building sector, lead to the conclusion that the use of standardised methods for pre-selection, as well as standardised procedures for project implementation, operation of buildings and continuous monitoring of results are essential not only for reducing the risks of EE projects, but also set the basis for increasing the confidence of the investors.

Experience gained in using Investor Confidence Project (ICP) protocols showed that their strongest features are related to certain phases of the life cycle of EE projects. The **ICP protocols** are intended to serve as minimum requirements for investment quality analysis and as **best practices for the operation, maintenance and monitoring of the building installations and for the measurement and verification of energy savings**. In fact, the ICP Protocols are a system of clear and transparent procedures, the precise implementation of which contributes to the achievement of the EE objectives set in the investment.

On the other hand, the recently developed **Triple-A approach focuses on to the quality of the upcoming EE investment in its conceptual development phase**. The EE projects assessment starts from the energy savings calculation. An additional advantage of this approach is that an in-depth assessment of pre-selected significant risks is made and specific strategies are proposed to eliminate or significantly reduce them. Another significant advantage of the Triple-A approach is the preliminary assessment of a number of Key Performance Indicators (KPIs) such as financial, socio-economic and environmental taking into account the EU Taxonomy criteria. In this way, a clear idea of the proposed investment potential is given so as to promote sustainable growth and at the same time whether it has the capacity to meet its financial commitments by achieving the energy saving goals.

Important similarities stand out between the two methodologies:

- Minimizing the risks in the implementation of EE project;
- Making EE investments sufficiently transparent and understandable for potential investors;
- Increasing the confidence of potential investors.

The essential differences between the two standardised methodologies are **the project life cycle phase**, on which **the specific activities for achieving the set goals are emphasized**.

In particular, ICP protocols encourage the use of best practices and procedures in:

- Commissioning;
- Maintenance and monitoring of building and;
- Measurement and verification of the achieved results.

The Triple-A methodology focuses on the assessment of the proposed investment in the conceptual phase by:

- Making an in-depth risk assessment and proposing strategies for risks elimination;
- Provides a comprehensive analysis of the investment potential to promote sustainable growth and at the same time;
- Investigates whether it has the necessary capacity to meet its financial commitments by achieving the set goals for energy savings.

Each of the methodologies is focused on different phases of the project cycle (the conceptual development phase for Triple-A and respectively the implementation and monitoring phase of the ICP). This determines their characteristics and, accordingly, gives specific advantages to one or the other.

Table: Comparative analysis of the approaches in ICP and Triple A to achieve the Energy Efficiency objectives according to the phases of the project life cycle

EE Project Life Cycle / Requirements	ICP	Triple-A
Conceptual Phase / Initiation of EE investment intention		
Energy audit report	x	x
Energy saving calculations	x	x
Baselining	x	x
Baseline core requirements	x	x
Identifying Energy Conservation Measures	x	x
Investment costs estimation	x	x
Risk analysis and proposed mitigation strategies		x
Compliance of the calculated energy savings with the requirements of the EU Taxonomy.		x
Evaluation of KPIs (Financial, Social-economic, Environmental)		x
Informed decision on the financing method for EE project implementation		x
Implementation phase		
Design, construction, and verification plans	x	
Operational performance verification plan	x	
Operations, maintenance and monitoring		
Operation, maintenance and monitoring plan	x	
Measurement and verification of energy saving results		
Measurement and Verification plan	x	

Comparing the two standardised methodologies, it can be noted that the combination of both covers the entire life cycle of EE projects. Their integration can lead to significant benefits for the main players of the

EE investments (project owner - funding institution).

2 Lessons learnt from EE projects

There are many factors that determine whether an EE project for a building will be considered successful or unsuccessful. In addition to the identified EE measures and the agreement between the interested parties (owner and investor), the exact planning of the implementation activities, the appropriate technologies, as well as the provision of proper operation and maintenance of the building installations are of great importance.

Specific examples in this regard are sufficiently illustrative.

An EE project in a large administrative building in Gabrovo district, with an investment value of over 620000 €, with integrated ESMS, including the installation of a photovoltaic system (with estimated energy savings of more than 70% of energy consumed before the project implementation), was almost **failed due to the lack of a preliminary analysis of risks** such as administrative barriers to the connection of the photovoltaic system to the national energy network, as well as the lack of a preliminary analysis of the communication channels between the individual consumers of energy within the building itself. Solving the problems was related to the loss of valuable time, additional costs and broken trust between the main players (the owner of the building and NTEF as a financing institution). In this example, the existence of an established standardised methodology for the preliminary assessment of the investment intention, such as Triple-A, would be useful at the beginning of the negotiations. Timely identification of risks, such as those related with the energy market and its regulation or those related with communication channels between the key players could lead to:

- Joint adequate action to reduce the its effects Proper planning;
- Saving valuable time and financial resources;
- Enhanced trust between key players

Given the complex nature of EE project, the additional inclusion of clear procedures for

the operation and maintenance of the building and the careful monitoring of energy consumption will certainly help the smooth and rapid achievement of the envisaged energy savings.



Source: NTEF archives, Project name "Investment for energy efficiency in an administrative building, city of Gabrovo"



Source: NTEF archives, Project name "Investment for energy efficiency in an administrative building, city of Gabrovo"

Another example of the importance of using standardised methodologies is the negative experience, occurring by inadequate energy audits and consequently inappropriately selected technologies. In a school building in region of Sofia the implementation of an energy saving measure "Replacement of internal heating system and diesel boilers" was included. The problem arisen was related to the fact that the audit report provided replacement of old boilers with similar ones with low efficiency without replacement of the fuel base. This resulted to a new energy audit, and consequently to a price increase of the investment costs and loss of valuable time. It would have been more efficient and faster to identify the problem following standardised methodologies like Triple-A. The assessment of energy savings would lead to a faster response, and the inclusion of ICP protocols for monitoring energy consumption could significantly help to achieve the set energy savings,

A good example of benefiting from the application of the standardised approach is a recently implemented project with the financial participation of NTEF and through the implementation of ICP protocols for public buildings. The investment reached over 500000 € and included the implementation of a set of EE measures in the large school building in the city of Sofia, Lyulin district. The site was selected after a thorough analysis of energy audit to confirm that the proposed technical solutions meet the requirements for achieving class A energy advancements for the building after the implementation of all EE measures. Immediately after the completion of the construction works, the implementation of clearly defined procedures for operation and monitoring of the facilities and systems in the building began. The procedures cover the internal heating installation with the necessary automation, the heating and hot water boilers with optimized automation and system for monitoring the consumed energy, as well as the automated building lighting and the system for control of internal microclimate. Monitoring results are reported on a weekly basis. This time interval is currently sufficient for the application of precise corrective actions when necessary.

In this case, integrating the Triple-A methodology could shorten the decision-making time significantly and add additional confidence by proving that efforts are worthwhile.

Before renovation



Source: NTEF archives, Project name: "Improving the energy efficiency of 79 Indira Gandhi High School, Lyulin district"

After renovation



Source: NTEF archives, Project name: "Improving the energy efficiency of 79 Indira Gandhi High School, Lyulin district"

3 Conclusions

The abovementioned examples and experience gained by them showed that the combined use of two or more standardised approaches greatly facilitate the financing decision-making and the optimal management of the investment, as well as the achievement of the set goals. This does not referring only on energy savings, but also on financial commitments and commitments to achieve specific environmental indicators.

The integration of the ICP and Triple-A standardised methodologies seems very suitable for complex EE projects and especially for those where the integration of complete building management systems is required.

The integration of the two models (ICP and Triple-A) makes it possible to cover a large part of the project life cycle. This contributes to:

- Bringing under control the impact of important risks for the project from its initial phase of development;
- The timely implementation of appropriate strategies and corrective actions from the initial phase of its development to the

moment when the achieved results are monitored.

- Enhancing the transparency of the project in terms of important features such as energy savings, recognizable technical solutions,
- Ensuring the implementation of the set indicators (for energy efficiency, financial, social, environmental)
- Supports the implementation of complex and innovative technical solutions.
- Strengthens trust between stakeholders;
- Facilitates informed decision – making and
- Opens opportunities for alternative financial solutions.

This makes the project more predictable, easy to implement and ensures the implementation of the set goals and commitments.

It is suggested that the maximum benefits of combining standardised methodologies can be derived from projects financed through loans, green bonds or in the provision of funds for the implementation of public EE projects where essential are the controls over the spending of public funds and at the same time achieving maximum results.

TRIPLE-A IN BRIEF

Triple-A -Enhancing at an Early Stage the Investment Value Chain of Energy Efficiency Projects - is an EU-funded research project under the Horizon 2020 programme, aiming to assist financial institutions increase their deployment of capital in energy efficiency, making investments more transparent.

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