

Introduction to Panel 5

Business models and finance in the age of digitalisation

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Introduction

The seminal 2015 study “Energy Efficiency – the first fuel for the EU Economy. How to drive new finance for energy efficiency investments”, highlighted both barriers and opportunities for increased energy efficiency financing. The report, which was developed by the Energy Efficiency Financial Institutions Group, an expert group co-convened by the European Commission, DG ENER and UNEP FI, has had key influence on subsequent EU policy in the area and has led to the development of targeted tools such as the 2017 “EEFIG Underwriting Toolkit. Value and Risk appraisal for energy efficiency investments”. In parallel, the age of digitalization has led to improved data access and rapid development of new business models for standardization, aggregation and funding of investments.

This panel focuses on the key drivers of industrial/SME related energy efficiency investments from the perspective of the corporate investors, financial institutions as well as institutional investors. Starting with presentations of new financing approaches involving digital platforms and de-risking initiatives, the panel continues with practical cases and solutions addressing key barriers to energy efficiency financing, underlines the importance of standardization and collection of energy efficiency performance data and finally presents evidence based insight on investment barriers and innovative proposals addressing public funding programs and bankability of projects.

New financing approaches involving digital platforms and de-risking initiatives for a successful business case

The first topical area addresses innovative solutions and platforms for energy efficiency project de-risking and financing such as securitisation, energy savings insurance and crowdfunding.

Fluch et al. (extended abstract 5-020-18) present the H2020 funded project named TrustEE, created to offer an innovative refinancing model using the securitisation technique and involving the capital market to refinance the energy efficiency projects. The project has created a digital platform to standardize the project assessment for mid-size industrial energy efficiency (and renewable energy) projects. The presentation is based on practical cases.

Neve et al. (extended abstract 5-030-18) introduce an ongoing H2020 funded project for the development of an Energy Savings Insurance (ESI) models in Italy, Portugal, and Spain. The ESI model combines financial and non-financial mechanisms designed to work together to overcome the main energy efficiency investment barriers, create trust and credibility among key actors reduce the perceived risk of stakeholders.

Starnberger (extended abstract 5-044-18) explains several crowdfunding business models frequently facilitated by online platforms, illustrated by energy-related project examples. Focusing on crowd lending, advantages and disadvantages of the model as well as prerequisites for successful funding campaigns are presented, giving an indication, for what types of sustainable energy measures and businesses this financing option can be of relevance.

Flegel (extended abstract 5-057-18) presents the concept of a new support scheme for energy efficiency investments for industry, commerce and municipalities in Germany that addresses a number of limitations of previous support schemes identified in policy evaluations. It seeks to adapt the nature of the energy efficiency projects to be supported with public funds to the projects observed in reality with the objective increase effective use and outflow of public funds.

Practical cases and solutions to address barriers and increase energy efficiency investment volume

The second topical area of the panel presents practical cases on barriers and solutions around implementation of energy audit results, management's role in driving energy efficiency and barriers to external use of industrial waste heat.

Svensson et al. (extended abstract 5-049-18) present a new Swedish approach to support companies to actually implement the recommendations from energy audits. It focuses on the involvement of authorities which use their role of inspection and enforcement of legally required corporate energy savings obligations to guide and support the companies in implementing the identified energy efficiency investment opportunities. The support includes a guide for evaluating and selecting energy efficiency measures, as well as a supporting calculation tool and templates for action plans.

Werle & Brunner (extended abstract 5-053-18) present the results of a Swiss research program on management as a key driver of energy performance. It is noted that the higher the perceived strategic role of energy, the higher the level of energy management. Energy management is an instrument for identifying and implementing energy-efficiency investments, providing reliable and solid data for decision-makers. Key factors for energy management are top management support, public policy, the energy manager's support, company size and energy intensity. Policy recommendations for promoting energy management and energy efficiency improvement measures are outlined.

Klepzig (extended abstract 5-052-18) demonstrates how new and innovative policy approaches that move beyond the more classic mix of incentives and obligations is required to bring about a more acceptable common understanding of the energy efficiency topic, which would improve considerably the ability to achieve tangible results on the ground. This is exemplified by the "Policy Maker Meets the Engineer" project, which brings together policy makers and policy end-users (corporate management and engineers) to find common and business oriented solutions to increase energy efficiency uptake.

Heuke (extended abstract 5-133-18) discusses obstacles and solutions for industrial waste heat utilization projects with external heat users in Germany. The presentation outlines the experience of a recent engagement of the German Energy Agency (dena) supporting 10 flagship projects including four of them using waste heat to heat buildings in an external service area. This contribution, highlights that company internal guidelines for payback periods, peak load supply and redundancy, as well as primary energy factor are observed to be barriers for waste heat recovery projects.

The importance of standardisation and collection of energy efficiency performance data

The third thematic block underlines the importance of standardisation and data collection to build performance evidence based on real investment cases and allow aggregation and efficient implementation of energy efficiency investments.

Fawkes & Castanheira (extended abstract 5-015-18) examine the current state of the energy efficiency financing market with specific reference to industry. They examine initiatives in

the US and EU market, and discuss the specific barriers to the growth of private capital investment into energy efficiency in industry. Finally, they review significant recent initiatives to alleviate these barriers and their role in the ecosystem of energy efficiency financing.

Diana Wang et al. (extended abstract 5-104-18) present the project Asset Class Energy Efficiency (ACE) funded by the German Government, which highlights the importance of standardisation alongside the energy efficiency investment value chain in order to create the basis for project bundling. The focus is set on the due diligence processes and risk analysis, pursuing a de-risking strategy for the stakeholders involved.

Rohde et al. (peer-reviewed paper 5-078-18) present an analysis of the 6,500 industrial projects in the new open source DEEP (De-Risking Energy Efficiency) database which has been created as a result of the recommendations of the Energy Efficiency Financial Institutions Group (EEFIG) with the objective to collect energy efficiency performance data for real existing investment measures. The analysis shows payback, avoidance costs and savings of the implemented energy efficiency measures. It also shows in detail that cost-efficient measures exist for a broad technological scope and the improved data availability thereby contributes to de-risking energy efficiency investments.

Kaspars (extended abstract 5-134-18) presents the business "Lighting as a Service" developed by the company RCG Light-house. Its CEO will share the key learnings from implementing 100+ projects in three EU countries for C&I customers and explain how "Lighting as a Service" can facilitate faster and more efficient transition to LED lighting technology. The presentation will cover the main barriers in decision-making for C&I customers, financing challenges for energy efficiency and the most recent trends in LED lighting market.

New and evidence based insights on investment barriers and drivers and innovative proposals for solutions addressing public funding programs and bankability of projects

The fourth block presents evidence-based case studies and comprehensive empirical analysis on investment barriers to energy efficiency in enterprises, and discusses how to create successful policies for energy efficiency investments and overcome communication gaps between industry and policy makers.

Sa & Rafiee (extended abstract 5-038-18) present the results of a case study involving 15 manufacturing companies in Sweden conducted with the objective to develop a taxonomy of barriers to and drivers for management investment decisions on industrial energy efficiency. The presentation will highlight that both financial returns of the specific investment, other contextual factors and the link between any EE investments and the company's core business plays important roles.

Buettner et al. (peer-reviewed paper 5-127-18) provide insights on obstacles to energy efficiency investments and the important role which awareness raising has in companies' decision making for energy efficiency investments. This is based on quantitative empirical evidence on barriers for EE gathered in the context of the Energy Efficiency Index of the German industry, investment decisions in industry and the role of aware-

ness raising in Germany and qualitative studies on barriers from Northern Italy.

Mac Nulty (extended abstract 5-091-18) explains how a number of different communication gaps exist between industry and policy makers, as well as within companies themselves. He demonstrates how a key aspect of this communication gap is a lack of understanding of a business case approach which is fundamental to change EE from fulfilling an obligation to being part of more successful business operation. He explains why it is important for policy makers to take into account the view of corporate management as well as the view of the engineer in the development of successful energy efficiency policy making.

Dzioubinski (extended abstract 5-081-18) presents a joint research project by UNECE (United Nations Economic Commission for Europe) and the Copenhagen Centre on Energy Efficiency (C2E2), to identify political, regulatory, economic and

social barriers that prevent energy efficiency investments and define successful policies and actions that can help overcome barriers to financing energy. Special emphasis is put on increasing the bankability of energy efficiency projects involving private capital and on the transferability of successful measures in selected countries to other member States of UNECE.

Conclusion and key messages

Finally, this panel will summarize the discussions, draw up key conclusions and suggest promising directions for additional work on emerging energy efficiency business models and scaling of energy efficiency finance in the age of digitalisation. The selection of speakers and their contributions provides robust qualitative and quantitative evidence for further discussion and replication of achieved results on a wider scale.