

Introduction to Panel 5

Business models and financing: established practice and innovative approaches

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As demonstrated in the Report of the Energy Efficiency Financial Institutions Group (“EEFIG”)¹, energy efficiency investment potential in industry is still not fully utilised, due to various factors stemming from low understanding of value that such investments can bring, through business models that still do not incorporate the benefits of smart energy management to limited access to appropriate and attractive finance. In the corporate sector, the key issue considered when investment decisions are made is the payback – the shorter, the better. While such traditional investment behaviour has its merits, it needs to evolve and enable valuing the benefits that energy efficiency brings.

This panel has addressed the key issues for discovering and utilising the direct and indirect benefits of energy efficiency across the production value chain. Starting with presentations of innovative methods for investment decision making, through practical ways to increase knowledge and trust towards non-core but connected energy efficiency investments the panel has further offered promising tools to improve the market conditions and concrete model solutions and contracting methods for industrial corporates as well as SMEs.

Informed decision making

The first session of the panel made a deep dive into holistic methods for investment decision making. The paper of Matthias Harsch & Julian Maruschke (5-050-16) has elaborated on the beneficial effects of implementing Life Cycle Thinking into

the energy efficiency investment process. He pointed out that optimized investment decision procedures based on life cycle models reduce the costs for the ex-post optimisation.

Further, the authors underlined that in order to deploy the innovative decision making processes associated to life cycle thinking, we need to educate and find open-minded managers.

Catherine Cooremans & Rita Werle (extended abstract 5-160-16) presented the results of their research on the factors influencing investment decision making in industry – from the management perspective – outlining why profitability as the only investment driver is not observed in real life. They pointed out that when making investments, the question of the “strategic character” of those investments is important along with the internal context in the company (values, culture, management style). Further, she underlined that longer-term analytical methods such as NPV or IRR are not used at large when energy efficiency investments are discussed as they are deemed non-core business and that non-energy benefits are still largely omitted.

Stefan Büttner (extended abstract 5-165-16) elaborated on what drives the decision makers of energy efficiency investments and on the crucial elements of the decision making process in this context. He concluded that motivation, capacities and funding are the key driving elements towards upscaling energy efficiency investments.

Finally, Céline Tougeron et al. (extended abstract 5-047-16) presented the analysis of the practical results of the Intelligent Energy Europe Programme and Horizon 2020 projects on industrial energy efficiency from the perspective of various decision making tools and their impacts on business profitability. They pointed out that funding and capacity can be reached

1. www.eefig.eu

by participating in the energy efficiency call of the Horizon 2020 programme targeted at industrial corporates and SMEs.

The power of networks

The presentations of this session showed that networks can trigger an impressive leverage factor in terms of energy savings and cost reduction. The basis for success is the motivation through direct exchange and common learning in an organised network environment.

In this context, peer learning is a powerful tool for empowerment with knowledge. This session provided a thorough analysis of results of innovative energy efficiency networks in the European corporate sector.

Eberhard Jochem et al. (paper 5-161-16) provided an introduction to the core concept of Learning Energy Efficiency Networks (LEEN) which exist since early 2000 in Germany and where 10 to 15 corporate energy managers join over a period of 3–4 years in a moderated working process aiming at defining and implementing energy efficiency measures while learning from each other. They outlined the convincing results as participating companies more than double the yearly progress of energy efficiency and at the same time measures prove to be highly profitable with an average rate of return of more than 30 %. They showed that Energy Efficiency Networks, as a powerful group energy management system, can therefore evolve into a successful business model. They introduced the German Government's initiative to establish 500 EEN until 2020 with the support of the government and industrial associations.

Elisabeth Dütschke et al. (paper 5-082-16) explained, based on recent data from an evaluation, what factors make Regional Energy Efficiency Networks successful and motivating for the participating companies. They showed that as a first step, energy audits conducted in the companies provide evidence of the existing energy efficiency potential. These results are the basis for defining the energy efficiency agenda. Further, setting both energy efficiency goals at company as well as network level act as sustainable motivators for the common work, which is particularly supported by regular meetings and site visits. The latter have the effect of an intensive training leading to an increase of knowledge for all parties involved.

Diana Wang et al. (extended abstract 5-146-16) outlined the fundamentals of an innovative financing concept involving the participants of an Energy Efficiency Network: it is based on pooling funds among companies and investing these into equal/similar energy efficiency measures decided by the group with the effect of lowering the transaction costs.

The Swedish system of energy audits, set up in 2010, is one of the most developed in the EU. More than 800 companies have conducted an audit. The main results were explained by Martina Berg et al. (extended abstract 5-092-16) showing that the audits make a real difference as participating companies achieved energy savings between at least 5–10 % as a result of participating in the audit. They explained the basic elements of the New Energy Audit Program (2015–2020) targeting 1,200 companies and expecting a 12 % energy reduction from them as an effect of participating. Important features of the new program are the focus on the quality of energy management the support provide by networking programs.

Investment market – on the move

There is a dynamic market development for financing solutions for energy efficiency investments in the corporate sector. Cristoph Tatje (paper 5-100-16) introduced an innovative and still niche insurance solution which provides an insurance coverage for the guaranteed energy savings which are offered by energy service providers (ESCOs) in the context of energy performance contracts to their clients. The insurance coverage is available on an individual/project basis as well as as a framework insurance for small, similar projects or energy efficiency measures. He explained the basic terms and calculation of the insurance premium evidencing the affordability in the context of the overall business model calculation. As he pointed out, the access to such an insurance coverage can be an essential contribution to the increase of investor confidence into the energy efficiency investment market.

Daniel Kälberer (extended abstract 5-157-16) provided an overview of the European/international tax incentives for energy efficiency. He pointed out the lack of comparative analysis of environmental tax regimes as well as the lack of studies on their effectiveness. This situation is due to frequent changes and the lack of transparency of the developments in this sector.

He explained that the current tax regime in Germany can be applied only to a limited extent to environmental/energy efficiency investment purposes. He guided the audience through the steps required to draft a new German tax legislation pursuing the thesis that the introduction of an energy efficiency tax could further enhance the (highly fragmented and grant based) financial support regime for energy efficiency in Germany leading to a broader access to financial promotion by integrating direct and indirect promotional instruments.

An alternative system triggered by Article 7 of Energy Efficiency Directive,² creating a market for “white certificates” in Italy, was presented by Jan Stede (extended abstract 5-090-16). This system is the main policy instrument to promote industrial energy efficiency in Italy. He pointed out that the introduction of the TAU-coefficient in 2012 by the Italian Energy market regulator has become the main driver of energy efficiency investments in the industrial sector. The TAU coefficient is a technology-specific multiplier of the monetary value of white certificates for a project and takes into account the entire technical lifetime of an energy efficiency measure. The effect is the reduction of the payback-period by nine months. In his presentation, Jan Stede also pointed out that regulatory uncertainty is the main investment barrier in Italy.

How B2C contracting can be used as a successful business model to scale up private household energy efficiency investments was presented by Maximilian Zoller (extended abstract 5-115-16) who explained a novel business approach developed by Thermondo by bundling and refinancing similar small energy efficiency projects and at the same time by providing a one-stop-shop financing solution (incorporating the benefits of KfW promotional program for single measures) to private customers aiming at replacing their heating system.

2. Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC Text with EEA relevance.

Yes, we can – model solutions that work

Two panel sessions were devoted to first-hand experience with innovative business models and informed debate with inspirational businesses in Europe, China and Turkey. Emre İnciroğlu (extended abstract 5-078-16) introduced a successful model project in Turkey called ENERVAY Plus, which combines a structured and detailed energy audit with design and implementation of energy efficiency measures. In his presentation, he showed how an EPC business model applied to comprehensive cluster projects can produce impressive results and raise broad awareness.

How reduction of carbon emissions and departure from coal in Chinese industry can go hand in hand with significant increase of effectiveness and new investment opportunities was the key theme of the presentation provided by Bo Shen et al. (extended abstract 5-118-16). They presented the key findings of a joint study under the U.S.–China climate collaboration program on industrial coal-fired boilers and introduced several business models and financing mechanisms that aim at fundamentally changing the current way of owning and using industrial boilers, thus maximizing the climate, energy, and environmental benefits. He pointed out that options which can be adopted include switching coal to other fuels, retrofitting existing boiler systems to improve efficiency, and developing distributed energy centers to replace scattered boilers. Further, he underlines that new business models are needed to implement viable strategies to address boiler challenge and accelerate efficiency improvement, fuel switching, and the adoption of CHP and distributed energy.

How to turn Europe's energy efficiency potential in 287,000 food and beverage businesses was explained by Jürgen Fluch et al. (extended abstract 5-020-16). They discussed the practical impacts of innovative Greenfoods tools.

Antoine Bonduelle (extended abstract 5-169-16) demonstrated that the “Third Industrial Revolution” has started and is gaining pace in northern France, bringing strong benefits for society, in particular in territories with declining heavy industry. As he pointed out, the support of the public and of institutions such as the Chambers of Commerce to this process have been boosted by the results of the Paris Climate Conference. Many actors of the region were present in the side-events in December 2015 and actively participated in various fora. He underlined that discussions show that the instable political context has an impact on the process. The mobilisation of small firms achieved by the “Third Revolution” process could be weakened by this local political situation and the rise of extremes.

The evolving energy efficiency market gives birth to business models capitalising on the value of direct and indirect benefits that sustainability brings to businesses. This was demonstrated by four inspirational presentations concluding the panel. Paula Fonseca et al. (extended abstract 5-012-16) elaborated on the model project called EPC+ which is in the process of being established and which aims to involve SME's in the EPC market

usually dominated by larger companies. They outlined how SME's can effectively co-operate in SME Partnerships for Innovative Energy Services (SPINS), whereby the SMEs provide complementary expertise and are supposed to jointly supply energy services in a structured and long term collaboration with commonly agreed objectives.

Sebastian Carneiro (extended abstract 5-143-16), representing the SUSI Energy Efficiency Fund explained the preconditions and risk analysis process to make energy efficiency investments bankable from the point of view of a specialised fund. The existence of tailor made financing solutions will be crucial for further market development, representing one of the major chances of this market together with the projected shift of Energy Management from products to services.

According to his view, turning energy efficiency into a standard topic on the corporate agenda is still a big challenge together with the immaturity of the energy efficiency contracting market in Europe and the heterogeneity of country specific legal and political framework across the European countries.

Thomas Theiner of Bilfinger Efficiency GmbH (extended abstract 5-032-16) outlined the practical application of energy services to a world-wide operating dairy company using a systematic approach to identify and implement energy efficiency measures including guaranteed energy savings. He shared the experience that the gross savings resulting from the energy efficiency measures implemented as a result of a structured process of energy analysis, energy concept, planning & financing are enough to cover the investment costs and still resulting in net savings to be shared between the customer and Bilfinger as service provider.

Conclusion and key messages

- Networks can trigger an impressive leverage factor in terms of energy savings and cost reduction. The basis for success is the motivation through direct exchange and common learning in an organised/moderated networking context.
- There is an enormous potential for cross-border exchange of best practice, ideally in a structured manner. This exchange is of particular interest for SMEs.
- There is a huge interest in identifying and understanding innovative business models and link them to suitable/tailor made financing solutions.
- Business Models which use the possibilities of digitalisation to support end customers in taking energy efficiency investment decisions (one-stop-shop solutions) attracted a high degree of interest of the audience, confirming the need to further explore the potential of digitalisation in this context.
- There is a dynamic market development for financing solutions by translating energy savings into monetary value (white certificate scheme) and by providing targeted insurance and guarantee solutions for energy savings.