Energy Efficiency Protect – insurance for energy efficiency guarantees

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Abstract

The company b2b Protect GmbH is dedicated to the development of innovative insurance products for the fields of energy efficiency and renewable energies in cooperation with the reinsurance company Hannover Re to address the demand of the market in terms of insurance solutions for energy efficiency projects. Given that this paper is presented at eceee Industrial Efficiency conference 2016, the scope is limited to the insurance product **Energy Efficiency Protect (EEP)** and its specifications.

b2b Protect GmbH notices a lack of confidence when it comes to investing in energy efficiency measures. In particular, the customers of energy service companies (ESCO) being private individuals, commercial, or industrial customers as well as other investors who provide funding for energy efficiency measures often experience uncertainty whether the energy savings projected for a given energy efficiency measure will be achieved as a results of its implementation. As a result, a lot of measures in the fields of building insulation, LED installation, energy management, building control, compressed air generation, etc. are not implemented. The financial risk incurred by the customer or investor is deemed to be too high because they expect an extended or uncertain payback period.

With the objective to limit the financial risk, b2b Protect GmbH developed **Energy Efficiency Protect (EEP)**, an insurance product for energy efficiency measures with the character of an asset performance insurance. More specifically, **EEP** insures the guarantee with respect of a certain volume of energy savings which has been provided by an ESCO to its customers (the ESCO is the holder of the insurance policy). Before an energy efficiency measure can obtain insurance coverage, the guarantee, including all the technical specifications of the planned measure, is checked by the insurance provider (plausibility check). If the calculation of the targeted energy savings is solid and the targeted energy saving seems achievable, the insurer is in the position to calculate an individual premium for the insurance coverage and can offer insurance coverage for the planned energy efficiency measure.

Providing insurance coverage to the guarantee helps to build trust in the energy savings calculations of the planned energy efficiency measure and can trigger a positive investment decision by the customer of an ESCO or an investor to fund an energy efficiency measure. With **EEP**, the customer of an ESCO or investor can be sure that the promised energy saving will be achieved and a planned payback period is attained. If this not the case, the insurance company will pay for the gap.

Introduction

Global climate change is currently one of the greatest challenges for humanity. According to the forecasts of leading climate experts, the average temperature on earth could rise up to four degrees by the end of the century. The effects would be devastating. Only immediate action of the international community can slow this trend to global warming to mitigate the consequences and risks involved.

With the climate agreement at the United Nations Framework Convention on Climate Change (COP 21) in Paris a historic breakthrough in the global climate change policy has succeeded: Global warming is to be limited to less than two



Figure 1. Energy Efficiency Protect (EEP).

degrees. As the German Environment Minister Barbara Hendricks said at the summit, Paris was "not the end but the beginning of a long road".

If one looks at the ways in which global warming can be limited, the focus is on two approaches: The promotion of renewable energies and energy efficiency measures¹. In Germany, these two pillars are grouped under the term "Energiewende". The experts agree: Only the combination of both pillars can lead to a success.

Due to the consequences of global warming, the insurance industry is facing major challenges. The risks associated with the development of the climate are difficult to assess. It can be expected that the compensation in the event of frequently occurring natural disasters will tend to strain the insurers and will have a negative impact on their business models. So far, coverage for energy efficiency and renewable energies currently exists only to a very limited extend (niche products). The fight against global climate change gives insurance the opportunity to differentiate themselves from competitors by opening to new fields of businesses. Large investments into energy efficiency measures are necessary to lead the energy transition to success. But, because of fear that projects in those areas are not profitable (longer payback period than estimated or promised), many of these actually economically viable projects are not being implemented. This is especially critical to measures which promise particularly high savings or earnings. For example, the LED technology allows savings up to 60 %, which many customers deem unrealistic. There is a lack of confidence in the profitability calculations or technology. Especially, the technological performance systems over rather long periods of time are a major concern for customers and investors. As a consequence, investment projects are cancelled. For this reason, the potential of energy efficiency measures is far from being exploited.

With **Energy Efficiency Protect** (**EEP**) the company b2b Protect GmbH has developed an insurance product for the field of energy efficiency. The product targets the providers of energy efficiency measures who want to guarantee a certain volume of energy savings to their customers. **EEP** creates confidence for customers and investors that the promised saving will be reached by the energy efficiency measure because the project has been analysed by an insurance company and has obtained an insurance coverage. If the targeted energy savings are not achieved, the insurer will pay the difference directly to the customer or investor. This reduces economic and financial risk associated with the investment. The increase in confidence for the investor as we think will lead to more energy efficiency projects.

What is Energy Efficiency Protect (EEP)?

Energy Efficiency Protect (EEP) is an insurance product that insures the guarantee regarding a pre-defined energy saving which is provided by an ESCO to a customer or investor. The ESCO is the insured entity and can use EEP as a sales argument.

EEP has been developed by b2b Protect GmbH in cooperation with various experts in the insurance industry and ESCOs, which expressed the need for such an insurance product. As a result, an insurance product for the performance of energy efficiency measures emerged. It is a performance insurance which provides several advantages to all market participants involved through a targeted and effective risk transfer. The insurance covers the risk that the projected energy saving of an energy efficiency measure is not reached and that, as a consequence, the projected payback period cannot be reached. It should be noted that energy fluctuations and user behaviour are not covered by the insurance). Figure 1 provides a graphical overview (source: b2b Protect GmbH).

This is how it works: As shown in the diagram, a service provider (ESCO) and a customer enter into a service contract or a purchase contract regarding an energy efficiency measure. This contract includes a guaranteed energy saving that can be achieved by the measure. The planned energy efficiency measure and the associated guaranteed saving is checked by b2b Protect GmbH and the insurance company involved (technical specifications and the plausibility of the calculation). If the technical specifications allow for the promised energy savings, the measure can be insured by the insurer. Through EEP the insurer takes over the risk inherent in the provider's guarantee. If the promised energy saving is not reached, the insurance pays the difference directly to the customer, not to the ESCO. An important precondition before entering into the insurance agreement is that all parties involved have agreed on a reference energy price.

Examples of insurable projects

The insurance product **EEP** is characterized by its high flexibility. It can be used for very different technologies. The basis for the insurance is always the guarantee regarding a certain degree

^{1.} https://www.agora-energiewende.de/en/die-energiewende/goals-of-energiewende/

of energy efficiency/energy savings. For example, energy efficiency guarantees in the following areas can be insured (asset performance insurance).

- Building insulation
- LED installation
- Energy management
- Building control
- Compressed air generation
- CHP plants

What are the benefits of EEP?

EEP creates trust between providers of efficiency projects and their customers as regards the energy savings – thus promoting the rapid implementation of energy saving projects, while providing numerous benefits to the parties involved.

- Confidence on the customer side.
- Increasing willingness to invest on the customer side, leading to more sales and a faster implementation process.
- Investment security: If the targeted energy savings are not achieved the insurer will pay the difference directly to the customer or investor.
- Value of Warranty: The customer can be sure that a renowned insurer, in case of loss (guaranteed energy saving is not achieved by the measure), will still be able to pay in a few years. Even, if the supplier is no longer in business.
- By insuring the guarantee, the provider of the energy efficiency performance guarantee does not need to make provisions in its balance sheet, as the risk of a given guarantee is transferred to the insurer.
- The provider can differentiate himself from competitors and has an unique selling argument.

Analysis of savings potential

The basis of each **EEP** insurance is an analysis/calculation of the energy savings potential associated with the targeted energy efficiency measures. This involves an intensive examination of the provider of the energy efficiency solution and the specific energy efficiency measures to be implemented. During this examination, the technical components as well as methods of implementation and calculation of already successfully implemented projects are verified. In the process of this analysis the provider of energy efficiency measures, b2b Protect GmbH, the insurer, the reinsurer, and external experts work closely together. At the end of a successful analysis, it is clear to what extent and to what conditions an energy efficiency project can be insured (the risk is shared by the insurer and reinsurer).

Premium calculation

The premium has to be calculated individually for each measure. There are several aspects to consider (e.g. experience with technology, comparable projects in the past, etc.). Figure 2 shows a sample calculation (e.g. for LED installation, energy management, or compressed air generation).

Types of insurance protection

INDIVIDUAL/PROJECT SPECIFIC INSURANCE COVERAGE:

Each potential insurance project for an energy efficiency measure is analysed on an individual basis. If it turns out that it can be insured, an individual, project specific insurance coverage is developed. This is particularly suitable, if the project involves many different efficiency measures and the expected volume of energy savings is lager than 1 Mio. Euro.

FRAMEWORK INSURANCE COVERAGE

A framework insurance coverage agreement is always the best solution, if a provider offers a number of similar projects (especially, if they are rather small; e.g. Smart Home Technology Kit).

If a similarity of the different projects is observed during the analysis, the insurer and provider can enter into a general



Figure 2. Sample calculation.

agreement for insuring future projects without a re-examination. But, for this purpose, technology and specifications must remain the same.

Conclusion

Energy Efficiency Protect is an asset performance insurance that allows ESCOs to insure an energy efficiency guarantee provided to their customers. An insured guarantee helps to build trust in the calculations of a planned energy efficiency measure and helps to convince customers and investors to make an investment.

By insuring a given guarantee our insurance product is open to all kinds of technologies and measures. Our framework insurance coverage agreement even allows small measures to be insured, if an ESCO carries out a lot of similar projects throughout the year. Up to date, b2b Protect GmbH has provided insurance coverage to over 10,000 individual measures in cooperation with Hannover Re. Selected references include:

- mobilcom-debitel: Saving 20 % heating energy by Smart Home Heating Control which can be rented for a monthly fee.
- MeteoViva: Energy savings between 5 % and 18 % by MeteoViva Climate (considering the weather forecast).
- ElbeEnergie: Reduction of up to 80 % of network user charges by installing various measures such as cogeneration and load management.

We believe that an insurance product such as Energy Efficiency Protect can be a key element to make the energy transition successful, because it offers investors and customers a high degree of financial and economic security, even if the planned savings are not reached by the targeted energy efficiency measure.