



SMEPlus

Action Plan 2021

House of Energy Hessen, Germany



**Interreg
Europe**



European Union | European Regional Development Fund





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1. General Information

Project

SMEPlus – Improving policy instruments to increase the energy efficiency in industrial SMEs

Partner organisation

House of Energy

Country

Germany

NUTS2 region

Kassel

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House of Energy 





2. Introduction

Interreg Europe promotes the exchange of experience between participating regions from the EU. The aim is to optimize policies to make better use of regional funding, in this case in the SME sector. The project SMEPlus aims to improve funding instruments for increasing energy efficiency in small and medium-sized enterprises. The House of Energy e.V., located in Kassel (Hessen) participates as the German project partner and is in charge of the project implementation in Hessen as well as the creation of the regional action plan.

2.1. SMEPlus

Energy efficiency is an essential building block in the context of the energy transition. The potential for savings is considerable, especially in the area of small and medium-sized companies (SME). Therefore the Interreg Europe project SMEPlus partners want to increase the energy efficiency of SMEs. The partner regions compare & rethink their energy policies, liaise with important stakeholders, exchange solutions and improve their instruments towards SMEs.

As industrial SMEs represent 95% of the companies, their impact on economies is immense: They shape Hessen as a business location and make up 99 percent of the companies. Over half of all employees subject to social insurance in Hessen are employed by an SME. This makes SMEs important employers and strengthens regional solidarity. This solidarity enables them to become important pioneers and role models in matters of environmental protection. This includes efficient use of materials and energy, and measures to reduce energy and measures to reduce CO₂ emissions.

Since the core challenge of SMEPlus is to increase energy efficiency in SMEs, Hessen was eager to participate in the project. In order to achieve the project goal, the partners and stakeholders share their good practices. Engaging in discussions and exchanging experiences with relevant actors is a good way to find solutions to increase the involvement of the industrial SMEs in energy efficiency improvement. Common barriers to overcome in the regions are the low interest of industrial SMEs participating in energy efficiency policy programs.



2.2. Project Structure

Regarding energy efficiency, the Hessian Energy Agenda formulates both the need for consulting and support for SMEs, as well as networking in this thematic area. In the SMEPlus project, funding instruments for energy efficiency measures in manufacturing SMEs were investigated, exchanged and developed. On a national level, this was done together with stakeholders, including the Unit for Technological Innovation, Resource Efficient Production of the Ministry of Economics, Energy, Transport and Housing (HMWEVW), which is responsible for the funding program PIUS (Production Integrated Environmental Protection). The PIUS program is considered as the Hessian good practice. The House of Energy is the German (Hessian) project partner. It is responsible for initiating and coordinating the Hessian activities and connects the European project partners and the Hessian stakeholders.

Managing Authority of the Policy Instrument: Ministry of Economics, Energy, Transport and Housing

The Ministry of Economics, Energy, Transport and Housing is founded on a politics of sustainably ensuring Hessen's wealth, based on well-balanced economic development and a sensible ecological approach. By promoting and developing renewable energies and the improvement of energy efficiency, it aims to build reliable, affordable, future-oriented energy provision for the citizens and companies of Hessen. The Ministry strengthens diversification in the Hessian economy by promoting its innovative and competitive power and providing a favorable environment. As a state located in the heart of Germany and Europe, Hessen also carries a high degree of responsibility for mobility, in the sense of providing the best possible transportation for people and goods. To achieve this, the ministry makes sure to maintain the high-performance infrastructure and optimal links between the various means of transportation.

The Ministry of Economics, Energy, Transport and Housing is the responsible body for the policy instrument but was not included in the partnership of the SMEPlus project. The House of Energy is linked with the government and administration at state level and, by order of the ministry, develops the design and funding of projects regarding innovative energy technologies. Therefore the House of Energy, as a theme related regional institution, was appointed to conduct the project.



Project Partner House of Energy e.V.

The House of Energy is a non-profit association that initiates and fosters innovations in the field of renewable and sustainable energy supply. The association operates as an idea generator, a competency center and a platform for communication, coordination and knowledge transfer. The goal is bringing together the needs of commercial enterprises, research facilities and universities, as well as political structures. Therefore the members are municipal energy suppliers, industrial infrastructure operators, producers of energy-efficient systems, technology-oriented universities, research institutes and platforms as well as two Hessian ministries. House of Energy cooperates with players from Hessen and beyond, supporting the energy transition.

For the House of Energy, the energy transition represents a fundamental transformation process from a fuel-based to a renewable and carbon dioxide-neutral energy supply. At its core, it consists of a technology turnaround, which must nevertheless be viewed holistically. In addition to the energy industry (electricity, gas, heat), it includes above all structural and regulatory policy, finance, industry, information technology, housing, mobility and, last but not least, citizens.

3. Policy Context

The Action Plan aims to impact:

- **Investment for Growth and Jobs programme**
- European Territorial Cooperation programme
- Other regional development policy instrument

Name of the policy instrument addressed:

Operational Programme 2014 - 2020, Hesse, Axis 3, Goal 4b



3.1. Policy Instrument: The Operational Programme

The Operational Programme (OP) aims to foster economic growth in Hessen and to contribute to achieving the Europe 2020 targets for smart, sustainable and inclusive growth. It aims to strengthen research and innovation, create jobs and boost productivity, particularly in small and medium-sized enterprises (SME), reduce CO₂ emissions in the region and support integrated concepts for sustainable urban development.

The Programme itself focuses on four main priority axis:

- 1.) Strengthening of research, technological development and innovation
- 2.) Enhancing the competitiveness of SMEs
- 3.) Supporting the reduction of CO₂ emissions in all sectors of the economy
- 4.) Sustainable urban development

Global warming in recent decades is largely due to the influence of mankind. Climate protection is of global importance, reflected in agreements and conventions which have been concluded at various levels. The goal is to limit the global temperature increase worldwide to less than two degrees compared to the level before the start of industrialization. The most important measures to protect the global climate are aimed at reducing greenhouse gases, essentially CO₂. This is to be achieved primarily through more efficient energy use, reducing the volume of transport and increasing the share of renewables in energy production.

Climate warming is also measurable in Hessen. The most important greenhouse gases that contribute to atmospheric warming in Hessen are carbon dioxide, methane and nitrous oxide. Between 1990 and 1996, the energy-related CO₂ emissions (not including air traffic) increased in Hesse due to the growing energy sector and increasing transport-figures in Hessen; since then, the value has been falling steadily - despite an increase in both the number of inhabitants and the gross national product during this period. This overall positive development has not yet been sufficient to achieve the goal of the Hesse sustainability strategy of reducing greenhouse gas emissions by 21% by 2012 and by 21% by 2012 and 40% by 2020 compared to 1990 levels.

In order to achieve the objectives in the area of promoting efforts to reduce CO₂ emissions in all sectors of the economy, the Operational Programme addresses the following investment priorities:



- Investment Priority 3.1: Investments by SMEs to increase energy efficiency and the use of renewable energy sources, as well as to save of materials and the establishment of material cycles.
- Investment priority 3.2: Applied energy research; pilot and demonstration plants for energy efficiency and renewable energies

The policy instrument addressed in the SMEPlus project focuses on the third priority axis with goal 4b, supporting the energy efficiency and the use of renewable energy in companies. The support allows for investments of SMEs to improve the energy efficiency, to use renewable energy, to reduce materials and to establish the circular flow of materials.

In a nutshell, the goal of the policy instrument addressed is to enhance the competitiveness of SMEs and to support the reduction of CO₂ emissions. Measures which derive from the OP have to fulfil the following criteria:

- the eligibility of a measure will be checked according to technical efficiency criteria and the improvement of the carbon footprint
- requirement: highly efficient technology, which fulfils more than the legal requirements
- measures, which have to be conducted anyways due to legal requirements are not eligible
- prior to applying for the funding of an investment, the use of energy and resources has to be surveyed and it will be compared to the use after the investment.
- the expected saving of carbon-dioxide due to the investment has to be calculated
- “rule of thumb” for CO₂ savings: 1 funded Euro = 1kg CO₂ equivalents

3.2. The Hessian Good Practice PIUS

The above mentioned specifications are implemented through the Hessian innovation and investment support program PIUS. The program helps SMEs to reduce material use, energy consumption and CO₂ emissions. PIUS stands for production-integrated environmental protection (“Produktionsintegrierter Umweltschutz”) and is a support system comprising of the advisory scheme PIUS-Beratung and the funding scheme PIUS-Invest. Both programs are interlinked but they also can be applied separately.

The goal of PIUS-Beratung is to identify savings in the area of production, service and trade. Advisors will develop solutions on how to optimize processes in the energy cycle and in the cycle of materials. It is possible to obtain a grant for up to 50% of this advisory service, with a maximum of 600 Euros per advisor day (650 euros in ERDF priority areas) and a maximum of



12,000 Euros (13,00 in ERDF priority areas) over a period of 3 years. While plenty of enterprises have received funded consulting, evaluations of the impact of PIUS-Beratung pointed out that the identified potentials for improving efficiency were not always realised. To close the gap between identified efficiency potential and realised potential the Hessian government has widened their PIUS support and created the funding program PIUS-Invest, launched in March 2017.

PIUS-Invest is the second part of the system. It can be used to implement the cost reduction measures identified in the PIUS-Beratung. While simple organizational changes can already lead to energy efficiency, major investments are often needed. Therefore, the funding applies to process and organizational innovations, for example improvements and efficiency increases in production and business processes or investments in environmentally friendly plant engineering. Required are direct actions that lead to a reduction in material and energy consumption and consequently to a reduction in CO₂ emissions. PIUS-Invest offers a grant of up to 30% with a maximum of 500,000 Euros. Projects will be supported with 1 Euro for every kilogram of CO₂.

As of December 2022, 63 SMEs have participated in the program. 58 million EUR have been invested (with 14 million EUR of ERDF funding) which leads to a reduction of 22.000 tons of CO₂ equivalents per year.

Hessen participates at the SMEPlus project in order to improve the policy instrument, whose main implementation tool is PIUS. An improvement of the program can be translated into the policy instrument. A true progress would be an increased number of companies that participate in the PIUS scheme, receive support from PIUS-Beratung and invest afterwards in CO₂ emission reduction. This can be achieved by raising the level of awareness and make it known to a wider range of the public / SMEs.

3.3. Stakeholders of the SMEPlus Project

- **Ministry of Economics, Energy, Transport and Housing** – State of Hessen
The Hessian Ministry of Economics, Energy, Transport and Housing (HMWEVW) is one of nine ministries of the State of Hesse. It has its headquarters in the state capital Wiesbaden. The Ministry is home to the Hessian Managing Authority for the European Regional Development Fund (ERDF), the most important EU structural fund for Hesse. The HMWEVW is responsible for the development of PIUS, based on the Operational Programme, for the development of the PIUS support and its future evolution.



- **Hessen Trade and Invest:**

The Hessen Trade and Invest GmbH (HTAI) is the economic development agency of the State of Hessen. Their task is to sustainably develop Hessen as a business and technology location in order to consolidate and expand its competitiveness. Through targeted activities, they help to maintain and increase the prosperity and standard of living of all citizens in Hessen in the long term. They cooperate with business, science, administration and politics. The HTAI leads the national PIUS network and promotes PIUS-Beratung and PIUS-Invest in Hessen.

- **RKW Hessen / Hessian Initiative for Energy Consulting in the Mid-Sized Sector:**

The task of the RKW Hessen is to offer qualified consulting services in all matters of practical business management for small and medium-sized enterprises (SMEs) and start-ups. Whenever possible, the services are supported by public funds of the state or the federal government whereby the Hessian Ministry of Economics and the European Regional Development Fund (EFRE) provide the fundings.

The Hessian Initiative for Energy Consulting in the Mid-Sized Sector (HIEM) supports SMEs in increasing energy efficiency and to finding their path to a secure energy future. The initiative is funded by the Hessian Ministry of Economics, Energy, Transport and Housing. It is an integral part of the implementation concept with which the Hessian Ministry of Economics is shaping the energy transition in Hesse. The RKW Hessen / HIEM operates the consulting program PIUS in Hessen and maintains the network of energy consultants.

- **WIBank** (Commercial and Infrastructure Bank of Hessen):

The WIBank is the development bank of the State of Hesse and thus the central point of contact for all development matters for individuals, for the commercial economy and freelancers, as well as for municipalities and districts.

The bank supports Hessen in a variety of ways with different funding programs. It is active in structural, economic, social and housing promotion. The bank also implements the economic stimulus and infrastructure programs of the state and federal governments in Hesse. Thus, it helps companies and start-ups to access the wide range of funding opportunities offered by the state, the federal government or the EU. The Bank is responsible for the financial processing funding program PIUS-Invest

- **LandesEnergieAgentur** Hessen – State Energy Agency (LEA):

The LandesEnergieAgentur (LEA) takes over central tasks in the implementation of the energy transition and climate protection on behalf of the Hessian state government. One focus of the activities is on Hessian municipalities, which can receive a wide range of support for municipal strategies and measures for climate protection, energy



efficiency, energy saving and the expansion of renewable energies. The LEA also acts as an information platform for citizens as well as for companies and all kinds of organizations in Hesse. While it is not directly involved in the PIUS program, it is a key stakeholder when it comes to energy-related topics within the state of Hessen.

Excursus: Knowledge Sharing

The Hessian good practice PIUS aroused considerable interest both within the project consortium of SMEPlus and within the Policy Learning Platform of Interreg Europe.

In the third semester, a member from the Swedish Agency for Economic and Regional Growth heard about the PIUS program. In an online meeting in December 2020, she could learn more about PIUS from the Hessian stakeholders from the Ministry of Economics. They discussed how to measure the reduction of CO₂ in projects and how to calculate an overall target value within a specific program. Cooperation in the Future is envisaged.

In the fourth semester, an international matchmaking event with Western Macedonia took place. The region read about the PIUS scheme and was interested in learning more about its content. The Hessian stakeholders gave closer insights into the scheme and are willing to share their knowledge in the future. Also in the fourth semester, the E-Workshop “Championing sustainable energy in SMEs” was organized by the Policy Learning Platform. Here, the good practice was introduced by the Hessian stakeholders. They were happy to see the interest in their programme and gladly shared their knowledge. They are willing to provide further input and are looking forward to work together in the future.

The Hessian good practice PIUS also aroused considerable interest among the regional project managers. There are three countries (Italy, Spain and Romania) which refer to the Hessian program in their action plans and consider to implement similar programs.



4. Details of the planned Action

The Hessian action plan takes inspiration from the good practices that were presented throughout the project's transnational partnership – mainly from the Netherlands. We learned from the Dutch partner Province of Groningen about their “Energy-efficiency through law enforcement” project and their “Smart Businesses Groningen” project. It turned out that similar approaches were followed in Germany and the Netherlands. We were able to expand our knowledge regarding helpful tools which we will implement in Hessen, as described below in the action. The identified action is assigned to the category of improved governance, where the interregional cooperation influences the way policy instruments are managed and new approaches are adopted thanks to the lessons learnt in other regions. The Hessian policy instrument's implementation tool is the PIUS program and the goal of the project was to increase the ratio of SMEs who participate in the program. The action described below will have a positive impact on it and the goal can be achieved.

4.1. Action 1: Lowering the Threshold for SMEs to implement Recognized Energy Conservation Measures

4.1.1. Background

During the Dutch-German online study visit the project “Groningen werkt slim” (Smart Businesses Groningen) was introduced. The mission of Smart Businesses Groningen is to support businesses in becoming energy-neutral and to work in accordance with the principles of the roadmap “Groningen CO₂ Neutral 2035”. The advisors of this sustainability platform provide independent advice and put their knowledge and network to work for the users.

Smart CO₂ Thermometer and Energy Conservation Measures Lists

A promising project from Smart Businesses Groningen is the Smart CO₂ Thermometer. Understanding the CO₂ emissions of one's company or organization is an important foundation for saving energy or to offset CO₂ emissions. The Smart CO₂ Thermometer calculates this online and it is for free. True to the motto measuring equals knowing, this is the starting point for making sustainable choices.



The tool gives insight into the total CO₂ emissions as well as into the average emissions per employee. It can be used as a baseline measurement of the organization's CO₂ emissions. It calculates what the CO₂ emissions are and to what extent they have been reduced after sustainability actions. This can help SMEs to become an energy neutral company.

In the Netherlands, a company or institution that uses at least 50,000 kWh of electricity or 25,000 m³ of natural gas (equivalent) per year is, under the Environmental Management Activities Decree, obliged to take energy saving measures with a payback period of 5 years or less (energy saving obligation). In order to help the companies to find and to report on energy saving measures they have implemented, the Netherlands Enterprise Agency has published several lists which contain a number of measures for energy conservation in SMEs. They are called Erkende Maatregelenlijsten energiebesparing (EML).

The name of the lists can be translated into "Recognized Energy Conservation Measures Lists". The measures have a payback period of 5 years or less and have been drawn up for the following 19 sectors: agricultural sector, auto repair shops, industrial buildings, building materials, commercial data centers, retail, printing, paper and board, health and welfare institutions, hotels and restaurants, offices, food industry, metal-electro and metal, furniture and wood, mobility sector, educational institutions, rubber and plastics industry, sports and recreation, service stations and car wash establishments, paint and printing ink. They are available for download at: <https://www.rvo.nl/onderwerpen/duurzaam-ondernemen/energie-besparen/informatieplicht-energiebesparing/bedrijven-en-instellingen/erkende-maatregelenlijsten>. These excel-files include a practical overview on a whole variety of measures. The threshold to start saving energy is very low especially due to the quick return in invest of 5 years.

Similar Approaches in Hessen – the CO₂-Calculator Ecocockpit

In 2021, the LandesEnergieAgentur Hessen, one of the stakeholders in the SMEPlus project, also started to offer a way to determine the greenhouse gas emissions of companies. The online-based balancing tool "ecocockpit" is a platform for companies to track down CO₂ drivers in their own operations. The tool helps users to get to know more about the main causes of CO₂ within their enterprise. It is a platform for companies to track down CO₂ drivers in their own operations quickly and free of charge.

With ecocockpit, the user can create an initial CO₂ balance in a few steps. A report summarizes the results of the CO₂ emissions. It was originally developed by the Effizienzagentur NRW (efa NRW) and has already been used successfully there since 2014. Thanks to the cooperation of efa NRW and the support of the Hessian Chambers of Industry and Commerce, it was possible for LEA Hessen to adapt this program and thus now pass on this service to Hessian companies.



The Hessian Initiative for Energy Consulting in the Mid-Sized Sector (HIEM), also a stakeholder of the SMEPlus project, consider ecocockpit to be very helpful. They want to raise awareness about the tool because the visualized results increase the self-motivation of the companies to deal more deeply with the topic.

4.1.2. Objective and Activities

The exchange within the SMEPlus project has shown that both Groningen and Hessen provide CO₂-calculators for SMEs. Both calculators are based on the same idea: Knowing more about the companies' emissions is a good start for making sustainable choices. Dealing with the subject matter of calculating CO₂ emissions more deeply might also increase the interest of SMEs in really getting active and starting to invest in energy efficiency measures.

This topic is very relevant for the Hessian stakeholders. They are dealing with the questions of how to get more SMEs interested in implementing energy efficiency measure in general and how to get more SMEs to participate in the PIUS scheme.

The "Recognized Energy Conservation Measures Lists" follows up on this question. The list contains numerous "low hanging fruits" of energy efficiency measures. These lists should therefore be made available to Hessian SMEs as well, ideally combined with the CO₂-calculator.

As the main goal of action 1, the lists will be translated into German and made available online for the users of the CO₂-calculator. SMEs which operate in one of the 19 sectors can benefit from the compiled knowledge. Once an SME gets interested in calculating its CO₂ emissions, it might also get ready for taking the next step, which is implementing one of the measures.

SMEs who implement at least two measures from the list will receive a bonus when entering the PIUS program. Normally it is possible to obtain a grant for up to 50% of the advisory service, with a maximum of 600 Euros per advisor day and a maximum of 12,000 Euros over a period of 3 years. This results in an average number of 20 advisory days. 10 SMEs who implemented measures from the list, will get an additional advisory day.



We propose the following implementation steps:

1. **Translation**

Translating the Recognized Energy Conservation Measures Lists from Dutch into German

2. **Editing and Extending**

Checking the measures mentioned in the Dutch lists regarding their feasibility in Germany. If necessary, measures will be adapted so they will be consistent with the conditions in Germany. If further sectors are of interest, new lists will be prepared.

3. **Programming**

Updating the CO₂-calculator website: The translated and edited lists will be uploaded on the website of the CO₂-calculator. SMEs can browse through the different sectors and find suitable measures for them to implement.

4. **Launch** of the updated website

5. **Application for and Participation in PIUS**

SMEs can apply for the PIUS Beratung and for the additional advisory day. Applications will be revised and if the first measures were adapted according to the list, they will be granted an additional advisory day

4.1.3. Players involved

- House of Energy
- Ministry of Economics, Energy, Transport and Housing
- LandesEnergieAgentur
- Effizienzagentur NRW (who originally developed the calculator)



4.1.4. Timeframe

We expect that this action will be implemented in the second phase of the SMEPlus project, during a period of 12 months, between February 2022 and January 2023, as follows:

Implementation plan	Phase 2											
	MTH 1	MTH 2	MTH 3	MTH 4	MTH 5	MTH 6	MTH 7	MTH 8	MTH 9	MTH 10	MTH 11	MTH 12
1. Translation	█	█	█									
2. Editing and Extending		█	█	█								
3. Programming			█	█	█							
4. Launch					█	█						
5. Application						█	█	█	█	█	█	█

4.1.5. Costs and Funding Sources

Approximately 30,000 EUR. Funding sources: Ministry of Economics, Energy, Transport and Housing – State of Hessen (where existing ERDF funding is available).

The costs for the additional advisory days (6.000 EUR) will be covered by the budget of the PIUS scheme.

4.1.6. Expected Outcome and Impact

Main output: 10 SME's will directly benefit of this action due to an additional number of advisory days in the PIUS program.

It can be assumed that a greater number of SMEs will benefit indirectly because they get valuable tips on how to improve their energy efficiency.



Date: _____

Signature: _____

Stamp of the organisation