



**EUSALP** EU STRATEGY FOR THE ALPINE REGION

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## Study on energy efficiency in Alpine enterprises

Analysis of supporting instruments for realising energy efficiency measures and the use of renewable energies

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80 million people, 7 countries, 48 regions,  
mountains and plains addressing together  
common challenges and opportunities



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# TABLE OF CONTENTS

<b>SUMMARY .....</b>	<b>ix</b>
Methodology .....	x
Recommendations for non-binding instruments in the Alpine region .....	x
Setting up an energy efficiency network .....	xi
<b>Introduction .....</b>	<b>1</b>
Enterprises in the Alpine region face challenges to realise energy efficiency measures .....	1
Existing instruments .....	2
Energy efficiency network .....	3
<b>Methodology .....</b>	<b>4</b>
Screening of existing studies .....	4
Information gathering via questionnaires .....	4
Information gathering via telephone .....	5
Choice of programmes to be analysed .....	5
Strengths and weaknesses analysis .....	5
Presenting first results and encouraging discussion .....	5
<b>Binding instruments related to energy efficiency and their status of implementation .....</b>	<b>7</b>
Austria .....	8
Status of the implementation of the EPBD .....	9
Status of the implementation of the EED .....	9
France .....	10
Status of the implementation of the EPBD .....	10
Status of the implementation of the EED .....	11
Germany .....	12
Status of the implementation of the EPBD .....	12
Status of the implementation of the EED .....	13
Italy .....	14
Status of the implementation of the EPBD .....	14
Status of the implementation of the EED .....	15
Slovenia .....	16
Status of the implementation of the EPBD .....	16
Status of the implementation of the EED .....	16
Switzerland .....	17



Status of the implementation of energy efficiency in the buildings according to the EPBD .....	17
Status of the implementation according to the EED.....	17
<b>Non-binding instruments to increase energy efficiency .....</b>	<b>19</b>
Austria .....	20
klimaaktiv energy-efficient enterprises .....	21
Regional consulting programmes .....	22
National Environment Subsidy .....	23
Refurbishment Campaign (Sanierungsoffensive).....	26
France .....	26
Subsidised feasibility studies.....	26
White Certificate Scheme (Certificat d'Economies d'Energie – CEE) .....	27
Germany .....	28
Saxony-Anhalt Energy (Sachsen-Anhalt Energie) .....	28
Climate protection plus (Klimaschutz plus).....	30
Italy .....	31
ClimateFactory (Klimafactory).....	31
White Certificate Scheme (WhC).....	32
Liechtenstein .....	33
Energy funding in Liechtenstein.....	33
Slovenia .....	34
Switzerland .....	37
PEIK – the professional energy consultation for SMEs .....	37
ProKilowatt .....	38
<b>Recommendations for non-binding instruments in the Alpine region .....</b>	<b>41</b>
Kinds of recommendations.....	41
Offering full service of support .....	41
Validity of recommendations.....	41
Choice of recommendations to be realised.....	42
Recommendations regarding awareness raising.....	43
Increasing the awareness of non-energy benefits.....	43
Changing attitude concerning the payback period .....	44
Defining three best energy efficiency measures.....	45
Transferring experiences of real examples to enterprises .....	45
Increasing trust in funding systems and energy efficiency measures .....	46



Intensifying communication .....	46
Establishing financing institutes as funding guides .....	47
Recommendations regarding energy advice .....	48
Free/low cost energy advice .....	48
Taking special conditions for enterprises in the Alpine region into account .....	48
Sector-specialised and regionally active energy consultants .....	49
Offering support through the whole refurbishment process .....	50
Promoting authorisation of consultants to apply for the subsidy .....	51
Introducing a temporary energy manager .....	51
Recommendations regarding investment funding .....	52
Focusing on a few funding programmes .....	52
Separating operating organisations .....	52
Simplifying application procedures .....	53
Giving direct grants .....	54
Preferring long-term funding programmes .....	54
Recommendation regarding the change of definition .....	54
Changing definition of SMEs according to energy consumption .....	54
<b>Setting up an energy efficiency network .....</b>	<b>56</b>
Background .....	56
Aim of the energy efficiency network .....	56
Services of the energy efficiency network .....	56
Strengthening transnational cooperation .....	57
Supporting the implementation of recommendations for funding schemes .....	58
Collecting, improving and exchanging work materials .....	59
Driving the transfer of information about real energy efficiency projects between enterprises .....	60
Implementing services of the network into NECPs .....	60
Stakeholders and their roles .....	60
Competences of stakeholders .....	61
Roadmap to set up the energy efficiency network for Alpine enterprises .....	64
Step 1: Developing a concrete work programme .....	64
Step 2: Defining stakeholders .....	64
Step 3: Motivating stakeholders and defining roles .....	64
Step 4: Setting up a website .....	65
<b>List of references .....</b>	<b>66</b>

<b>Annex .....</b>	<b>68</b>
Questionnaires to be filled in by partners .....	68
Awareness raising/information campaign: .....	69
Financial support .....	72
Filled in Questionnaire from Liechtenstein .....	75
Filled in Questionnaire from Austria .....	78
Detailed description of environment subsidy on national territory (Umweltförderung im Inland – UFI) .....	79
Detailed description of klimaaktiv energy efficient companies (klimaaktiv energieeffiziente Betriebe) .....	89

## SUMMARY

The member states of the Alpine region face common challenges and opportunities. There are various programmes with respect to energy efficiency and the use of renewable energy systems in enterprises running in parallel with similar targets without transnational coordination. As a consequence, there is great potential for the exchange of information and experiences to adjust and improve existing activities, on the one hand. On the other hand, these parallel activities consume unnecessary resources.

The European Union launched the macro-regional strategy “EU Strategy for the Alpine Region” (EUSALP). The Notification of the Commission (see “Mitteilung der Kommission”, 2015) sets the target to provide the framework to tackle the challenges in the fields of economy, infrastructure and mobility, energy as well as protection of the environment and resources with innovative initiatives. According to this notification, the actions should be done through close transnational cooperation among the states and regions as well as among non-governmental actors.

The study at hand concerns one of the three thematic focus points in the notification of the Commission: integrative, ecologic frameworks and renewable, reliable energy solutions for the future.

There is one cross-cutting target for the development of a macro-regional governance model for the Alpine region: improvement of the cooperation and coordination of activities.

The mentioned thematic focus and the cross-cutting target are combined and elaborated in this study.

The analysis at hand presents concrete recommendations for activities to contribute to the achievement of the two mentioned targets. These recommendations mainly concern strengths and improvement potentials of good practice with regard to non-binding instruments to increase energy efficiency and the use of renewable energy technologies in enterprises.

In order to implement the recommendations on a transnational level, services and necessary activities of an energy efficiency network were defined. For a successful implementation stakeholders and their roles as well as concrete steps to set up an energy efficiency network are presented in this study.

## Methodology

The status quo in the territory of the Alpine region relating to existing policies and policy instruments as well as non-binding instruments to promote energy efficiency was investigated. Furthermore, the project team conducted telephone interviews with energy consultants and planners of energy efficiency measures of all member states of the EUSALP. The following issues were content of the interviews:

- Kind of subsidy
- Subsidy amount
- Technical and organisational requirements
- Application procedures
- Levels of governance involved
- Possibility to combine concrete funding programme with other funding programmes
- Acceptance of the instruments
- Consideration of specific characteristics and challenges of enterprises in the Alpine region

As the interviewed experts are the link between the supporting schemes and the companies, they could assess the schemes from the professionals' and enterprises' point of view. Every (potential) best practice funding or advisory programme was subjected to a strengths and weaknesses analysis. As a result, the experts of the AEA (Austrian Energy Agency) developed concrete policy recommendations for well-functioning funding and advisory programmes.

## Recommendations for non-binding instruments in the Alpine region

The analysis of funding schemes in the member states of the EUSALP resulted in recommendations for awareness-raising programmes, funded energy advice and investment subsidies:

- Recommendations regarding awareness raising
  - Increasing the awareness of non-energy benefits
  - Changing attitude concerning the payback period
  - Defining three best energy efficiency measures
  - Transferring experiences of real examples to enterprises
  - Increasing trust in funding systems and energy efficiency measures
  - Intensifying communication

- Establishing financing institutes as funding guides
- Recommendations regarding energy advice
  - Free/low cost energy advice
  - Taking special conditions for enterprises in the Alpine region into account
  - Sector-specialised and regionally active energy consultants
  - Offering support through the whole refurbishment process
  - Promoting authorisation of consultants to apply for the subsidy
  - Introducing a temporary energy manager
- Recommendations regarding investment funding
  - Focusing on a few funding programmes
  - Separating operating organisations
  - Simplifying application procedures
  - Giving direct grants
  - Preferring long-term funding programmes
- Recommendation regarding the change of definition
  - Changing definition of SMEs according energy consumptions

## Setting up an energy efficiency network

The Austrian Energy Agency identified the following tasks to be covered by an energy efficiency network for the Alpine region:

- Strengthening transnational cooperation
- Supporting the implementation of recommendations for funding schemes
- Collecting, improving and exchanging work materials
- Driving the transfer of information about real energy efficiency projects between enterprises
- Implementing services of the network into NECPs

The energy efficiency network would consist of the coordinator, the core team, network partners and advisors. The core team would be the centre of all activities and communication processes. To successfully implement recommendations and services, the following well selected stakeholders have to be won as project partners:

- Regional and/or national energy agencies

- Professional associations
- Chambers of commerce, ministries responsible for the funding of awareness-raising activities relating to energy efficiency and renewable energy
- Companies or organisations operating funding programmes
- Leaders of other national or regional networks and other NGOs

In order to set up the energy efficiency network, the following steps are necessary:

Step 1: Developing a concrete work programme

Step 2: Defining stakeholders

Step 3: Motivating stakeholders and defining roles

Step 4: Setting up a website

The guideline “Alpstar Leitfaden – Toward carbon neutral Alps – make best practice minimum standard” (see Abegg, 2013) recommends to keep the theoretical part short and to quickly start realising ideas, because fast results will produce trust in the planned activities and actors concerned.

## INTRODUCTION

### **Enterprises in the Alpine region face challenges to realise energy efficiency measures**

Enterprises in the Alpine region have to react fast to changing competitive and economic situations. A substantial number of enterprises are family enterprises, and due to decentralised living circumstances, decentralised education and working conditions, special corporate structures prevail which implicate specific challenges for policy instruments being effective. In addition to the economic framework – e.g. the development of labour costs, quality of work force, dependency on tourism in many cases, seasonal concentration, energy supply, technological progress, special attention to the environment, high water and energy usage in tourism regions, and pollutant emissions through traffic – digitalisation is another challenge which offers “new” potentials for SMEs (small and medium-sized enterprises) in the Alpine region.

Skiing, mountain tourism and hiking are significant components. Conservation of the landscape and special characteristics of the Alpine region call for a sustainable development of the environment.

This is often a rocky way. Services and offers should be better adapted to new demand; at the same time, enterprises need to gain unique competitive advantages. Often this fails due to the low or missing willingness to cooperate, the necessary concentration on core processes and thus the lack of time for activities beyond. The study at hand deals with activities and required changes of existing systems to support enterprises in becoming energy-efficient. It explains how and why they should devote time and money in processes beyond their core businesses, namely in investing in energy efficiency measures and the use of renewable energies.

In Alpine regions tourism is a major issue for the economy. The study “Added value and employment effects in rural areas and Alpine tourism” (see Rütter-Fischbacher et al, 2016) of the Suisse Tourism Federation shows that overnight stays in urban areas have increased by 23.3 percent in the last ten years, while the mountain areas had losses of 10.1 percent. Branches like the building industry, service companies or detail trade, which supply hotels and restaurants profit indirectly from the tourism sector.

The study also states that in mountain areas 21 percent of the whole gross value added is due to tourism. In large cities this share amounts to 4.6 percent and to 3.2 percent in the remaining areas. This implies that different kinds of measures which are implemented in the tourism sector also have major effects on other branches related to tourism (such as, trade, construction, traffic, telecommunication, material goods production, art and entertainment as well as education and agriculture) (see Haigner et al, 2016). Further important sectors in the Alpine region are bioeconomy, wood processing, health, automotive, and textile manufacturing (see “Manifesto for Competitiveness and Innovation in Alpine Macregion”).

## Existing instruments

Numerous regulations, laws, directives and non-binding instruments promote energy efficiency and a sustainable development of regions. The basis for pushing energy efficiency and promoting the use of renewable energies at European level are the EED (Energy Efficiency Directive (2012/27/EU, EU Clean Energy Package 2016) and the EPBD (Energy Performance of Buildings Directive 2002/91/EG, 2010/31/EG, 2018/844/EU). Every member state has implemented these regulations in its national law.

The non-binding instruments differ in the characteristics themselves, the levels of governance involved, the interaction and cooperation of actors and in the decision-making processes. Each system has its strengths, weaknesses, and success levels. To identify success factors and improvement potential as a support for enterprises in executing energy efficiency measures, an analysis of existing funding schemes was carried out, which shows a large scope of issues to be dealt with. The findings are then described in detail and lead to concrete policy recommendations which can be transferred to the EUSALP.

Further topics closely related to energy efficiency issues and the use of renewable energies in the Alpine region are:

- Research and development
- Mobility
- Education
- Further education
- Monitoring activities



Thus, there should be close cooperation and communication among actors involved in dealing with these topics, and also with other action groups of the EUSALP.

## **Energy efficiency network**

Enterprises in the Alpine region face common challenges. Various initiatives to support businesses in realising energy efficiency measures and investing in renewable energies exist throughout the member states of the EUSALP. The energy efficiency network builds up close cooperation between different stakeholders of the member states, encourages exchange of information and experiences, and pushes the implementation of the developed policy recommendations.

# METHODOLOGY

## Screening of existing studies

At the beginning of the analysis, existing policies and policy instruments as well as non-binding instruments to promote energy efficiency were screened and the status quo of already implemented measures in the territory of the Alpine region was investigated. Existing internal studies and insight gained through different projects as well as information from partners in other countries were analysed.

## Information gathering via questionnaires

As a first step, two questionnaires were set up to gather detailed information about existing awareness raising/information campaigns and financial support, such as the kind of subsidy, amount, duration, technical and organisational requirements to be fulfilled, levels of governance involved etc. (see Annex). Another point of interest was to gain insight into the interactions and processes of several schemes.

This information led to the identification of strengths and weaknesses, key experiences and best practices. Special regard was paid to the collection of lessons learned from activities which were not that successful.

The questionnaire was then sent to the member states of the EUSALP who are well informed about supporting schemes for refurbishment and energy efficiency measures for enterprises. The chosen contacts are experts of national and regional energy agencies as well as universities and ministries who are working on raising awareness, consulting and funding programmes. These contacts were chosen with the support of CasaClima.

Mainly due to the lack of personnel resources only two partner filled in the questionnaire, the others were interviewed by telephone. Additional information to the questionnaires was also gathered by phone.

The analysis of the questionnaires and interviews showed that the funding systems in almost all member states are very comprehensive and often unclear to enterprises. Even expert organisations like energy agencies do not always understand the systems in detail.

Questionnaires were filled in by the following member states of the EUSALP (see Annex):

- Liechtenstein (Amt für Volkswirtschaft)

- Austria (Austrian Energy Agency – AEA).

## **Information gathering via telephone**

Alternatively, the project team conducted interviews via telephone in a second step. The main interview partners were energy consultants and planners of energy efficiency measures. As these experts are often the link between the supporting schemes and the enterprises, they could assess the schemes also from the enterprises' point of view. Interviews with representatives of energy agencies conveyed more detailed information about the status quo. This mixture of perspectives allowed to identify best practices and to combine experiences from all partner countries.

## **Choice of programmes to be analysed**

There are innumerable funding and advisory programmes throughout the member states of the EUSALP. For this study in the first step, we concentrated on identifying best practices of awareness-raising, consulting and funding programmes for supporting energy efficiency measures and the use of renewable energies. The strengths were derived from these best practices.

In the second step, we focused on programmes which have the potential to be best practices but show some weaknesses to be addressed. Potential for improvement was derived from these weaknesses.

## **Strengths and weaknesses analysis**

Every mentioned funding or advisory programme was subjected to a strengths and weaknesses analysis. As a result, the experts at the AEA developed concrete policy recommendations for well-functioning funding and advisory programmes.

## **Presenting first results and encouraging discussion**

The developed policy recommendations were presented at a workshop in March 2019. This workshop brought together decision-makers, stakeholders and multipliers with expertise in the field of energy efficiency in enterprises. The goal of the event was to collect further good practices in the field of energy efficiency and to get feedback to the developed recommendations and the roadmap to an energy efficiency network for the period 2019–2020.

The workshop was divided in three parts: the “pitching session”, a “round-table session” and a final “wrap-up session”. During the “pitching session”, short input presentations were given to provide the participants with “food for thought”. During the “round-table session” three parallel round tables were organised on the three focus topics of interest:

- (Technical) implementation of energy efficiency measures in enterprises
- Financing tools for energy efficiency measures
- Success factors for the implementation and management of national/regional initiatives and programmes accompanying enterprises

The round-table session was based on a world-café design: each participant worked on two focus tables. This allowed participants to give feedback to different topics. Each table was chaired by a moderator and accompanied by a facilitator who supported the documentation of the discussions at a pin board. The workshop was closed by a “wrap-up session”.

The outputs of the workshop were implemented in the existing draft of policy recommendations and the roadmap to build up an energy efficiency network for the Alpine region.

## **BINDING INSTRUMENTS RELATED TO ENERGY EFFICIENCY AND THEIR STATUS OF IMPLEMENTATION**

The basis for pushing energy efficiency and promoting the use renewable energies at European level are the EED (Energy Efficiency Directive 2012/27/EU, EU Clean Energy Package 2016) and the EPBD (Energy Performance of Buildings Directive 2002/91/EG, 2010/31/EG, 2018/844/EU). Every member state has implemented these regulations in its national law. The following sections describe the status of implementation of these directives in the countries of the alpine region.

Information is drawn from the annual report of the countries to the European commission and country reports produced within the Concerted Action EPBD and EED projects as well as reports from the Odyssee and Mure databases. In case of Switzerland the information is based on several studies (see Hierzel et al, 2016) and internet research.

The EPBD and the EED were designed to meet the target for energy efficiency improvements under the 2020 climate and energy package, to boost the energy performance of buildings and a more efficient use of energy at all stages of the energy chain, from production to final consumption. The EPBD (including its recast and amendment) promotes policies that help achieve a highly energy-efficient and decarbonised building stock by 2050, creating a stable environment for investment decisions in new construction and renovation of buildings. Within the EED the national measures must ensure major energy savings for consumers and industry alike. As main actions it is required, on the one hand, that the energy distributors or retail energy sales companies have to achieve 1.5% energy savings per year through the implementation of energy efficiency measures and, on the other hand, that the public sector in EU countries should purchase energy-efficient buildings, products and services. In addition, large companies have to carry out audits of their energy consumption to identify ways of reducing it.

The main supportive measures required (in EPBD and its amendment and in EED) and their status of implementation in the countries of the Alpine region are summarised in the following table:



Requirement EPBD	AT	DE	FR	IT	SI	CH	LI	MC
Setting of minimum energy performance requirements	✓	✓	✓	O	✓	✓	na	na
Definition of nearly zero-energy buildings (2020)	✓	O	✓	✓	✓	✓	na	na
Energy Performance Certificate (EPC)	✓	✓	✓	O	✓	✓	na	na
Long-term renovation strategy	●	●	●	●	●	-	-	-
Technical building systems requirements	✓	✓	-	O	O	na	na	na
Smart Readiness Indicator	-	-	-	-	-	-	-	-
Requirement EED	AT	DE	FR	IT	SI	CH	LI	MC
Purchasing by public bodies	✓	✓	✓	✓	-	na	na	na
Energy efficiency obligation schemes	✓	✓	✓	✓	✓	na	na	na
Energy audits and energy management systems	✓	✓	✓	✓	✓	na	na	na
Energy transformation, transmission and distribution	✓	✓	✓	✓	✓	na	na	na

Legend:

- ✓ Implemented
- Under revision
- O Partly implemented
- Not implemented
- na Not available

- AT Austria
- DE Germany
- FR France
- IT Italy
- SI Slovenia
- CH Switzerland
- LI Liechtenstein
- MC Monaco

## Austria

In Austria the Federal Ministry for Sustainability and Tourism is responsible for the implementation of the EPBD and the EED.

### Status of the implementation of the EPBD

The implementation of the EPBD in Austria has been completed. The EPBD implementation has resulted in further developed building regulations. This implementation resulted in signing into law the mandatory provision of the EPC (the Energy Performance Certificate Provision Act) in April 2012, which applies to apartment or building purchases and rentals, and its tightening through the imposition of penalties for non-compliance later that same year. The Austrian national plan (see Österreichisches Institut für Bautechnik, 2012) for increasing the number of residential and non-residential nearly zero-energy buildings (nZEB) by 2020 was fully implemented in 2014. The national building regulation directive (OIB-Directive 6) as regards energy efficiency is being tightened in two-year steps to achieve the requirements by 2020. The latest update of this Directive has been published in April 2019.

### Status of the implementation of the EED

In Austria energy efficiency obligations and alternative measures are chosen to implement the requirements of the articles in the EED.

The Federal Energy Efficiency Act is the main binding instrument to implement requirements of the EED. It introduces an EEO (Energy Efficiency Obligation) for energy retail sales companies and defines requirements for public buildings, the Federal Government and non-SMEs. These requirements concern the following issues:

- Purchasing or leasing immovable (real estate) property by contracting authorities
- Achieving energy savings at final customers (affects energy retail sales companies)
- Obligation for non-SMEs to conduct a regular external energy audit or to implement an energy management system including a regular internal or external energy audit
- Quality criteria for energy auditors and energy service providers
- Provisions on the installation of meters for heating and cooling
- Penalties for non-compliance with the EEO

The Electricity Act 2010 defines the rules for the following issues:

- Transparency and customer friendliness of bills and promotional material from energy suppliers
- Roll-out of smart meters (technical aspects, timing, consumer rights, etc.)

The Federal Procurement Act comprises the requirement for contracting authorities to purchase only products and services with a high energy efficiency performance.

According to the NEEAP 2017 (see Austrian Energy Agency, 2017) of the Austrian government, 1,276 energy audits in accordance with article 8 of EED were carried out.

## France

In France the Ministry for the Ecological and Inclusive Transition and the Ministry of Territorial Cohesion are both in charge of implementing EPBD. The implementation of EED on the other hand is the sole responsibility of the Ministry for the Ecological and Inclusive Transition.

### Status of the implementation of the EPBD

France has been working on the implementation of the Directive 2010/31/EU since 2010. The law 2010/788 of 12 July 2010 and the following regulation have significantly improved the energy performance certification process. The implementation of the new thermal regulation, RT 20122, describes the nZEB level for new buildings (mandatory only for some public buildings and all new buildings). The next thermal regulation is planned for 2020 and it will contain even more ambitious objectives. Finally, the Energy Transition for Green Growth Act (LTECV) of 17 August 2015 also provided new tools, such as requirements for insulating envelope parts in case of renovation, in order to increase thermal renovation activities. EPCs are required in case of sale or rent.

Additional highlight is the successful set-up of the Energy plus Carbon minus (E+ C-) testing scheme, which has a preparatory function for the future thermal regulation in France.

Although regulations for the renovation of existing buildings are quite ambitious, they are still below nZEB requirements. Therefore, the French Government has developed several quality seals in order to encourage owners to go beyond the regulation requirements: “High Performance Energy 2009” and “Low Energy Consumption Renovation 2009”.

The National Plan for Housing Thermal Renovation is based on three pillars:

- free independent advice for private individuals
- optimised grants based on households incomes
- raising construction skills to handle the cost and quality of renovations



The National Agency for Housing Improvement (ANAH) helps low-income households to finance renovation works.

The encouragement for installing intelligent metering is being deployed widely, but there are no requirements for individual technical building systems.

Sample of policies and measures implemented in the building sector:

- Building codes “RT2012” -new buildings require all new buildings to meet nearly zero-energy building standards (nZEB).
- Building codes -renovation require buildings to undergo deep renovations to meet a global energy performance target.

#### Status of the implementation of the EED

France has adopted its third National Energy Efficiency Action Plan (NEEAP) and has set final consumption target until the end of 2020. The Energy Transition Act of 2015 introduced a provision to reduce final energy consumption between 2012 and 2050 by half. The 2005 Energy Law implemented energy savings obligations for energy companies, with the possibility of trading energy savings certificates. Sample of cross-cutting measures are:

- Energy Saving Certificates (ESC) by obliging energy retailers and fuel suppliers to meet specified energy saving: obligated parties meet these targets by encouraging their customers, mainly in the building sector, to reduce their energy consumption.
- Heat Fund supports the development of the use of biomass, solar thermal energy, recovered energies, and also the development of heat networks using these energies.

The law Energy Transition for Green Growth (LTECV) has introduced a series of measures to reduce greenhouse gas emissions, energy consumption and improve energy efficiency at national level.

The targets of energy consumption have been set and a renovation strategy as well as a decree dealing with energy performance criterion integration in public contracts for the purchase of products, services and buildings by public bodies has been published. Several regulations are adopted in order to fully transpose the EED. Especially numerous decrees and orders have been taken to adapt the existing white certificate scheme to the requirements of the EED.

The Energy Renovation National Plan (Plan National de Rénovation Energétique) introduces local one-stop shops (points rénovation information services - PRIS) to advise dwelling owners in their renovation

works plans, addressing the long-term strategy for mobilising investment in the renovation of buildings (Art. 4 EED).

Since 2013, the support for building renovation in the residential sector has been organised through a unique national platform (one-stop shop), which is considered the most relevant source of information guiding building owners towards refurbishment activities.

The “Green loans” system Scheme was designed for SMEs to help them increase their energy efficiency (EE). Four categories of EE equipment can be financed through these loans:

- EE lighting systems
- Heating (e.g. heat pumps)
- Air-conditioning
- Electric motorisation: efficient motors

According to the French NEEAP of 2017 (see Rapport de la France, 2017), 2,747 enterprises have had an energy audit according to Article 8 of the EED.

## Germany

Responsibility for the implementation of the EPBD and EED lies with the Federal Ministry of Economic Affairs and Energy in Germany. However, the inspection of boilers is the responsibility of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

### Status of the implementation of the EPBD

Within the current Energy Saving Ordinance (EnEV) 2013 the new requirements of the EPBD, Directive 2010/31/EU are implemented. The strengthened minimum requirements, which will lead towards nZEB, were fixed and came into force for all new buildings from 1 January 2016 (at point of application for building permit). In addition to the requirements of the Energy Saving Ordinance, the use of renewable energy for heating in new buildings has become compulsory at national level according to the Renewable Energy Heat Act. The obligation has been extended to renovations in a few federal states. The nearly zero-energy buildings (nZEBs) are addressed in the amended Energy Saving Act.

Sample of policies and measures implemented in the building sector:

- Energy Efficiency Incentive programme for modernisation of heating and ventilation systems
- Energy Saving Ordinance (EnEV) for tightening of requirements for new buildings

With the strengthening of the new building requirements valid from 1 January 2016, Germany took a step towards the future nZEB level. The requirements for new buildings are set by the maximum primary energy demand of 75% of the value in 2014.

Requirements to upgrade the building stock comprise conditional obligations in case of relevant refurbishments; mandatory update requirements are to be met without any triggering measures.

KfW Energy-efficient Construction Programme provides support for new buildings and renovation that surpass the applicable building standards.

Caritas offers free energy efficiency checks for low-income households.

#### Status of the implementation of the EED

The EED was translated through changes to several national laws. A key piece of legislation is the Act on Energy Services and Energy Efficiency Measures (Energiedienstleistungsgesetz, EDL-G), which was amended in April 2015 to transpose several aspects of the EED. The German National Building Renovation Strategy has been communicated to the Commission. The update of this Strategy is part of the National Energy Efficiency Action Plan (NEEAP).

The German Federal Government has launched the National Action Plan on Energy Efficiency, a comprehensive strategy to further increase Germany's energy efficiency. Several programmes have been established to further the availability and affordability of high-quality energy audits for SMEs and private households. The government has passed its proposal for the Act on the Digitalisation of the Energy Transformation (Gesetz zur Digitalisierung der Energiewende GDEW), which sets the regulatory framework for inter alia the German smart meter roll-out.

Regarding Article 12 of EED, utilities are obliged by the EDL-G to provide information regarding energy efficiency measures to consumers with every bill.

Germany has chosen the alternative approach to the implementation of Article 5. Among the measures are information initiatives, federal support programmes funding energy consulting for municipalities (BAFA), development of energy efficiency contracting projects, development of municipal action plans and renovation plans as well as the construction and renovation of municipal buildings and infrastructure blocks (KfW) via grants and loans.

The Energy Efficiency Fund (EEF) is part of the German “Energiewende” (energy transition) that follows the goal to reduce primary energy consumption. The fund consists of currently 23 policy measures in-

cluding funding schemes and educational activities. Beneficiaries are businesses, households and municipalities.

The funding programme "Energy consulting in SME" supports qualified energy consulting, which is intended to identify potential savings and measures to improve energy efficiency of small and medium-sized enterprises.

The introduced network for energy efficiency aims to initiate around 500 new networks by 2020 to support the increase of energy efficiency in industry, trade and commerce.

All provisions regarding energy efficiency in procurement have been transposed to national law. Furthermore, the Federal Government, the German Länder and municipalities are cooperating in the "Alliance on Sustainable Procurement" (Allianz für Nachhaltige Beschaffung) in view of supporting public bodies at sub-federal level in procuring energy-efficient products and services.

It is estimated that by 2016, approximately 60,000 energy audits or energy management systems (EMS) have been implemented (see Bundesministerium für Wirtschaft und Energie, 2017).

## Italy

The overall responsibility for the implementation of EPBD and EED in Italy lies with the Ministry for Economic Development. Nevertheless, Italian regions and autonomous provinces (a total of 21 authorities) have final jurisdiction in energy topics. The recent legislation provided, with a unanimous consensus from these authorities, an advanced harmonisation of the EPBD implementation all over the national territory and took implementation a step forward.

### Status of the implementation of the EPBD

The implementation of EPBD in Italy started by the Decree 192/2005 and was modified by Legislative Decree 311/2006. It was followed by a number of complementary legal acts updating the minimum requirements for buildings, building components and technical building systems, and providing guidelines for energy performance certification (2009). Law 90/2013 implemented Directive 2010/31/EU, introducing significant changes to the first 2005 implementation. In June 2015, three inter-ministerial decrees (26 June 2015) completed the EPBD transposition, which also established stricter minimum requirements for new buildings and major renovations, defined nZEB as well as rules for taking renewable energy sources (RES) in buildings into account.

Sample of policies and measures implemented in the building sector:

- Fiscal incentives for existing buildings
- Minimum requirements for new and for existing buildings which undergo major renovation according to the type of building and the climatic area
- The programme for improving the energy performance of the central public administration (PA) buildings

#### Status of the implementation of the EED

The fourth National Energy Efficiency Action Plan, which was submitted in 2017, set the final end-use energy savings target for 2020. The main energy policies encompassed are incentive mechanisms (White Certificates, Thermal Account, fiscal deductions for energy renovation and for building renovation) and legislative measures (Legislative Decree 192/05, with reference to the Minimum Energy Efficiency Requirements for buildings). The White Certificates mechanism was lately updated by the Ministerial Decree of 11 January 2017 establishing the quantitative national energy savings objectives to be achieved between 2017 and 2020, and the criteria and methods for ensuring access to the Energy Efficiency Certificates mechanism were redefined.

The Thermal Account mechanism was updated by Ministerial Decree to promote greater access to resources for enterprises, households and public administration. The implementing regulatory provisions were also completed with an impact on the types of investment for which incentives are provided (e.g. conversion of public buildings into nZEBs).

Sample of cross-cutting measures:

- obligation scheme for electricity and gas distributors
- incentive scheme to encourage PA and private parties to implement energy efficiency improvement actions in buildings and technical installations as well as for the generation of renewable thermal energy. The actions may be carried out via Energy Service Contracting (ESCO) by signing an energy performance contract (PA) or through an energy service contract.

The Budget Law 2018 confirmed the tax deduction scheme (Ecobonus) to promote energy renovation of the existing building stock.

The Guidelines for Energy Performance Contracts (EPC) for the buildings of the public administration developed by ENEA (Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sos-

tenibile) provide public administrators with a tool to support and guide the drafting of energy performance contracts specific to the individual project, consistent with the latest legislation.

15,685 audits (7 516 companies) were carried out by the end of June 2016 (see Janssen, 2017); approximately 63% of energy audits were made by large enterprises.

## Slovenia

The Ministry of Infrastructure is responsible for the implementation of EPBD and EED in Slovenia. The Ministry for Environment and Spatial Planning as well as the Slovenian Energy Agency are also involved in the implementation of the EED. The Slovenian Environmental Public Fund (Eco-Fund) supports the ministries through several instruments and programmes related to energy efficiency.

### Status of the implementation of the EPBD

The EPBD was transposed into national legislation by the Building Construction Act, the Environmental Protection Act and the amended Energy Act. The revision of the EPBD is still in progress in Slovenia. The minimum requirements for the performance of the buildings focus on bioclimatic architectural concepts and low energy losses. Public buildings must comply with 10% more strict requirements than private buildings. The use of renewable energy is mandatory in all new buildings.

The Slovenian Energy Act and relating regulations require that an EPC is mandatory for newly-built buildings at point of sale or rent and for public buildings with the exemption of buildings protected under cultural heritage.

### Status of the implementation of the EED

Several changes to the national laws had to be made in order to implement the EED. The new Energy Act law (Official Gazette, No. 17/14 in 81/15) as well as legislation regarding buying and renting houses by the public sector (Article 6) were among these laws.

Slovenia has chosen to apply the provisions of Article 7(9) of the EED through selecting the combination of alternative policy measures and an energy efficiency obligation scheme (EEOS) to meet the national target. Obligated parties under the EEOS are energy suppliers of electricity, heat, gas and liquid and solid fuels to final customers, without exceptions for small-scale suppliers. The final customers are public and service sectors, industry and – with respect to some measures – households.

The Public Fund provides grants for improving energy efficiency through financing investments in energy efficiency, mostly in households. The funds for subsidies are collected from the contribution fee.

The non-refundable subsidies are offered to households for renovations (thermal envelope and heating systems).

The long-term Renovation Strategy for the renovation of buildings (Energy Efficiency Action Plan – EEAP 2014) was published in 2015. The obligation for all public bodies to perform energy book-keeping and achieve EE and RES goals in the building owned and used by them have been set by a decree.

## Switzerland

Switzerland works closely with the European Union on environmental issues. It has been a member of the European Environment Agency since April 2006 and has been able to consolidate its relations with the EU in various sectors. Swiss environmental law is already largely aligned with EU legislation in a number of areas.

### [Status of the implementation of energy efficiency in the buildings according to the EPBD](#)

Most of the articles in the EPBD are included in similar form in the 2008 energy-related regulation of the Swiss Cantons (MuKE). For example, the MuKE defines numerous system and individual requirements for building components and building-technical systems, which in their total aim at the total energy efficiency of the buildings. The levels of the individual requirements were also defined on the basis of studies on the cost optimality of energy measures, as requested by the EPBD, without, however, publishing in detail the calculation bases. The Energy Performance Certificate (EPC) of the building is also included in MuKE 2008; yet, unlike the EPBD, this is voluntary (in some Swiss cantons providing an EPC is considered necessary at the point of sale or changing the heating systems). The Swiss energy label Minergie A and „Plusenergie-Gebäude“ are comparable to the definitions of nZEB.

### [Status of the implementation according to the EED](#)

On 25 May 2011, Switzerland decided to phase out nuclear power on a step-by-step basis and to build up sustainable energy systems, and energy efficiency was identified to be a key driver of this system.

Existing instruments to reduce CO<sub>2</sub> emissions include voluntary target agreements with companies, especially in combination with an exemption from the CO<sub>2</sub> tax and financial support instruments (particular-



ly competitive tenders). There are additional adjoining measures to support companies in the context of the development of the SwissEnergy Programme, namely providing information, advice and training. This includes the funding programme “Energetic Process integration/waste heat utilisation”, which aims to support energy-intensive firms in executing business-wise less attractive efficiency measures. SMEs are supported by the development of working tools and training opportunities for factory and process optimisation. Best practice example among regulation in small and medium-sized companies are energy audits.

The idea of energy efficiency networks in Germany originates in Switzerland. The companies have established this network in 1987. The first Swiss network was “Energy Model Zurich”. The Swiss Energy Agency for industry would act as a link within the negotiations for targeting CO<sub>2</sub> reduction between the government and the companies.

The Energy Efficiency and Renewable Action Plans of 2008 led to the implementation of a series of measures aimed at improving market conditions for renewable energy technologies. These measures included financial support for the replacement of existing heating systems with renewable energy (e.g. heat pumps and biomass) and revision of the building standard for new buildings:

- Financial support for insulation of buildings (via the building programme);
- Financial support for renewable heat and waste heat (via global budgets distributed to the cantons dedicated for supporting measures);
- Biomass strategy (sustainable use of biomass);
- Improvement of spatial planning instruments for renewable energy technologies;
- Strengthening of renewable energy research;
- Acceleration of technology transfer by supporting pilot and demonstration projects for renewable energy;
- Improved coordination of education and training.



## NON-BINDING INSTRUMENTS TO INCREASE ENERGY EFFICIENCY

Every member state has implemented non-binding instruments which promote and subsidise energy efficiency measures and the use of renewable energies. These non-binding instruments differ in their characteristics, levels of governance involved, interaction and cooperation of actors, and application processes. Each system has its specific issues, strengths, weaknesses, and success levels. Depending on the relevance of the mentioned characteristics for the analysis, certain issues were selected to be described. This study at hand focuses on best practices of funding energy efficiency and takes into account improvement potentials.

The following non-binding instruments support the realisation of energy efficiency measures and the use of renewable energies:

### **Awareness-raising programmes**

Most SMEs are not aware of which specific actions could be set in order to save energy costs and to be climate-friendly. They, therefore, need to be informed about possible energy efficiency measures. Suitable communication strategies are, for instance, sector-specific events with good practice examples, site visits, focus on energy benefits and non-energy benefits, etc. Only when companies are aware of savings opportunities and their positive effects they will be motivated to benefit from further programmes, such as energy consultancy and investment funding. Therefore, an awareness-raising initiative is an essential instrument to convince enterprises of the necessity and benefits of energy efficiency measures and the use of renewable energies.

### **Energy consultancy and audit programmes**

Subsidised energy audits enable enterprises to know their energy consumption, their distribution of energy consumption and the largest energy consumers. Based on this information the energy audit or energy consultancy supports SMEs to identify concrete measures to improve their energy efficiency and to implement renewable energy systems.

In order to offer targeted and well-functioning energy efficiency concepts, sector-specialised energy consultants, who are technically highly qualified, are decisive for the acceptance of the said concepts. Addi-



tionally, energy consultants should have a detailed knowledge of the existing investment subsidies and further support possibilities for enterprises to advise them.

In this context, qualification programmes for energy auditors and consultants should be part of support programmes and be funded by national organisations.

### **Investment subsidies**

As soon as an enterprise is ready to implement the suggested energy efficiency measures and renewable energy systems, it is important for the actual execution that there are investment subsidies, which enable investments to be economically viable.

For best results, the supporting system for enterprises to realise energy efficiency measures and to use renewable energies offers elements of all three non-binding instruments. In two member states this is the case on a large scale (Austria and Italy). In other countries, however, there is still room for improvement in this context.

The following section describes supporting non-binding instruments of the EUSALP member states by focusing on best practices and potential for improvement, and includes the identified strengths and weaknesses. Experience gained and qualitative assessments come from interviews with relevant stakeholders dealing with policy instruments on a regular basis.

## **Austria**

In Austria several programmes are available supporting the companies to implement energy efficiency measures. The main instruments are the following:

Awareness-raising programme:

- klimaaktiv energy-efficient enterprises

Energy audit programme:

- Regional consulting programmes

Investment subsidy programmes:

- National Environment Subsidy
- Refurbishment Campaign

### [klimaaktiv energy-efficient enterprises](#)

The target of this programme is to inform and advise enterprises in increasing their energy efficiency and using renewable energies, and at the same time to raise awareness of enterprises for these issues. klimaaktiv pushes the development and the market launch of innovative technologies in future-oriented subject areas.

The campaign “klimaaktiv energy-efficient companies” is a sub-category of the Austrian climate protection initiative klimaaktiv. With its rich information and quality standards, klimaaktiv offers concrete support in aligning companies to energy efficiency. Together with the federal states, klimaaktiv provides a comprehensive, neutral advisory network. Especially to companies, klimaaktiv offers assistance in the areas of building and refurbishing, saving energy (production, purchase, energy management), renewable energies and mobility:

- Product-neutral standards and advice tools
- Know-how exchange with leading experts
- Subsidised advice with realisation grants – partly in cooperation with the federal states of Austria
- Collective public relations work in an Austrian network

One of the focuses of this programme is the advisory network. klimaaktiv has close cooperation with the energy agencies/energy consultancy organisations of the federal states. These agencies have energy consultants who offer energy advice in companies for klimaaktiv.

### **Award for energy-efficient measures**

Since 2008, more than 350 energy efficiency measures have been collected in the context of an annual competition where companies can submit their measures and apply for an award.

In 2018, the new focus of the contest was on the overall view of energy systems: submissions of companies included their comprehensive approach to improve energy efficiency or to advance the use of renewable energies in their production processes. This award attracts considerable attention and is well established.

### *Practicability*

Basically, all information is available online. The management of klimaaktiv energy-efficient companies hands out information about the services to the regional partners (per emails, phone calls). This information is communicated mainly to the energy advisors of the network of the regional partners, but also to their mailing list of companies. The management is also often invited to network meetings or other events with energy advisors and companies to present the services of klimaaktiv energy-efficient companies. In this federal states field trips, network meetings etc. are organised for companies and energy advisors. These activities are very well received.

As experience shows long-lasting effects of energy efficiency measures and the fact that investments have to be calculated for a longer period, have to be communicated more intensively for companies to become more open-minded towards innovative technologies.

### *Strengths and weaknesses*

The following strengths were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
Targeted information and service for enterprises Regular information for energy agencies and energy consultants Practical advice tools Organisation of field trips, network meetings for enterprises Qualification activities for advisors	It is time consuming to build up cooperation with regional energy agencies and their consultants.

### Regional consulting programmes

The regional consulting programmes provide funded on-site consultancy for environmental and energy efficiency issues, which ideally complements the steps to raise awareness successfully. 50% of the con-

sulting costs are paid by the company and the other 50% can be obtained by the advisor from the regional consulting programme.

### *Practicability*

In most of the federal states the energy advisors who offer funded advice are listed at the regional energy agencies. These advisors are very carefully chosen to be able to offer targeted and high-quality consulting to the enterprises. The energy advisors also know the funding possibilities of investments and assist enterprises in getting subsidy. They are the link between the energy audit or consultancy to the realisation and subsidy of measures. If energy consultants were to provide more sector-specific advice, the quality of audits and consultancies could be strengthened, and the rate of realisation of energy efficiency measures and the use of renewable energy systems would grow.

### *Strengths and weaknesses*

<b>Strengths</b>	<b>Weaknesses</b>
Close cooperation with regional energy agencies and regional energy consultants in many federal states	The cooperation between the regional programmes and their consultants in some federal states is not working very well.
Selected, well-trained and specialised energy consultants in some federal states	Selection of highly qualified energy advisors in some federal states is missing.
Enterprises do not have to apply for funding. They get a direct discount.	Sector-specific consulting is missing in some cases.

### National Environment Subsidy

As soon as an enterprise is ready to implement the suggested energy efficiency measures and renewable energy systems, they can apply for direct grants for their investments in those measures or systems. The National Environment Subsidy programme (Umweltförderung im Inland – UFI) provides direct grants for 13 different subsidy areas with subtopics. The funding body of the UFI is the Ministry for Sustainability and Tourism (BMNT). The implementation and management of its funding programmes is carried out by the Kommunalkredit Public Consulting (KPC).



The main areas in the field of energy efficiency and renewable energy systems are the following:

- Saving energy (energy-efficient cooling, refrigerating plants and air conditioning systems, energy-saving measures like heat recovery, lighting)
- Buildings (Refurbishment Campaign for single measures or comprehensive refurbishment, solar thermal plants for heating and cooling)
- Vehicles (electric cars, two-wheelers, bicycles, etc.)
- Modell regions
- Mobility management (company mobility management, e-charging stations, mobility management in the areas of leisure and tourism, etc.)
- Electricity (biomass power and heat generation, natural gas power and heat generation, optimisation of neighbour heating plant, electricity production isolated systems)
- Heat (new construction and optimisation of heating systems)
- Resources and renewable resources

Small and medium-sized enterprises as well as large enterprises can apply for a subsidy in the framework of the UFI. The subsidy sometimes varies in different percentages of eligible investment costs or additional investment costs for environment-friendly aspects. The subsidy for SMEs is often 5% higher than the subsidy for large enterprises.

The subsidy rate depends on the specific measures and ranges from 20 to 30% of the investment costs or the additional investment costs for large enterprises, and 25 to 35% for SMEs. In some cases enterprises can gain additional funding of 5% if the enterprise is EMAS certified.

The investment costs contain costs for the planning and installing of the plant or device itself.

Additional (environment-related) investment costs are investment costs less costs for similar plants driven by fossil fuels, or similar plants without an environmental benefit.

Measures are funded if the payback time is longer than three years.

There is close cooperation between the governmental funding (UFI, Refurbishment Campaign, etc.) and the support programmes of the federal states of Austria. Through this cooperation enterprises can obtain additional funding for specific measures in some federal states, for which application is also possible – almost automatically – via the KPC.

### *Practicability*

Information about the existing subsidy offers is available on the website of the KPC. Interviews have shown the difficulties of companies with little resources to read through all details, to understand the conditions and to apply for funding. Thus, the support of companies is crucial and is taken over by the energy consultants of the regional consulting programmes.

The funding body of the UFI, the Ministry for Sustainability and Tourism (BMNT), authorises the proposal of the KPC. The meetings of the commission to authorise proposals take place merely three to four times a year. Consequently, the process time is protracted (on average 181 days) (see Kraner et al, 2016) and enterprises have to wait quite a long time for the approval.

In some federal states the realisation rate of energy efficiency measures suggested in energy audits is quite high in comparison to other federal states. The reason is that companies need information and regular support in the planning phase and during the realisation of efficiency measures. In federal states with high realisation rate energy consultants have taken over these activities. So, the best communicators for the subsidy system are the energy consultants of the regional energy consulting organisations of the federal states.

### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
Application for national and regional subsidies via one single application portal Direct grants for enterprises Regular support by energy consultants not only in the planning phase, but also during the realisation phase in some federal states	Extensive application procedure (subsidy for many enterprises too low compared to the necessary effort to apply) Long process time until the approval

### Refurbishment Campaign (Sanierungsoffensive)

This programme provides funding for implementing thermal refurbishment measures for private households and companies. According to the requirements of this funding program, the thermal quality of building components has to be better than the legal requirements in the OIB Guideline 6. Furthermore, heat energy demand has to be decreased by at least 50%.

The subsidy accounts for up to 30% of the eligible costs.

The Kommunalkredit Public Consulting also operates the funding programme Refurbishment Campaign.

### *Strengths and weaknesses*

The strengths and weaknesses of the Refurbishment Campaign are identical to the ones of the UFI.

## **France**

In France two main programmes were identified as best practices in supporting enterprises in realising energy efficiency measures and in strengthening the use of renewable energies. The main instruments are the following:

Energy audit programme:

- Subsidised feasibility studies

Investment subsidy programme:

- White Certificate Scheme (Certificat d'Economies d'Energie – CEE)

Local agencies in every region subsidise projects on various topics and levels. The White Certificate Scheme is the main funding instrument.

### Subsidised feasibility studies

Local agencies in every region subsidise projects in various topics and at varying levels. The topics of the feasibility studies mainly concern renewable energies and combined heat and power and heat recovery. Specific templates for the feasibility studies are available.

Furthermore, funding is available for the realisation of measures like the use of renewable energy (wood, solar thermal energy, geothermal energy), district heating and waste heat. In some regions, like Rhône-Alpes, enterprises have to apply for funding through a call for projects.



### *Practicability*

The funding rates of the regional funding systems are lower than the amount which can be gained through the trade with White Certificates.

### White Certificate Scheme (Certificat d'Économies d'Énergie – CEE)

Energy suppliers (suppliers of electricity, gas, oil, heat, cold, fuel) are obliged to reach specific energy savings. These savings can be gained through measures at their own facilities or by encouraging their customers to save energy. There is no restriction to certain measures. The energy supplier has the possibility to inform their customers about the reduction of the energy consumption or to provide them with incentives like price reductions for the realisation of measures etc. The savings are assessed in kWh cumac (cumulated and actualised) and correspond to the energy savings cumulated over the lifetime of the implemented operation and actualised at a rate of 4% (see ADEME, 2019). The economic value of a certificate is set as euro cent per kWh cumac.

### *Practicability*

The White Certificate Scheme in France works quite well. The scheme was introduced more than ten years ago. An evaluation takes place every three years. The obligatory energy saving targets for energy suppliers have been increased over the years. Consequently, energy suppliers have raised their energy prices to cover the costs for setting measures in line with the White Certificate Scheme.

An uncertainty factor is that prices of White Certificates fluctuate.

### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
Support for energy suppliers through a list of ratified activities  A good way of driving state-of-the-art energy efficiency systems to develop very quickly without any public financial means	Obligatory energy saving targets are critically high. Fluctuating prices of White Certificates

## Germany

In Germany two main programmes were identified as best practices in supporting enterprises in realising energy efficiency measures and in facilitating the use of renewable energies. The main instruments are the following:

Investment subsidy programme:

- Saxony-Anhalt Energy (Sachsen-Anhalt Energie)
- Climate protection plus (Klimaschutz plus)

### Saxony-Anhalt Energy (Sachsen-Anhalt Energie)

#### *Description and details of the policy instrument*

The Federal State of Saxony-Anhalt and the Investment Bank Saxony-Anhalt support companies in projects to reduce CO<sub>2</sub> emissions. These measures can be complemented by the use of renewable energies.

The following measures are eligible:

- Replacement of inefficient appliances, plants and power units by new efficient ones
- Energetic optimisation of processes, air pressure and pump systems, heating, cooling and vacuum systems and systems for drying, separation and concentration
- Plants for producing electricity or heat from renewable energies, electricity and heat storages
- The specific end energy savings (primary energy saving of power to heat plants) have to be at least 20% compared to the average of the last three years' electricity consumption.

In the frame of the de-minimis rule (up to 200,000 Euro in three years), companies can gain a subsidy of up to 50% of the investment. Furthermore, they can get 35 to 70% of the additional investment costs when they are realising larger investments.

This funding is available for all companies – private companies, municipal companies and energy services companies – which offer energy savings contracting for companies. SMEs are funded with priority. Large companies receive a smaller percentage of funding.

Small and medium-sized enterprises can get a bonus of a further 5% if they share their experience of the realised measures with other companies, for example, via the Chambers, through participation in energy efficiency networks or presentation at specific events.

### *Practicability*

The Federal State of Saxony-Anhalt is the financier of this funding programme, which is operated by the Investment Bank Saxony-Anhalt. This cooperation works very well. The application procedure is not very complicated and the amount of the subsidy is very attractive for the companies.

### *Strengths and weaknesses*

The following strengths were identified by the interview partners.

Strengths	Weaknesses
<p>Additional subsidy for SMEs which share their experience</p> <p>High and thus attractive subsidy rate</p> <p>Additional subsidy is available if larger investments (more comprehensive measures) are realised.</p> <p>Easy application procedure</p> <p>Good cooperation between the Federal State of Saxony-Anhalt and the Investment Bank Saxony-Anhalt</p> <p>The Investment Bank Saxony-Anhalt is qualified to assess grant applications.</p>	

## Climate protection plus (Klimaschutz plus)

### *Description and details of the policy instrument*

The Ministry of the Environment, Climate Protection and the Energy Sector Baden-Württemberg subsidises the following measures:

- Renewal of heating systems based on renewable energies incl. use of waste heat
- Improvement of the thermal insulation
- Efficiency measures for the lighting system
- Efficiency measures for the ventilation system.

Companies receive 50 euros per tonne of CO<sub>2</sub> avoided. The maximum subsidy amount is 30% of the investment costs. With an additional bonus the maximum subsidy can amount to 46.2%.

### *Practicability*

This subsidy programme is basically good and attractive for companies; however, the available money is not exploited because information about obtainable programmes is so poor. The reason is that there are so many different programmes, and target groups are not aware of what exactly is available, as research into this topic requires substantial time resources. Indeed, there are online portals where all programmes are listed, but information is not up to date due to frequent changes.

The Federal Office for Economic Affairs and Export Control subsidises 80% of energy consulting costs, but there are merely 2,000 consultations in the whole of Germany.

Whereas a specialised energy consultant only needs a limited time for submitting the application for a subsidised measure, companies are overstrained by the same process and take much longer

### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
Relatively high subsidy rate	Too many subsidy schemes in general Poor publication of the subsidy programme

	<p>Complex application procedure</p> <p>Companies are overstrained by the application procedure</p>
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## Italy

In Italy two main non-binding programmes were identified as best practices in supporting enterprises in realising energy efficiency measures and using renewable energies, which supplement each other:

Awareness-raising and energy audit programme:

- ClimateFactory (KlimaFactory)

Investment subsidy programme:

- White Certificates Scheme (Certificat d'Economies d'Energie – CEE)

### ClimateFactory (Klimafactory)

#### *Description and details of the policy instrument*

Within the programme KlimaFactory the Agency for Energy South Tyrol – KlimaHaus supports enterprises in improving their energetical performance and in implementing an energy management system. The Agency accompanies enterprises which recognise the importance of energy efficiency being implemented in the strategic business management. KlimaFactory offers a web-based tool for self-rating and comparison of energy performance indicators on the basis of typical values of the specific branches. Execution of an energy audit is provided by an expert of the Agency of Energy South Tyrol – KlimaHaus, in the context of which energy-saving potentials are determined and suitable improvement measures are identified.

In addition, the programme offers best practices and exchange of experience with branch specialists and technical experts at workshops, qualification events and symposia.

### *Practicability*

Interviews show that the programme is well accepted by the target group. Experienced could be gathered from similar initiatives like klimaaktiv in Austria.

### *Strengths and weaknesses*

Prices for these services depend on the size of the enterprise and the complexity of the case, and start at 1.200 euros.

<b>Strengths</b>	<b>Weaknesses</b>
Experiences of klimaaktiv energy-efficient companies were incorporated. Competent support	The enterprise has to fully bear the costs.

### White Certificate Scheme (WhC)

#### *Description and details of the policy instrument*

In Italy the White Certificate Scheme (WhC) is the main funding instrument. Electricity or gas suppliers with more than 50,000 final customers are obliged to realise certain energy-saving measures at their customers' site. For these realised savings an enterprise can gain one WhC for one saved tonne of oil equivalent. The energy supplier can use the certificate for their own target compliance, or the enterprise can sell the certificate on the market to other enterprises which are obliged to fulfil targets.

The economic value of a certificate was originally set at 100 euros/EES (Energy Efficiency Security).

Beside the energy suppliers, for which energy-saving measures are mandatory, other energy suppliers, energy service companies, businesses or organisations, which have a responsible energy manager or an ISO 50001 energy management system in place, can gain White Certificates.

In the manufacturing sector enterprises are liable to name an energy manager if their energy consumption exceeds 10,000 tonnes of oil equivalent.

The measures covered by the White Certificates pertain to the reduction of the use of electricity, natural gas or other fuels (e.g. transport). There is no limitation to certain efficiency measures or sectors.

### *Practicability*

Interviews show that the White Certificates Scheme is quite well accepted by enterprises. The trust in Energy Service Companies (ESCOs), however, is quite low and, thus, the realisation of energy efficiency measures has upside potential. Information and communication towards companies have to be strengthened to increase trust in ESCOs.

### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
High acceptance by large enterprises	Medium-sized enterprises are not that encouraged.

## **Liechtenstein**

In Liechtenstein relevant information is widespread, and energy efficiency measures and renewable energies can be funded via the Energy Efficiency Law.

### [Energy funding in Liechtenstein](#)

#### *Description and details of the policy instrument*

The government as the funding body of the energy funding in Liechtenstein subsidises the following measures:

- Thermal refurbishment of building
- MinergeP and MinergieA certified buildings
- Building service technologies
- Combined heat and power plants
- Thermal solar collectors

- Heat pump boilers
- Photovoltaic plants
- Demonstration objects
- Other plants and measures

### *Practicability*

Enterprises only receive funding of their energy efficiency measures or the installation of renewable energy systems if a professional planning and realisation of the measures is ensured.

### *Strengths and weaknesses*

<b>Strengths</b>	<b>Weaknesses</b>
Quality criteria for the planning and the realisation of measures	

## **Slovenia**

In Slovenia there are several instruments for supporting measures for sustainable energy development within companies. The Eco Fund, a funding body, was identified as a potential best practice example.

### *Description and details of the policy instrument*

The interviews showed that the main instrument to facilitate investments in energy efficiency, renewable energy sources and other areas of sustainable development is the national funding programme implemented by the Slovenian Eco Fund, which is an independent legal entity. The Ministry of the Environment and Spatial Planning represents the majority in the supervisory board.

The Eco Fund offers loans for investments in

- environmental infrastructure,
- environmentally sound technologies and products,
- energy efficiency,



- energy saving investments, and
- the use of renewable energy sources

to municipalities and/or providers of public utility services, enterprises, other legal entities, and sole traders.

The Eco Fund offers grants for investments in electric cars and buses for public transport operating on compressed natural gas or biogas to municipalities and/or providers of public utility services, enterprises, and other legal entities.

Companies also have the possibility to organise consultation meetings with Eco Fund representatives on-site.

#### *Practicability*

The main access to up-to-date material is provided through the Eco Fund tender information portal available at <https://www.ekosklad.si/>. The information about the subsidy programme is communicated via various channels of public media (TV, magazines, social media, such as Facebook, LinkedIn, etc.). In addition, suppliers of energy-saving, renewable energy or other relevant products or services promote the funding possibility of the Eco Fund through their own channels. They also frequently offer consultation and assistance with the application procedure to their clients.

Frequently, enterprises engaged to implement energy efficiency measures or to install renewable energy systems have the competences to undertake the entire application and tendering process. Thus, the beneficiary are relieved from carrying out these activities by themselves.

The Eco Fund has adequate internal capacity and expertise in the relevant areas to be able to undertake the assessment of funding applications.

Other relevant instruments in Slovenia include e.g. consultation events as well as trainings implemented through co-financed national and international donor funding programmes. The network of local energy agencies (KLEAS) also frequently provides support to companies within their area, but most frequently as a payable service.

The programme is not particularly adapted to SMEs, which often lack the capacity to carry out activities related to obtaining co-financing. Enterprises often are deficient in understanding the potentials and benefits of applying for energy efficiency measures and renewable energy systems installation.

The interview with the expert shows that enterprises very often do not have a detailed energy audit, which would be the basis for developing energy efficiency measures. Many of these enterprises would not consider paying for an audit, even if it might be just a fraction of the following investment costs. The target group is generally sceptical towards funding programmes.

Already at present, companies have all the means to obtain relatively high co-funding rates for their investment in various measures associated with sustainable development. The process is straightforward and expert guidance is offered throughout.

#### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
<p>Very well developed</p> <p>The Eco Fund has adequate internal capacity and expertise in all before-mentioned areas.</p> <p>Broad communication via public media (TV, magazines, Facebook, LinkedIn, etc.)</p> <p>Consultation meetings with Eco Fund experts on-site</p> <p>Straightforward application process</p> <p>Expert guidance is available.</p> <p>Relatively high subsidy rates</p>	<p>Eco Fund is not particularly targeted towards SMEs.</p> <p>Enterprises lack the capacity for carrying out application for funding.</p> <p>Enterprises lack the understanding of saving potentials.</p> <p>Missing trust in funding programmes in general</p>

## Switzerland

In Switzerland two main programmes supporting the realisation of energy efficiency measures and the use of renewable energies were identified to have the potential to be best practice examples:

Energy audit programme:

- PEIK – professional energy consultation for SMEs

Investment subsidy programme:

- ProKilowatt

### PEIK – the professional energy consultation for SMEs

#### *Description and details of the policy instrument*

The programme PEIK offers funded energy consultation in three steps to support the identification and realisation of energy efficiency measures (see Swiss Federal Office of Energy 2019):

The first step consists of the identification of saving potentials and the finding of energy consultants.

The second step concerns the analyses of the enterprise on the spot by accredited engineers. Therefore, a standardised report template has to be utilised. The identified improvement potential is discussed with the owner of the enterprise. Subsequently, concrete measures are developed.

The third step relates to the consultation during the realisation of the measures.

PEIK is a nation-wide programme led by the Swiss Federal Office of Energy. The cantons implement it at operative level.

The coverage of costs varies all over Switzerland. On average 50% of the consultation costs are covered. The Canton of St. Gallen, for example, fully bears the costs.

#### *Practicability*

A free quote is a precondition for a high acceptance of funded energy consultation for enterprises. This target group, in general, does not demand such consultancies on their own initiative. Energy consultants need to acquire their customers and are able to offer subsidised consultancies within the framework of their services. So, the subsidised energy consultation can be seen as an additional sales instrument.

Some consultants have a sole proprietorship; others are employees in energy supply companies or other big companies, which have an existing customer stock – on hand to be gained for the energy consultation programme.

### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
High coverage of costs in St. Gallen Consultation during the planning <b>and</b> realisation phase Easy application procedure	Acquisition necessary Low coverage of costs in some cantons

### ProKilowatt

#### *Description and details of the policy instrument*

The Swiss Federal Office of Energy SFOE subsidises energy efficiency measures in the following areas:

- Lighting
- Cooling
- Motors
- Pumps
- Ventilation
- Industrial processes
- Others.

The Swiss Federal Office of Energy is responsible for the strategic leadership of this programme, which is managed by the company CimArk SA. The financial means for the funding programme ProKilowatt results from the net surcharge which consumers pay per used kWh electricity.

The enterprise receives 30 Swiss centimes (26 euro cents) for each kWh which is saved by the realised measure. The amount is calculated depending on the lifetime of the new application and is paid once. The final decision about funded projects is made in the context of a competition. The projects with the best cost-effectiveness are funded. This cost-efficiency is defined as invested centimes per saved kWh.

### *Practicability*

Basically, there are 157 different funding programmes for companies in Switzerland. This large offer is very confusing; as a result, companies hardly find their way through this mass of information.

In the case of ProKilowatt, 50 million CFH (about 44 million euros) are available for this subsidy programme. Two thirds of the available subsidy budget is gained by the target group (enterprises). Interviews have shown that a too complex application procedure is hindering the funding to be exploited in its entirety. For instance, there are a myriad of dependencies between the data sheets; different lifetimes have to be considered, etc.

An example: if appliances in the kitchen are to be replaced, many details have to be declared, such as the operation time of each appliance, the amount of energy saved, etc. This procedure is unclear, confusing and complex for the applying companies.

In many cases companies do not have the necessary know-how to do the application by themselves or do not have the resources to do so. They need an expert who assists in the application process.

The experience with CimArk SA is quite good because they have deep technical know-how, which is necessary to be able to assess the applications and measures.

### *Strengths and weaknesses*

The following strengths and weaknesses were identified by the interview partners.

<b>Strengths</b>	<b>Weaknesses</b>
Basically attractive funding amount Experience and expert know-how of CimArk SA	Too many subsidy schemes in general Very complex application procedure

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	Dependencies between sheets Energy expert is needed to fill in all data sheets.
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# RECOMMENDATIONS FOR NON-BINDING INSTRUMENTS IN THE ALPINE REGION

## Kinds of recommendations

The analysis of existing funding schemes resulted, on the one hand, in basic recommendations, which are valid for funding programmes in general, and, on the other hand, in specific recommendations, which apply for companies in the alpine region. Basic recommendations relate to sector-specialised energy consultation, application procedures, funding rates, communication of funding programmes, increasing of trust in support systems, etc. In contrast, specific recommendations pertain to holistic consultation, funding of the combination of technologies, stand-alone plants, covered costs, etc.

## Offering full service of support

The recommendations concern awareness-raising programmes, funded energy advice and investment subsidies.

Awareness-raising programmes are an essential instrument to convince enterprises of the necessity and benefits of energy efficiency measures and the use of renewable energies. Following subsidised energy audits enable businesses to know their energy consumption, their distribution of energy consumption and the largest energy consumers. Based on this information the energy audit or energy consultancy supports SMEs to identify concrete measures to improve their energy efficiency and to implement renewable energy systems. As soon as an enterprise is ready to implement the suggested energy efficiency measures and renewable energy systems, investment subsidies, which enable investments to be economically viable, are crucial for the actual execution.

Energy consultants are the link between the energy audits, and the planning and realisation of energy efficiency measures and the installation of renewable energy systems with support of investment funding.

## Validity of recommendations

The analysis of the interviews with partners of the member states of the EUSALP showed that there is room for improvement with respect to various issues (awareness-raising activities, qualification of energy advisers, complexity of offered funding schemes, extensive and overstraining application conditions and

forms, etc.). This characteristic does not apply equally to all member states. Both good practices and successful activities had been discovered in each member state of the EUSALP showing the strengths of the programmes. These strengths are to be retained and are therefore also formulated as recommendations. As a consequence, the recommendations at hand are valid for the entire Alpine region.

## **Choice of recommendations to be realised**

The core team of the proposed energy efficiency network (see Setting up an energy efficiency network) should choose and implement suitable recommendations in cooperation with experts of relevant organisations. Some recommendations concern all member states of the Alpine region, others merely apply to individual regions. The study “EUSALP Energy Survey 2017” (see Bisello et al, 2018) as well as the report “The Alps – People and pressures in the mountains, the facts at a glance” (see Imhof et al, 2010) show the energy consumption and the structure of enterprises which contribute to the decision of realisation campaigns.

The analysis of funding schemes in the member states of the EUSALP results in the following recommendations:

- Recommendations regarding awareness raising
  - Increasing the awareness of non-energy benefits
  - Changing attitude concerning the payback period
  - Defining three best energy efficiency measures
  - Transferring experiences of real examples to enterprises
  - Increasing trust in funding systems and energy efficiency measures
  - Intensifying communication
  - Establishing financing institutes as funding guides
- Recommendations regarding energy advice
  - Free/low cost energy advice
  - Taking special conditions for enterprises in the Alpine region into account
  - Sector-specialised and regionally active energy consultants
  - Offering support through the whole refurbishment process
  - Promoting authorisation of consultants to apply for the subsidy



- Introducing a temporary energy manager
- Recommendations regarding investment funding
  - Focusing on a few funding programmes
  - Separating operating organisations
  - Simplifying application procedures
  - Giving direct grants
  - Preferring long-term funding programmes
- Recommendation regarding the change of definition
  - Changing definition of SMEs according to energy consumption

Specific current situations and related individual recommendations are described in detail in the following chapter.

## Recommendations regarding awareness raising

### Increasing the awareness of non-energy benefits

#### *Current situation*

In fact, enterprises are the most motivated to execute energy efficiency measures or to use renewable energies if they can save costs or can benefit in other ways. The person responsible in enterprises, as well as consultants and planners are often unaware of these non-energy benefits, but **exactly these non-energy benefits are often decisive**.

#### *Recommendations*

The focus of information campaigns should not be restricted to the possibility of cost saving. Non-energy benefits are of great importance when convincing the person responsible in enterprises to reflect on and, subsequently, to realise energy efficiency measures and to use renewable energies.

The following non-energy benefits can result from energy efficiency measures or from the use of renewable energies, depending on the prevailing conditions, and should be a major part of communication strategies:



- Enhanced image towards costumers
- Being prepared for stringent legal requirements
- Improved safety or decrease in safety requirements resulting from the use of innovative technologies
- Increased indoor air or light quality
- Increased thermal comfort
- Increased productivity
- Reduction of space requirement
- Reduction in costs for other resources (water, fossil fuels, electricity), which are not directly affected by the measure
- Reduction in unwanted heat input into the building and therefore lower cooling costs
- Reduction in maintenance efforts
- Reduced dependency on energy or fuel prices
- Reduction of arrearages
- Avoidance of mould
- Reduced sick leave
- Certain measures pave the way to the use of energy-efficient and innovative applications, technologies or plants, which would have been impossible without the realised measures.

Communicators (public authorities, funding organisations, energy agencies, energy consultants, planners, etc.) should consider these significant issues when informing their target group.

#### Changing attitude concerning the payback period

##### *Current situation*

Enterprises usually calculate their investments with a low payback period. Thus, measures exceeding payback times of three to five years are often not realised. Numerous energy efficiency measures show corresponding payback periods. Comprehensive measures may indeed exceed five years, but would result in major advantages if executed.

### *Recommendations*

It is recommended to put the focus in communication strategies on changing the attitude concerning the payback period. Enterprises should be convinced to take investments in energy efficiency and renewable energies into account even if they exceed the usual payback period. Intensive information about non-energy benefits, as mentioned before, can considerably support the change in attitude.

### Defining three best energy efficiency measures

#### *Current situation*

Without energy advice enterprises hardly know the most suitable measures to be implemented in their enterprise.

#### *Recommendation*

In order to give specific branches an initial idea of the most substantial energy-saving measures, funding organisations, as well as national and regional energy agencies should concentrate on communicating these measures and correlating funding possibilities. These actions should range from “low hanging fruits” (measures which can be realised easily and with no or low investments) to more complex and costly measures.

### Transferring experiences of real examples to enterprises

#### *Current situation*

In many cases, the trust of enterprises in positive effects of energy efficiency measures and the use of renewable energies is low. Often, they lack experience with such measures and the imagination of possible effects. Yet, enterprises which are interested in energy efficiency measures and the use of renewable energies can often be motivated by the positive experience of companies which have already realised measures.

### *Recommendation*

The information exchange is recommended to take place directly from enterprise to enterprise. Therefore, site visits are a suitable event to inform interested enterprises about the direct cost effects and non-energy benefits of efficiency measures.

These site visits should be carried out regionally, as the persons responsible in enterprises often do not have the necessary resources to travel long distances for such information events.

An Alpine Energy Award for enterprises which have realised exemplary energy efficiency measures and renewable energy systems will also attract attention.

Introducing voluntary agreements of enterprises on implementing energy efficiency measures or using renewable energies is a further successful method to show commitment and being role models.

### Increasing trust in funding systems and energy efficiency measures

#### *Current situation*

The interviews show that the trust in funding programmes is low in part. This is especially the case in Slovenia.

#### *Recommendation*

In order to increase the trust in support programmes and energy efficiency measures, the funding organisations and energy agencies should reinforce their communication strategies and pay special attention to non-energy benefits and measures which have already been realised by companies.

### Intensifying communication

Frequently, there is little communication of the benefits of energy efficiency measures and the use of renewable energies, of funding possibilities and the positive results of actually refurbished enterprises. Thus, funded energy consultations are not used, available financial means are not exploited, and enterprises have no confidence in funding programmes.

#### *Recommendation*

Considering all aspects of communication described before, relevant stakeholders should inform more intensively about issues like benefits of energy efficiency measures and the use of renewable energies,

funding possibilities and actually refurbished enterprises. These stakeholders are national and regional energy agencies, local authorities, energy advisors, planners and suppliers of technologies and energy efficiency measures, chambers of commerce, economic associations, financing institutes, and national and regional networks. Organisers of information events have to choose suitable platforms to pick up enterprises where they currently are. Especially, SMEs prefer on-site visits or regional events, and being advised by professionals. Site visits with accompanying information are examples of useful events.

The information exchange between enterprises which are interested in efficiency measures, on the one hand, and enterprises offering advantageous solutions for specific challenges, on the other hand, is another important issue. Business breakfasts or site visits are successful examples of appropriate events.

#### Establishing financing institutes as funding guides

##### *Current situation*

SMEs finance their standard measures, like operation modernisations or expansions, via loans at local banks. Usually, enterprises contact financial institutions to explore subsidising opportunities for these standard actions, but also for energy efficiency measures. At this point informing enterprises about energy efficiency and funding possibilities is very promising. However, at the moment many financing institutions do not have the expertise to advice enterprises in applying for funding.

##### *Recommendation*

Funding organisations in cooperation with national and regional energy agencies should build up competences in financing institutions to enable them to inform applicants about energy efficiency measures, renewable energies, funding possibilities, basic requirements, funding amounts and the process. They should also have basic information brochures at hand.

## Recommendations regarding energy advice

### Free/low cost energy advice

#### *Current situation*

For companies to realise energy efficiency measures and use renewable energies, first of all, the persons responsible must be aware of the status quo of the energy consumption, the condition of plants, as well as the potential savings and benefits. In many cases businesses do not assign an energy consultant, because enterprises who are not convinced of efficiency measures do not pay for energy advice.

#### *Recommendation*

To provide sound information about the current energy consumption, relevant benchmarks, conditions of plants, possible efficiency measures and their benefits is to open the door to the realisation of measures. In order to attract enterprises which are not yet convinced of the necessity and benefits of energy efficiency measures, the funded advice has to be free or available at just a fraction of the real costs. Additionally, the following recommendations have to be considered.

### Taking special conditions for enterprises in the Alpine region into account

#### *Current situation*

Present funding schemes are not specifically targeted to enterprises in the Alpine region; however, the framework conditions for companies in the Alpine region are different to those in rural or urban areas. These are some of the special characteristics:

- In the Alpine region solid fuel wood is often used, although a high level of effort is involved to make it accessible to consumers in this area.
- Solid fuel wood can be well combined with other renewable energies, but especially in Alpine areas the availability of solar radiation has to be considered in detail when planning solar thermal or photovoltaic plants.
- The independency from the power grid is an important issue in Alpine areas, because the electricity net is permanently overloaded. Consequently, own power production makes sense.

- Another possibility to overcome these problems is to detach the operation of as many processes as possible from the electricity net. In these cases, cooking with gas, for example, is a reasonable option.

#### *Recommendation*

In order to take the specific challenges of the energy supply and usage in the Alpine region into consideration, an adapted, **sector-specialised and holistic consultation, planning and realisation** is vital. There are numerous possible starting points and, at the same time, many useful and suitable technologies exist already to be applied in Alpine regions. These technologies concern heat recovery, use of district heat, and technologies for saunas and so on.

Furthermore, the funding programmes should contain subsidies which are exclusively valid for enterprises in Alpine regions, based on their special challenges.

#### Sector-specialised and regionally active energy consultants

##### *Current situation*

Energy advisors basically counsel enterprises of all or at least some sectors. Yet, they are often not qualified enough to provide detailed advice to companies of a specific sector. This can lead to only general energy efficiency measures which are not adapted to the special requirements of certain sectors. That is the reason why enterprises often are not convinced by the refurbishment concept.

Each sector has its own energy benchmarks and experienced advisors in specific sectors know how to calculate these benchmarks even if the key figures are not available.

##### *Recommendation*

It is crucial that energy consultants must acquire sector-specific knowledge to be able to consider particular issues when advising enterprises of certain sectors, such as:

- Customer structure
- Competitors
- Current and future developments
- Challenges

- Special technical requirements
- Dependencies and correlations of plants and processes
- Effects of changes in processes
- Sector-specific language
- Available and best applicable technologies

Sector-specialised energy consultants advise a certain sector on a daily basis. Thus, they are very well aware of these issues and can offer a sector and customer-targeted efficiency concept. This leads to a higher acceptance of the consultations and a higher probability of the realisation of energy efficiency measures.

Funding organisations should therefore attach much importance to list or assign primarily such sector-specialised energy consultants.

It is recommended to conduct energy consultations and information events regionally in close cooperation with regional professionals, regional consulting companies, and mayors or even with a local bank.

This is due to three major reasons:

1. Companies have very limited time to pursue activities outside their core business.
2. Companies are more likely to trust regional actors who they know.
3. Regional events in a comfortable setting which include the possibility to meet acquaintances and friends are more likely to be visited.

In any case, processes and audits should be well structured and quality control must be ensured.

#### [Offering support through the whole refurbishment process](#)

##### *Current situation*

One-time consultation often does not lead to the implementation of actual energy efficiency measures. In this case enterprises have a short report in hand and mostly do not pay much attention to it – either because the commitment is missing or because they need more support.



### *Recommendation*

Experiences show that the probability of the realisation of measures is higher in regions in which regular support is given to enterprises. Regular support in this context means regular contact to persons responsible in enterprises, enquiring about the state of considerations, offering technical support, **guiding through the planning AND realisation process** as well as assisting the monitoring process afterwards.

### Promoting authorisation of consultants to apply for the subsidy

#### *Current situation*

Application conditions may concern the classification of the measure (kind and size of technologies or other measures), detailed technical requirements, combinations of technologies, calculation of savings, definition of system boundaries, minimum investments, minimum savings, minimum payback periods, allocation of eligible costs, dependencies among different measures, combination of funding programmes, time of application, etc. Enterprises often describe these application conditions and procedures as unclear and too extensive. Consequently, they give up halfway or do not even start to apply for funding and, as a result, also do not launch the process of planning and realising efficiency measures.

### *Recommendation*

Energy advisors as well as planners of measures and technologies should be skilled in applying for funding so that they can at least support in or, in the best case, take over the application process. Therefore, an authorisation of consultants and planners to apply for funding should be introduced. Offering this service is an additional value for the experts concerned. If they carry out the application for funding on a regular basis, this service can be done very quickly and rarely causes additional costs.

### Introducing a temporary energy manager

#### *Current situation*

Many enterprises, mainly SMEs, do not have the resources to employ an energy manager. Yet, contracted employees do not have the time or knowledge to take over issues of an energy manager. This may lead to flawed records of the energy consumption of different resources, incomplete indicators to analyse the consumption and, as a result, the lacking of planning and execution of efficiency measures.

### *Recommendation*

It is advisable to deploy a temporary energy manager at the enterprise, who is employed at a regional energy agency, for a certain amount of time to undertake the required activities, from recording and analysing energy consumptions to planning and accompanying the realisation of measures.

## **Recommendations regarding investment funding**

### Focusing on a few funding programmes

#### *Current situation*

The interview partners often stated that the supply of funding possibilities is too large. There are EU-wide, national and regional funding schemes. Requirements differ, some programmes supplement each other and others exclude each other. Thus, the persons responsible in enterprises have difficulties to see through the offers.

#### *Recommendation*

The funding system in a country should consist of just a few funding programmes and ideally one single application portal. The information should be as short as possible and better targeted towards the companies.

### Separating operating organisations

#### *Current situation*

In most member states the operating body assessing funding applications and assigning subsidies is separated from the financing body (usually ministries). The interviews showed that this organisation works very well.

#### *Recommendation*

Keeping the structure of separated financing body and operating funding organisation is recommended. The funding organisations managing the system, assessing funding applications and assigning subsidies need, and in all cases have, detailed technical know-how to evaluate demands. Coordination and ap-

proval processes should be limited and, if necessary, should take place regularly to keep the waiting period for the enterprises for approval of the subsidy as short as possible.

### Simplifying application procedures

#### *Current situation*

As mentioned above, enterprises often perceive the application procedures as unclear and too extensive because of the comprehensive conditions (see chapter Promoting authorisation of consultants to apply for the subsidy).

#### *Recommendation*

In addition to the required increase of the skill of consultants and planners to apply for funding, the application conditions and procedures should be simplified. This will heighten the interest of enterprises in realising efficiency measures and using renewable energies.

Simplifying procedures in this context means the following actions, for instance:

- Offering clearly structured information
- “Translating” complex information into an easily comprehensible language
- Reducing the level of detail of technical requirements
- Eventually grouping measures or technologies
- Reducing sheets to be filled in to a minimum
- Automatic check and the possibility to combine different funding programmes (EU-wide, national and regional)

Simplifying application conditions and procedures is an intricate and time-consuming process. The easier the application is the more likely enterprises will consider efficiency measures, on the one hand. On the other hand, funding programmes have to set minimum requirements to ensure the usage of highly efficient technologies and efficient combinations of technologies. As a result, the responsible actors are challenged to find a balance between the simplicity of the application and the ability to set sufficient minimum requirements.



### Giving direct grants

#### *Current situation*

Generally speaking, direct grants are preferred by enterprises in countries where such funding systems are in place. The reason for this is that external financial means may be lower or, if own financial means are available, additional external financial means are not necessary. The enterprises are thus more flexible than in systems offering soft loans.

#### *Recommendation*

In case funding programmes are improved, it is advisable to provide enterprises with the possibility to gain direct grants instead of soft loans.

### Preferring long-term funding programmes

#### *Current situation*

Planning and decision processes are time-consuming. Short-term calls to finance energy efficiency measures or the use of renewable energies make it difficult for enterprises to plan for longer periods.

#### *Recommendation*

The necessary resources to plan and decide for energy efficiency measures call for a long-term funding programme, which enables enterprises to calculate with the existing grants.

## **Recommendation regarding the change of definition**

### Changing definition of SMEs according to energy consumption

#### *Current situation*

Binding instruments required in the EED and implemented in national law are mainly valid for large enterprises. Hence, energy-intensive businesses which are defined as medium-sized enterprises according to their number of employees are exempt from the liability to make energy audits or to realise measures to gain energy savings.

### *Recommendation*

In order to gain more energy savings, it would make sense also to include energy-intensive medium-sized enterprises in the obligation. This can be achieved by changing legal requirements depending on the annual energy consumption instead of the number of employees.

# SETTING UP AN ENERGY EFFICIENCY NETWORK

## Background

The task of the EUSALP Action Group 9 is to implement the European Commission's Action Plan for the EUSALP macro-regional strategy by developing concrete initiatives and projects. Therefore, the Action Group 9 translated the European Commission's EUSALP Action Plan into concrete implementation steps and defined the support of energy efficiency measures in SMEs as a strategic initiative. One of those steps is the setting-up of an energy efficiency network for Alpine enterprises, which should deliver first results in the period 2019–2020.

Therefore, the AEA elaborated a proposal of main tasks, defined relevant stakeholders and activities to be undertaken to set up the network.

## Aim of the energy efficiency network

The overall aim of the energy efficiency network is to support enterprises in the Alpine region to increase their energy efficiency and to push the use of renewable energies. To achieve this aim, the information level, the awareness level and the practicability of funding programmes should be enhanced. In this context existing mechanisms and financial means should be used and improved. For this purpose the AEA has developed various recommendations (see chapter Recommendations for non-binding instruments in the Alpine region).

The energy efficiency network's objective is to push and support the implementation of the developed recommendations. Therefore, it is crucial that funding organisations, policy makers, representatives of relevant ministries, national and regional energy agencies, chambers of commerce and economic associations participate in the network.

## Services of the energy efficiency network

The Austrian Energy Agency identified the following tasks to be covered by an energy efficiency network for the Alpine region:

- Strengthening transnational cooperation
- Supporting the implementation of recommendations for funding schemes

- Collecting, improving and exchanging work materials
- Driving the transfer of information about real energy efficiency projects between enterprises
- Implementing services of the network into NECPs (National Energy and Climate Plans)

#### Strengthening transnational cooperation

The member states of the EUSALP share common topics and challenges in the context of energy:

- Energy supply
- Grid stability
- Energy efficiency
- Technological progress
- High water and energy usage in tourism regions
- Pollutant emissions through traffic
- Special attention to the environment

The necessary conservation of the landscape and the special characteristics of the Alpine region call for a sustainable development of the environment.

In addition, enterprises in the Alpine region face further challenges, which determine decisions and business strategies:

- Family-owned enterprise structure
- Decentralised living circumstances
- Decentralised education and working conditions
- Development of labour costs
- Quality of work force
- Dependency on tourism in many cases
- Seasonal concentration

Each member state of the EUSALP has implemented its own binding and non-binding programmes to tackle the challenges concerning energy efficiency. But in most cases the mentioned specific challenges of enterprises in the Alpine region have not yet been considered. Moreover, different levels of expertise in the EUSALP territory have been identified by the Action Group 9. Whereas some member states of

the EUSALP or even individual regions show advanced activities in the field of energy efficiency, others lack coherent programmes.

The aim of this task is to elaborate common topics, to exchange experiences, as well as to pick the best strategies and activities to improve existing systems. The energy efficiency network allows cooperation and transnational collaboration among different stakeholders of the Alpine region to transfer knowledge and to fill identified gaps by implementing suitable recommendations. A central task in this context is to encourage network partners to regularly participate in meetings and other events, to share experiences and to translate outputs and recommendations into their national and regional system.

#### Supporting the implementation of recommendations for funding schemes

The concrete recommendations, which were developed in the framework of the study at hand, lead to a more targeted support of enterprises on their way to more energy efficiency (see chapter Recommendations for non-binding instruments in the Alpine region). These recommendations are:

- Recommendations regarding awareness raising
  - Increasing the awareness of non-energy benefits
  - Changing attitude concerning the payback period
  - Defining three best energy efficiency measures
  - Transferring experiences of real examples to enterprises
  - Increasing trust in funding systems and energy efficiency measures
  - Intensifying communication
  - Establishing financing institutes as funding guides
- Recommendations regarding energy advice
  - Free/low cost energy advice
  - Taking special conditions for enterprises in the Alpine region into account
  - Sector-specialised and regionally active energy consultants
  - Offering support through the whole refurbishment process
  - Promoting authorisation of consultants to apply for the subsidy
  - Introducing a temporary energy manager
- Recommendations regarding investment funding



- Focusing on a few funding programmes
- Separating operating organisations
- Simplifying application procedures
- Giving direct grants
- Preferring long-term funding programmes
- Recommendation regarding the change of definition
  - Changing definition of SMEs according to energy consumption

Depending on the topic of the recommendation, the core team could encourage corresponding stakeholders (see chapter Stakeholders and their roles) to implement the recommendations. Other network partners would be suitable to reinforce the process of information and implementation.

To motivate relevant network partners, various information and working events with the partners are necessary. Information and communication about the status quo on a regular basis is essential for the successful implementation of recommendations. These events could be organised by the core team.

#### Collecting, improving and exchanging work materials

Energy agencies often offer work materials to their target groups, which could be of interest for enterprises in the Alpine region. These work materials are for example:

- Guidelines for consultancies and audits
- Audit templates for energy audits and consultancies
- Calculation tools
- Checklist for energy efficiency measures
- Targeted information material
- Best/Good Practices
- Concepts for information events (field trips, business breakfasts etc.)
- Studies

The energy efficiency network would particularly be well suited to foster the exchange of such work materials. In the run-up of regular meetings or events network partners may be asked to shortly present

such supporting instruments and their experience therewith. The participants would decide if and which documents are of high interest for their region. The core team, optionally in cooperation with appropriate network partners, could support the process to adapt work materials to the needs of Alpine enterprises. In any case, the core team of the energy efficiency network will transfer work materials and practical experiences to the members of the energy efficiency network.

#### Driving the transfer of information about real energy efficiency projects between enterprises

Experiences show that good practice examples work best for enterprises. If enterprises are interested in energy efficiency measures and renewable energies, positive experience of companies which already realised measures are most convincing arguments. In this context non-energy benefits are at least as crucial as actual energy savings. Site visits to companies which implemented already energy efficiency measures are an ideal communication way to convince other enterprises. The site visits can be combined with personal funding advice. A decisive aspect is that the site visits are in the region, in order to avoid long travel times. The acceptance is much higher if they visit a regional event. The organization can be done centrally but the realization has to take place regionally or locally.

Such events are offered far too little throughout the member states of the EUSALP. Consequently, a core task of the energy efficiency network is to drive the realization of site visits in combination with funding advice. Therefore regional energy agencies of the energy efficiency network are encouraged to organize and realise such site visits. These activities are supported by the chambers of commerce, associations of the economies, organisations of funding programmes and the Ministries.

#### Implementing services of the network into NECPs

EUSALP member states should try to integrate the defined actions and outcomes of the energy efficiency network into their National Energy and Climate Plans. This process would strengthen the importance of the network and support the implementation of the requirements in the EPBD and the EED.

## **Stakeholders and their roles**

The following figure shows a proposal of the members of the energy efficiency network, their roles and activities.

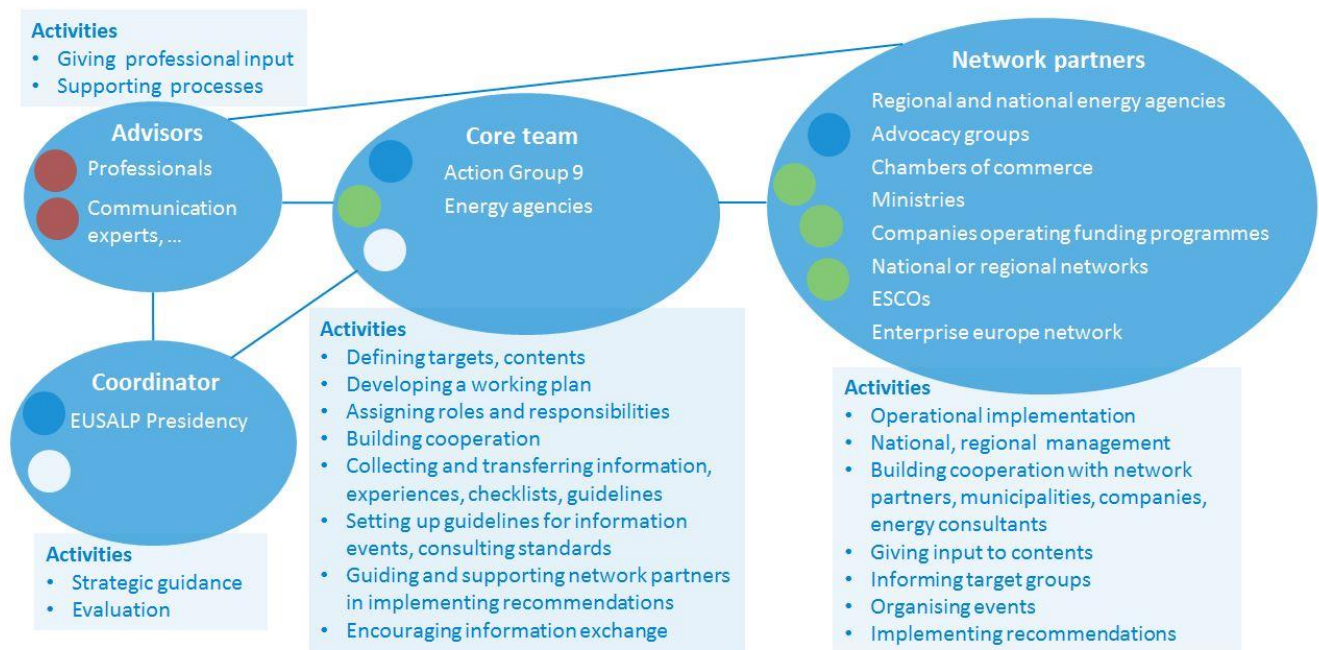


Figure 1: Members and activities of the energy efficiency network, Source: Austrian Energy Agency - AEA

The core team is the centre of all activities and communication processes. Depending on the topics to be elaborated the corresponding network partners participate in meetings. These network partners are regional and/or national energy agencies, professional associations, chambers of commerce, ministries responsible for the funding of awareness-raising activities relating to energy efficiency and renewable energy, companies or organisations operating funding programmes, leaders of other national or regional networks, and other NGOs.

Advisors like professionals, marketing experts or mediators are brought in as required. The coordinator has no active part in the process, but sets the direction and evaluates activities.

### Competences of stakeholders

#### *Action Group 9*

Action Group 9 focuses on the promotion of energy efficiency and of the production and use of local renewable energy in the Alpine Region, especially in the public and private sectors. <https://www.alpine-region.eu/action-group-9>

### *Energy agencies*

Energy agencies have technical know-how concerning energy efficiency measures and the use of renewable energy systems as well as their effects. They have detailed knowledge of the EU-wide and national legislative landscape. National energy agencies may be directly involved in legislative processes or are in the position to influence those processes.

Regional energy agencies, additionally, know the energy structure of specific regions as well as the characteristics and challenges of enterprises located in those regions in full detail. They are in the right position to inform and encourage enterprises on a regional level, which is the preferred mode of communication by business owners. Regional energy agencies are also in charge of assigning energy advisors for funded energy consulting. Thus, companies can trustfully implement the recommendation of those experienced, sector-specialised energy consultants.

A further task of regional energy agencies is to provide detailed contents and participants for meetings, organise events, publish information material, etc.

### *Advocacy groups and chambers of commerce*

On the one hand, these stakeholders know the specific branches thoroughly from an economic point of view. They can give valuable input to estimate the acceptance of planned activities and work materials as they know the economic challenges, needs and technical language of enterprises in the various sectors.

On the other hand, advocacy groups and chambers of commerce can act as multipliers. They are the ideal stakeholders to transfer targeted information and work materials to the companies. Such groups are the ideal partners to communicate about and actively participate in information events like site visits or information campaigns about funding programmes. They appreciate useful facts, but also carefully select potential information for their members. Hence, enterprises basically have trust in all communication coming from the advocacy groups and chambers of commerce.

### *Ministries*

The ministries in the different member states are the financing bodies of funding programmes and sign off the funding conditions. For this reason, participation of the ministries in the energy efficiency network and close cooperation between them and the other network partners are essential for the success of the implementation of funding recommendations.

### *Companies operating funding programmes*

Companies or organisations operating funding programs can give valuable feedback on the practicability of recommendations to improve applications for funding and can directly implement the proposed actions.

### *National or regional networks*

National or regional networks can advise the core team through sharing their experiences. They can also act as multipliers by transferring information and work material as well as participating in events and distributing invitations to meetings to the target groups.

### *ESCOs*

Energy Service Companies act as multipliers; they can take a consultative role and also (financially) contribute to information events or site visits.

### *enterprise europe network*

This network supports enterprises in their pursuit of innovation and international growth. Members of this network can give valuable input from the innovation perspective and help to focus on innovative and international aspects of measures and activities.

### *Professionals*

Professionals include experienced, sector-specialised energy consultants and expert from different trades with extensive skills in realising energy efficiency measures and installing renewable energy systems in enterprises in the Alpine region. These experts shall introduce know-how on (innovative) technical solutions and processes into the network.

### *Communication experts*

Communication experts can provide support by developing successful communication strategies like storytelling or framing, etc. to find the best way to organise the available information according to the needs of the target-groups.

## **Roadmap to set up the energy efficiency network for Alpine enterprises**

In order to set up the energy efficiency network, the following steps are necessary:

### Step 1: Developing a concrete work programme

The study at hand recommends comprehensive tasks to support enterprises in increasing their energy efficiency and the use of renewable energy systems. In a first step the core team chooses focus areas, tasks to be undertaken, number and content of meetings, target groups, and defines the budget and financing. Additionally, the core team has to set the time frame.

### Step 2: Defining stakeholders

Depending on the tasks to be performed, the core team defines the corresponding stakeholders. These stakeholders should hold a decision-making position to be able to directly implement recommendations. For awareness-raising tasks the involvement of multipliers is essential.

### Step 3: Motivating stakeholders and defining roles

It is vital that the stakeholders become network partners of the future energy efficiency network. Therefore, persuasion activities have to be designed and executed with clear targets and tasks, tailor-made to the individual stakeholders. The success of this process is a decisive factor for the functioning of the energy efficiency network. Using charismatic, convincing personalities to lead and carry out this motivation process is an important strategy in this regard.

Following the motivation process the roles, responsibilities, activities of every single network partner have to be fixed and contractually regulated.

#### Step 4: Setting up a website

A network website provides the target groups and the network partners with current information. An internal section enables network partners to access up-to-date documents, task lists, work materials (checklists, tools, information material, concepts for events, etc.). The website also serves as a communication platform for national actors to inform regional actors.

The guideline “Alpstar Leitfaden – Toward carbon neutral Alps – make best practice minimum standard” shows experiences and recommendations in setting up a model region. Although recommendations in this guideline concern energy model regions, they are also largely applicable to the compilation of an energy efficiency network. One of the most important pieces of advice of experts, such as Roger Walther and Dionys Hallenbarter of the Energy Region Goms, is not to theorise too long but to quickly start realising ideas. Fast results will produce trust in the planned activities and the actors concerned.



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## ANNEX

### Questionnaires to be filled in by partners

# Energy Efficiency in Alpine enterprises

## Analysing supportive instruments to realise energy efficiency measures in Alpine enterprises

05.10.2018

### Background

Numerous regulations, laws, directives and non-binding instruments promote energy efficiency and sustainable development in Alpine enterprises and regions. The instruments differ in the characteristic itself, levels of governance involved, interaction and cooperation of actors, decision making processes and promotion activities. Each system has its strengths, weaknesses and **success levels**. These issues will be analysed as part of our study. Special attention will be paid to the specific challenges **enterprises in the Alpine region** face. The target is to offer insight to different schemes to identify key experiences. The findings will be compiled into a roadmap with **concrete policy recommendations** which could be transferred to the EUSALP. The roadmap will be available for you after the completion in May 2019. In March 2019 a draft version will already be presented.

The activities were assigned by CasaClima – Agency for Energy South Tyrol in the course of EUSALP (EU-Strategy for the Alpine Region) and carried out by the Austrian Energy Agency.

### Your expert knowledge is needed!

To successfully develop concrete policy recommendations for designing funding schemes or regulative frameworks for energy efficiency and refurbishment measures for enterprises in the alpine region, we have to **collect an overview** about and **insight** to existing and past funding schemes of all partner countries and regions of the EU macroregional strategy of the Alpine Region.

We kindly ask you to fill in the questionnaire for actual systems in place as well as for systems in the past. Please use a separate questionnaire for each supportive system.

These supportive systems could be:

- Laws (environment protection law, energy efficiency law, etc.)
- Regulations
- Directives
- Financial subsidies (e.g. investment subsidies, subsidised loans, tax reduction)
- Information campaigns/awareness raising campaigns

- Etc.

The following energy efficiency measures or equipment could be affected by the supportive system:

- Building insulation, new windows
- Heating, cooling or ventilation system
- Production plants (heat recovery, energy efficient components etc.)
- Lighting system
- Electric devices
- Energy management system, energy audit
- Corporate environmental measures
- Mobility
- Etc.

Your personal data will be treated confidentially.

### Information about the person filling in the questionnaire

The following contact information is needed to come back to you for further questions. This data will be treated confidentially.

Company:

Name of the contact person:

E-mail:

Telephone number:

Website:

### Basic information about the companies in the alpine region in your country

Please describe here the characteristics and branches of companies in your country which are situated in alpine regions.

### Basic information about the subsidy system and other measures to increase energy efficiency and decrease the energy use or protect the environment in your country:

Please describe here the funding system in your country. As an example please have a look at the Austrian description.

### Common goals of the alpine region

Please describe here the communication and maybe common goals with other countries or different regions having alpine regions. Are there associations for companies in alpine regions? What is their topics?

### Awareness raising/information campaign:

#### Basic information about the supporting instrument

Title of the supporting instrument:

Country or region(s) in which the program is valid:

Target of the supportive instrument:

Short description/contents/targets of the supportive instrument (max. 3000 characters):

Financing body (if applicable):

Implementing organisation:

Budget (if applicable):

Duration (from, to):

Website to find more information:

Target group (characteristics of the applying enterprises):

Sector(s) of the target group:

Application procedure for financial support (if applicable):



**Selection procedure (if applicable):**

**Possibility to combine this supportive instrument with other instruments:**

### Characteristics of the supportive instrument

#### Supportive instrument:

- ☐ Financial support
- ☐ Investment subsidy – cash allowance
  - ☐ Subsidised loan
  - ☐ Liability
  - ☐ Subsidised consultancy
  - ☐ Tax reduction
  - ☐ Other:
- ☐ Information/awareness raising campaign
- ☐ Law (environment protection law, energy efficiency law, etc.)
- ☐ Regulation
- ☐ Directive
- ☐ Other:

#### Subsidised measures/equipment/plant:

Please choose here the measures that are covered by the instrument mentioned above.

#### Area of the supporting instrument

- ☐ Building insulation
- ☐ New windows
- ☐ Heating system
- ☐ Cooling system
- ☐ Ventilation system
- ☐ Wellness facilities
- ☐ Production plants
- ☐ Lighting system
- ☐ Energy management system
- ☐ Energy Audits
- ☐ Corporate environmental measures
- ☐ Mobility
- ☐ Other:

#### 1. Description of the supportive instrument in detail

Please describe the details of the information campaign: services for companies like energy advice for saving energy, energy efficiency or renewable energies, events, competitions, awards, information material, special focus areas, costs and details of funding of the services for the companies (amount/percentage) etc.

#### 2. Are specific aspects targeted for companies in alpine regions? If yes, which aspects are these? Please describe them.

### Organisation structure

#### 3. Which participating bodies do exist? Please describe their role and responsibilities.

Our target is to get insight to the instrument (levels of governance, communication structures, responsibilities, processes, dependencies, etc.)

Participating body (Government/Ministry, energy agency, etc.)	Role of the body (Funding body, implementing and promoting organisations etc.)	Responsibilities	Comments


4. Analysis of the background processes

**Communication strategy**

5. How does the information get to the target group and who is promoting the supportive instrument, to which extent?

**Analysis of the supportive system**

6. Is there a monitoring or evaluation of the supportive system?  
☐ Yes ☐ No

7. How is the monitoring system/analysis constructed?

8. Which indicators were used to monitor/analyse the effects and what was the result of the monitoring/analysis (number of subsidised projects, kWh saved, CO2 saved, amount of granted budget, amount of investment of the enterprises, further key factors etc.)? Please interpret the numbers!

9. Are the monitoring activities repeated regularly?

The following answers are not directly copied to the study. The recommendations, success factors, reasons for not working etc. are the fundament for the overall recommendations to set up a funding system which is very likely to be accepted by the target group.

10. What do you think are the success factors or reasons for not working and what are your recommendations (concerning amount or kind of the subsidy, communication strategy, involved organisations, legal obligation, etc.) or which are very successful programs or measures and why?

11. Which aspects are missing in the mentioned program or which special upgrades are necessary to better support companies in **alpine regions**?

**Thank you very much for participating and answering our questions! We absolutely appreciate your effort!**

Financial support**Basic information about the supporting instrument**

Title of the supporting instrument:

Country or region(s) in which the program is valid:

Target of the supportive instrument:

Short description/contents/targets of the supportive instrument (max. 3000 characters):

Financing body (if applicable):

Implementing organisation:

Budget (if applicable):

Duration (from, to):

Website to find more information:

Target group (characteristics of the applying enterprises):

Sector(s) of the target group:

Application procedure for financial support (if applicable):

Selection procedure (if applicable):

Possibility to combine this supportive instrument with other instruments:

**Characteristics of the supporting instrument****Supportive instrument:**

- ☐ Financial support
- ☐ Investment subsidy – cash allowance
  - ☐ Subsidised loan
  - ☐ Liability
  - ☐ Subsidised consultancy
  - ☐ Tax reduction
  - ☐ Other:
- ☐ Information/awareness raising campaign
- ☐ Law (environment protection law, energy efficiency law, etc.)
- ☐ Regulation
- ☐ Directive
- ☐ Other:

**Subsidised measures/equipment/plant:**

Please choose here the measures that are covered by the instrument mentioned above.

**Area of the supporting instrument**

- ☐ Building insulation
- ☐ New windows
- ☐ Heating system
- ☐ Cooling system
- ☐ Ventilation system
- ☐ Wellness facilities
- ☐ Production plants
- ☐ Lighting system
- ☐ Energy management system
- ☐ Energy Audits
- ☐ Corporate environmental measures
- ☐ Mobility
- ☐ Other:

**1. Description of the supportive instrument in detail:**

Please describe the supportive instrument you have chosen and cover the following aspects: amount of financial aid for the specific measure, amount/percentage of tax reduction, terms of a subsidised loan (amount, duration, interest rate etc.),

eventual scaling), **technical requirements**, realisation time, combination of measures or combination with measures of other topics, maximum payback times, monitoring, minimum or maximum revenue of the enterprise, processing time of an average application of funding etc.

2. Are specific aspects targeted for companies in alpine regions? If yes, which aspects are these? Please describe them.

### Organisation structure

3. Which participating bodies do exist? Please describe their role and responsibilities.

Our target is to get insight to the instrument (levels of governance, communication structures, responsibilities, processes, dependencies, etc.)

Participating body (Government/Ministry, energy agency, etc.)	Role of the body (Funding body, implementing and promoting organisations etc.)	Responsibilities	Comments

4. Analysis of the background processes

Please describe the background processes like defining the budget, communication, reporting, service for companies etc.

### Communication strategy

5. How does the information get to the target group and who is promoting the supportive instrument, to which extent?

### Analysis of the supportive system

6. How many companies do you have in the concerned area where the program is offered?

7. Is there a monitoring or evaluation of the supportive system?

☐ Yes ☐ No

8. How is the monitoring system/analysis constructed?

9. Which indicators were used to monitor/analyse the effects and what was the result of the monitoring/analysis (number of subsidised projects, kWh saved, CO2 saved, amount of granted budget, amount of investment of the enterprises, further key factors etc.)? Please interpret the numbers!

10. Are the monitoring activities repeated regularly?



The following answers are not directly copied to the study. The recommendations, success factors, reasons for not working etc. are the fundament for the overall recommendations to set up a funding system which is very likely to be accepted by the target group.

- 11. What do you think are the success factors or reasons for not working and what are your recommendations (concerning amount or kind of the subsidy, communication strategy, involved organisations, legal obligation, etc.) or which are very successful programs or measures and why?**
- 12. Which aspects are missing in the mentioned program or which special upgrades are necessary to better support companies in **alpine regions**?**



## Filled in Questionnaire from Liechtenstein

### Basic information about the supportive instrument

**Title of the supporting instrument:** Energieeffizienzgesetz

**Country or region(s) in which the program is valid:** Fürstentum Liechtenstein

**Target of the supportive instrument:**

**Short description/contents/targets of the supportive instrument (max. 3000 characters):**

Über das Energieeffizienzgesetz können in Liechtenstein diverse Massnahmen gefördert werden. Die meisten Gemeinden verdoppeln die Förderbeiträge meist bis zur Höchstgrenze.

**Financing body (if applicable):** Amt für Volkswirtschaft

**Implementing organisation:** Amt für Volkswirtschaft

**Budget (if applicable):** 4 Mio CHF pro Jahr

**Duration (from, to):** Gesetzliche Grundlage

**Website to find more information:** [www.energiebündel.li](http://www.energiebündel.li) oder [www.llv.li](http://www.llv.li)

**Target group (characteristics of the applying enterprises):**

**Sector(s) of the target group:**

**Application procedure for financial support (if applicable):**

Zusicherungen vor Baubeginn

Rechnungskontrollen sowie Stichprobenkontrollen auf Baustellen und ausgeführten Objekten

Auszahlung

### Selection procedure (if applicable):

**Possibility to combine this supportive instrument with other instruments:**

It is possible to gain also a subsidy from the refurbishment campaign or the

**Name of the supportive instrument or a part of it:**

### Characteristics of the supportive instrument

**Supportive instrument:**

☐ Financial support

☐ Investment subsidy – cash allowance

☐ Subsidised loan

☐ Liability

☐ Subsidised consultancy

☐ Tax reduction

☐ Other:

☐ Information/awareness raising campaign

☒ Law (environment protection law, energy efficiency law, etc.)

☐ Regulation

**Description of the supportive instrument in detail:**



<input type="checkbox"/> Directive																																											
<input type="checkbox"/> Other:																																											
<b>Subsidised measures/equipment/plant:</b> <b>Area of the supporting instrument</b>  <input checked="" type="checkbox"/> Building insulation <input checked="" type="checkbox"/> New windows <input checked="" type="checkbox"/> Heating system <input type="checkbox"/> Cooling system <input type="checkbox"/> Ventilation system <input type="checkbox"/> Wellness facilities <input checked="" type="checkbox"/> Production plants <input checked="" type="checkbox"/> Lighting system <input type="checkbox"/> Energy management system <input checked="" type="checkbox"/> Energy Audits <input type="checkbox"/> Corporate environmental measures <input type="checkbox"/> Mobility <input type="checkbox"/> Other:	<b>Technical requirements:</b>																																										
<b>Other requirements:</b>																																											
<b>Organisation structure</b>																																											
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<b>Communication strategy</b> How does the information get to the target group and who is promoting the supportive instrument, to which extent?																																											

[www.energiebündel.li](http://www.energiebündel.li)

<https://www.energiebündel.li/EnergiepolitikFL/Energiestrategie2020.aspx>

#### Analysis of the supportive system

Is there a monitoring or evaluation of the supportive system?

☒ Yes ☐ No <https://www.energiebündel.li/EnergiepolitikFL/Energiestrategie2020.aspx>

If yes,

- how is the monitoring system/analysis constructed?
- which indicators were used to monitor/analyse the effects?
- are the monitoring activities repeated regularly?

What do you think are the success factors or reasons for not working and what are your recommendations (concerning amount of the subsidy, communication strategy, involved organisations, legal obligation, etc.)?

#### Basic information about the supportive instrument

**Title of the supporting instrument:**

**Country or region(s) in which the program is valid:**

**Target of the supportive instrument:**

**Financing body:**

**Implementing organisation:**

**Budget (if applicable):**

**Duration (from, to):**

**Website to find more information:**

**Target group (characteristics of the applying enterprises):**

**Sector(s) of the target group:**

**Selection procedure (if applicable):**



## Filled in Questionnaire from Austria

### Basic information about the subsidy system and other measures to increase energy efficiency and decrease the energy use or protect the environment in your country:

In Austria several programmes are available supporting the companies to implement energy efficiency measures. They address the environment protection by reduction or prevention of negative impact, supporting measures to reach the EU-2020 goals, promoting efficiency in used resources, reduction of emissions and cost efficient incentives for implementing measures.

a) **National Environment Subsidies** (UFI) provide funding for:

- Use of renewable energy resources
- Efficient use of energy
- Efficient use of resources
- Mobility and traction (€ 48 million is provided by the federal government for the companies)
- Gases with environmental issues or negative impact
- Measures for improving air quality
- Avoidance of noise
- Hazardous waste
- Research and demonstration plants

Within this subsidy scheme € 186.4 million supported 6,997 projects in the period 2014-2016.

b) **Refurbishment campaign** (Sanierungsoffensive) provides funding for implementing renovation measures for the private households and companies. (Within this subsidy scheme 42,091 projects received € 185.5 million in the period 2014-2016.)

c) **Regional consulting programmes** provide on-site consultancy for environmental and energy efficiency issues. (Within this subsidy scheme 5,938 projects (private households and companies) received € 3.3 million in the period 2014-2016.)

The **Climate and Energy Fund's** main task is to be an initiator and promoter of climate-relevant and sustainable energy technologies. It provides subsidies for solar and photovoltaic, thermal insulation, waste heat recovery, the search for ways to better store renewable energy, sustainable mobility and infrastructure and raising awareness for the companies.

**klimaaktiv** offers concrete support in assisting companies to implement energy efficiency. This includes applying energy management systems, energy efficiency in production and processes, buildings and mobility and transport as well as procurement. Together with the federal states/Austrian provinces, it provides a comprehensive, neutral advisory network as well.

There are also **regional incentives** (in the federal states) for implementing energy efficiency measures in the companies.

There is cooperation between the governmental funding (UFI, refurbishment campaign etc.) and the funding programmes of the federal states of Austria. The funding is provided jointly by the federal government, the states and their partners. In 2016, for example, UFI provided around 762,000 euros for the implementation of the regional (consulting) programmes of the federal states: Burgenland: Technology Offensive Burgenland, Carinthia: Ökofit Carinthia, Lower Austria: Ökomanagement Niederösterreich, Upper Austria: Operational environmental offensive, Salzburg: environmental service Salzburg, Styria: WIN Economic Initiative Sustainability, Vorarlberg: IM-PULS3, Tyrol: ecotiroi, Vienna: EcoBusinessPlan Vienna.

There is no specific funding programme for energy efficiency or renewable energies specifically addressed to companies in the alpine region. Further information is found in the tables of the specific programmes.

### Basic information about the companies in the alpine region in your country

The major industries in the Austrian alpine region are: accommodation companies and restaurants, craftsmen, wood processing, metal processing, producing industry, trade, repair of vehicles and commodities

Energy efficiency measures for accommodation companies and restaurants are well subsidised by the environment subsidy (UFI). These measures are insulating the building shell (covered by the refurbishment campaign), use of renewable energies, energy efficient lighting, heat recovery (covered by the UFI) etc.

The main issue for craftsmen is the transport of goods. Therefore investing in alternative ways of transportation is essential is the motivation for sufficient subsidies (UFI).

For wood processing, metal processing or production industries heat recovery, high efficiency motors, measures at the air pressure system, speed regulation and peak load management, solar thermal supported drying processes etc. there are appropriate measures to increase the efficiency. These measures are covered by the environment subsidy (UFI).

Mainly the tourism companies but also the other companies would need a strong network where they can get targeted information and marketing for their region to make sure that their company will receive enough customers/guests based on the common marketing strategy and thus continue with their company.

### Common goals of the alpine region

There is for example the association “alpine hosts”. This association offers a platform for booking and information about e.g. data security, subsidies, photo rights etc. for tourism companies in Tyrol and South Tyrol.

### Detailed description of environment subsidy on national territory (Umweltförderung im Inland – UFI)

#### Basic information about the supportive instrument

**Title of the supporting instrument:** Environment subsidy on national territory (Umweltförderung im Inland – UFI, Status of April 2018)

**Country or region(s) in which the program is valid:** Austria

**Target of the supportive instrument:** Protection of the environment by avoiding or reducing the impact of air pollution, climate relevant gases (especially carbon dioxide of fossil fuels and other gases to realise internationally agreed targets), noise (except traffic noise) and waste.

**Short description/contents/targets of the supportive instrument (max. 3000 characters):**

The environment subsidy on national territory embraces 13 different subsidy areas with subtopics, where small and medium sized enterprises as well as large enterprises can apply for a subsidy. The subsidy sometimes varies in different percentages of eligible investment costs or additional costs for environment friendly aspects. For example: SMEs can get 25 % subsidy at maximum and large companies can get 20 % at maximum.

The following subsidy areas and their sub topics, which are relevant for this study, are offered:

- Saving energy
  - Energy efficient cooling and refrigerating plants
  - Energy saving measures (heat recovery, lighting)
  - Air conditioning and cooling
  - LED systems
  - Street lighting
  - Heat recovery < 100 kW
  - Heat recovery > 100 kW
- Buildings
  - Refurbishment campaign for single measures or comprehensive refurbishment (separate description of the programme)
  - Model refurbishment
  - Solar thermal plants for cooling
  - Solar thermal plants < 100 m<sup>2</sup>
  - Solar thermal plants > 100 m<sup>2</sup>
- Vehicles
  - Electric cars



- Electric two-wheelers
  - Electric bicycles
  - Vehicles with alternative drives
  - Electric utility vehicles and electric lightweight vehicles
  - Retrofitting for parking bicycles
- Modell regions (separate description of the programme)
- Mobility management
  - Company mobility management
  - Electric mobility in practice
  - E-charging station
  - Mobility management for bicycle traffic
  - Mobility management for leisure and tourism
- Electricity
  - Biomass power and heat generation
  - Natural gas power and heat generation
  - Optimisation of neighbour heating plant
  - Electricity production isolated systems
- Heat
  - New construction and optimisation of heating systems
- Resources and renewable resources
  - Management of resources

Further subsidy areas, which are offered but not covered in this study:

- Contaminated sites
- Research and innovation
- Air, noise and waste
- Water

**Financing body (if applicable):** Federal Ministry Republic of Austria for Sustainability and Tourism

**Implementing organisation:** Kommunalkredit Public Consulting GmbH (KPC); This company pursues the goal of making long-term positive contributions to the environment, economy, and society by managing funding programmes and by providing targeted consulting services. As a niche player, they primarily specialize in developing, implementing and managing funding programmes, especially in the areas of environmental and climate protection, as well as the international carbon market.

**Budget (if applicable):** Subsidy of the federal state for the UFI from 2014 – 2016: 375.1m Euro

2007 – 2011: 90.2m Euro per year

2012, 2013: 85.2m Euro per year

2014: 82.1m Euro

2015: 73.4m Euro

2016: 10.2m Euro

2016: 21.2 % of the approved subsidies comes from European funding (EFRE – European Fund for regional development and ELER – European agriculture funds for the development of rural areas)

**Duration (from, to):** Last period: 2014 – 2016, ongoing.

**Website to find more information:** [www.umweltfoerderung.at](http://www.umweltfoerderung.at)

**Target group (characteristics of the applying enterprises):** Basically small and medium sized enterprises and large enterprises. For some subtopics the target group is for example farm managers of an agricultural and forestry holding.

**Sector(s) of the target group:** There is no restriction for specific sectors or branches.

**Application procedure for financial support (if applicable):**

The application can only be made online via the KPC.

The following documents have to be submitted online:

- Signed form for the specific supporting programme (Building, energy saving measures, electricity, air conditioning,

lighting etc.)

- Scanned bills or cost estimations with information about the power of heat recovery systems, power and number of installed LEDs, plant types and numbers of the types, category of the refrigeration plants, energy efficiency certificate of specific (cooling and refrigerating) plants
- Technical descriptions
- Monthly profit forecast (solar thermal plants)
- Display of environment effects (mainly CO<sub>2</sub>)
- Inspection report (solar thermal plants)
- Copy of the official identification document
- Heat supply contract (district heating)
- In some cases: a report from the bank on an investment of more than 500,000 euros.
- In case of financing via contracting, the contract has to be submitted.

**Date of submission:**

LEDs, heat recovery at cooling and air conditioning plants, energy efficient cooling and refrigerating plants, environment friendly heating (new construction, change and replacement of environment and climate friendly heat generators (wood-fired heating, solar thermal plants < 100 m<sup>2</sup>, connection to district heating)), etc.: Application is possible after realisation of the measures. The bill must not be older than 6 months. The investments have to be finished and have to be fully paid.

Building of new energy efficient buildings, optimising street and outside lighting, other heat recovery, other energy saving measures (heating optimisation, optimising of fossil processes, lighting optimisation, measures to increase efficiency at industrial processes and plants with significant technologic and ecologic differences to the existing plant), solar thermal plants > 100 m<sup>2</sup>, absorption and adsorption cooling plants, free cooling systems, purchase or optimisation of process chain plants with use of alternative refrigerants or refrigerants with a GWP between 150 and 1500, resource management, local heat, combined heat and power plants, production of electricity in isolated areas: Application is possible before the first legally binding appointment of services), prior to delivery, prior to commencement of construction or any other obligation rendering the investment irreversible, the earliest of which is applicable.

With this application the applicant also applies for the subsidy from the European fund for regional development (EFRE). The possibility of co-financing with this EU-budget is checked automatically.

**Selection procedure (if applicable):** After submission of the application, the application goes through an evaluation and approval process by the KPC. Is the application approved, the applicant gets a letter of payment and receives the money directly to his bank account. There is a link where the applicant can check the actual state of his project at any time. The processing time of an average application of funding is 181 days. This is the time between the submission and the approval.

**Possibility to combine this supportive instrument with other instruments:** The combination of this federal funding with funding systems of one of the nine federal states of Austria is possible. The specific federal state just needs the approval of the KPC and a filled in form and then an additional funding of 15 % is possible (this can vary from measure to measure and from federal state to federal state).

For some measures the KPC automatically checks and approves the possibility for the European fund for regional development (EFRE).

**Characteristics of the supportive instrument**

**Supportive instrument:**

- ☒ Financial support
- ☒ Investment subsidy – cash allowance
  - ☐ Subsidised loan
  - ☐ Liability
  - ☐ Subsidised consultancy
  - ☐ Tax reduction
  - ☐ Other:

**Subsidised measures/equipment/plant:**

**Area of the supporting instrument**

- ☐ Building insulation
- ☐ New windows
- ☒ Heating system
- ☒ Cooling system



<input type="checkbox"/> Information/awareness raising campaign <input type="checkbox"/> Law (environment protection law, energy efficiency law, etc.) <input type="checkbox"/> Regulation <input type="checkbox"/> Directive <input type="checkbox"/> Other:	<input type="checkbox"/> Ventilation system <input type="checkbox"/> Wellness facilities <input checked="" type="checkbox"/> Production plants <input checked="" type="checkbox"/> Lighting system <input type="checkbox"/> Energy management system <input type="checkbox"/> Energy Audits <input type="checkbox"/> Corporate environmental measures <input checked="" type="checkbox"/> Mobility <input type="checkbox"/> Other:
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**1. Description of the supportive instrument in detail:**

The investment costs contain costs for planning, installing and the plant or device itself.  
 Additional (environment-related) investment costs are investment costs less costs for similar plants driven by fossil fuels or similar plants without an environmental benefit.  
 Measures are funded if the payback time is more than 3 years.  
 The following measures are subsidised:

**New energy efficient buildings:** The subsidy depends on the shortfall of the maximum heat energy demand required in the OIB-Guideline 6 (national guideline for buildings), at maximum 30 % of the additional investment costs.

**Heat recovery from cooling and ventilation systems:**  
 160 Euro/kW (0 – 30 kW) lump sum  
 80 Euro/kW (31 – 99 kW) lump sum  
 At maximum: 30 % of the investment costs (Plant, planning, installation).

**Other heat recovery systems, other efficiency measures (like increase of efficiency of fossil process heat, and industrial processes etc.):**  
 30 % of the additional environment-related investment costs  
 35 % of the additional environment-related investment costs for SMEs which meet the criteria for EU-co-financing  
 At maximum: 450 euro per saved tonne CO<sub>2</sub>  
 Additional funding of 5 % for EMAS certified companies.  
 Minimum investment for other heat recovery systems: 5,000 euro, minimum CO<sub>2</sub> saving: 4 Tonnes  
 Minimum investment for other efficiency measures: 10,000 euro, minimum CO<sub>2</sub> saving: 4 Tonnes

**Energy efficient cooling and refrigeration appliances:**  
 There is a lump sum per appliance depending on the type of the appliance ranging from 100 euro to 1,200 euro, but at maximum 30 % of the investment costs.

**LED systems:**  
 600 Euro/kW connected load, further 100 Euro/kW if a light control/management is installed. Maximum subsidy of 30 % of the investment costs.

**Solar thermal plants > 100 m<sup>2</sup> for warm water, heating, process heat and drive of cooling systems:**  
 10,000 euro investments at minimum, annual minimum CO<sub>2</sub> savings of 4 tonnes.  
 20 % of the investment costs (costs for heat distribution in the building, electric heating or hybrid or swimming pool absorbers not covered).  
 25 % of the investment costs for SMEs which meet the criteria for EU-co-financing.  
 Maximum funding: 900 euro per saved tonne CO<sub>2</sub>, additional funding of 5 % (max. 10,000 euro) for EMAS certified companies.

**Air conditioning and cooling plants:**  
 30 % / 35 % of the investment costs for adsorption and adsorption cooling plants driven by renewable energy sources, industrial waste heat or district heat, free cooling systems, purchase of process cooling plants driven by alternative refrigerants with a maximum GWP of 150.  
 20 % / 25 % of the investment costs for the change or optimisation of process refrigeration plants driven by refrigerants with a GWP >150 and < 1,500.  
 Compression refrigeration plants or split plants cannot be funded.



**Funding campaign eco-friendly heating - New construction, change to or renewal of environment and climate friendly heat generators:**

**Central wood heating < 400 kW<sub>th</sub> for heating and production of process heat:**

lump sum of 155 Euro/kW (0 – 50 kW)

70 Euro/kW for every kW under 400 kW.

10 Euro/kW extra for boilers with the Austrian environment label

10 Euro/kW extra for the simultaneous realisation of a solar thermal plant.

There have to be emission limits met. If there is the possibility to connect to a biogenic district heat the plant is not funded except the operator of the district heat confirms that it is not possible to connect the specific building.

**Solar thermal plants < 100 m<sup>2</sup> gross collector area:**

Lump sum of 150 Euro/m<sup>2</sup> for standard collectors

195 Euro/m<sup>2</sup> for vacuum collectors

125 Euro/m<sup>2</sup> for air collectors.

10 Euro/m<sup>2</sup> extra for plants with the Austrian environment label

10 Euro/m<sup>2</sup> for a simultaneous installation of a wood heating.

**Connection to district heating with less than 400 kW<sub>th</sub>:**

district heating from biomass:

70 Euro/kW (0 – 100 kW)

35 Euro/kW for every further kW under 400 kW.

The maximum subsidy is 30 % of the investment costs (planning, installing and the plant itself).

**District heating from fossil fuels:**

35 Euro/kW (0 – 100 kW)

18 Euro/kW for every further kW under 400 kW)

For both possibilities the company can gather 5 Euro/kW extra for the simultaneous installation of a solar thermal plant.

**Raw material management:**

30 % of the investment costs for machines, production plants and further relevant plant components.

20 % of the costs for investments in innovative service concepts

Minimum investment: 35,000 euro

Maximum funding: 500,000 euro

Additional funding of 5 % for the development of a new production process based on the EU eco-design guideline (2009/125/EG)

Additional funding of 5 % (max. 10,000 Euro) for EMAS certified companies.

**Material use of products made of renewable raw materials:**

30 % of the investment costs for machines, production plants and further relevant plant components.

35 % of the investment costs for SMEs which meet the criteria for EU-co-financing.

Minimum investment: 10,000 Euro

Maximum funding: 1,500,000

Additional funding of 5 % (max. 10,000 Euro) for EMAS certified companies.

**Local heating based on renewable sources > 400 kW:**

A subsidy can be gained for biomass- local heat (boiler, net), new construction and extension of heat distribution grids, renewal of boilers in existing biomass local heating, optimisation of local heat plants (primary side), hydraulic optimisation of the customers (secondary side), biomass combined heat and power plants as well as geothermal plants in areas which cannot be supplied by existing local heat grids based on waste heat, geothermal heat or biomass.

For every system type immaterial costs up to 10 % of the material costs, costs for qm-heizwerke (qm heizwerke is an Austrian quality management programme to increase the technical quality and efficiency of biomass heating plants and local heat grids) and plant components for the operation of the plant (construction of a heating centre incl. machines and storage room for combustibles, pipelines, delivery station, measures to increase the resource efficiency) can be submitted.

There are numerous basic conditions to be met (thermal power, distance, emissions etc.).

**Local heat:**

25 % (30 % for SMEs which meet the criteria for EU-co-financing) of the mentioned additional investment costs (costs less costs for a similar fossil heat generator) can be gained.

At maximum: 900 euro per saved tonne CO<sub>2</sub>.



Minimum investment: 10,000 Euro.

5 % extra (max. 10,000 Euro) for EMAS certified companies

5 % sustainability bonus for use of industrial heat or regional resources.

Minimum annual CO<sub>2</sub> savings: 4 tonnes.

The total utilisation rate (sold heat with regard to the total fuel input) has to be 75 % at minimum or has to increase compared to the plant before. A grid return temperature of 55°C has to be strived.

**New construction or extension of heat distribution grids:**

25 % of the investment costs (costs for digging work, district heat piping, delivery station or necessary adaptations in the heat centre and hydraulic)

At maximum 1,350 Euro per saved tonne CO<sub>2</sub>.

Minimum investment: 10,000 Euro

Minimum annual CO<sub>2</sub> savings: 4 tonnes.

The total utilisation rate (sold heat with regard to the total fuel input) has to be 75 % at minimum or has to increase compared to the plant before.

**Optimisation of existing local heat:**

15 % of the investment costs at measures at the primary side,

25 % for measures at the secondary side.

Minimum investment: 10,000 Euro

5 % extra for EMAS certified companies

5 % sustainability bonus.

There has to be a reduction of fuel input, a Gradual increase in the overall efficiency, reduction of the grid return temperature.

**Renewal of boilers:**

15 % of the investment costs

Minimum investment: 10,000 euro

5 % extra for EMAS certified companies

5 % sustainability bonus.

The overall efficiency has to be increased.

**Combined heat and power plants based on biomass:**

20 % of the additional investment costs (costs less costs for a similar fossil heat generator).

If less than 100 % of the technical usable heat is used, the percentage is shortened proportionally.

Maximum subsidy: 675 euro per saved tonne CO<sub>2</sub>.

Minimum investment: 10,000 euro, minimum annual CO<sub>2</sub> savings: 4 tonnes. 5 % extra for EMAS certified companies, 5 % sustainability bonus. Minimum fuel efficiency: 60 %, at minimum 30 % of the annual available heat has to be used.

**Geothermal plants:** 30 % of the additional investment costs (costs less costs for a similar fossil heat generator). Maximum subsidy: 1,350 euro per saved tonne CO<sub>2</sub>

Minimum investment: 35,000 Euro

Minimum annual CO<sub>2</sub> savings: 4 tonnes.

5 % extra for EMAS certified companies.

**Highly efficient combined heat and power plants based on natural gas and liquid gas:**

25 % of the additional investment costs (costs less costs for a similar fossil heat generator), (30 % for SMEs which meet the criteria for EU-co-financing)

At maximum: 675 Euro/kW

5 % extra for EMAS certified companies.

The electric annual efficiency has to be 25 % at minimum. The overall energetic annual efficiency has to be 75 % at minimum. Electric power between 6.7 and 100 kW, minimum investment: 10,000 euro. The produced electricity has to be used internally.

**Production of electricity in isolated areas based on renewable energies (photovoltaic plants, small hydro power plant, cogeneration plant, wind turbines, electric storages, further plant components):**

30 % of the additional investment costs (costs less costs for a similar diesel generator), (35 % for SMEs which meet the criteria for EU-co-financing)

Maximum subsidy: 1,500,000 euro  
5 % extra for plants in alpine (from 1,200 m see level) or ecologically sensitive areas  
5 % extra (max. 10,000 euro) for EMAS certified companies  
Minimum investment: 10,000 euro.

There are also subsidies for electric vehicles for companies, mobility management, charging infrastructure, regional development, model refurbishments etc. These topics will be described at a later stage in a separate table. Furthermore there is the refurbishment campaign for companies.

#### **Regional funding programmes**

**This regional funding is not part of the evaluation activities described below.**

**Lower Austria** provides subsidies for the projects investing in raising energy efficiency and use of renewable sources. The investment projects should last at least 5 years (3 years in case of SMEs) after the completion of the investment. Operational environmental grants are max. 40 % of eligible costs or max. € 100,000. Also subsidies are provided for heat extraction plants (extraction of waste heat from processes in industrial and commercial enterprises, transport pipelines for the injection of waste heat into new and existing networks as well as network extensions). In addition, heat pumps (max. 10 % (max. € 20,000) of eligible initial costs), biomass heating (initial investment for boiler max. 10 % (max. € 20,000)) and connection to district heating could be subsidized. This province provides grants for revitalization of shut down companies (up to € 750,000) with maximum 10 % (max. € 30,000) of eligible costs. Use of LED (KPC) and solar thermal plants (KPC) in the companies are supported by max. 10 % or max € 20,000 each. For the construction of new buildings only for SME (investment between € 20,000 and € 750,000) the max. subsidy of 10 % or max. € 30,000 is provided. For the thermal renovation of the buildings the companies receive a grant of maximal 10 % (max. € 100,000) and in case of partial renovation max. 5 % (max. € 50,000).

**Upper Austria** provides subsidies for connecting the heating system to district heating and cooling (20 % of the eligible costs), thermal solar collectors (20-35 % of the eligible costs) and PVs (Grid-controlled photovoltaic systems and solar power storage for businesses), heat pumps, energy efficiency, industrial waste heat decoupling, heat recovery in refrigeration and ventilation systems and optimization of existing renewable energy production plants (50 % of the chargeable costs, max. 3,000 euro).

**Salzburg** provides Energy voucher for small enterprises with funding amounts to 50 % of the eligible investment costs up to 5,000 euros direct grant. This regards: efficient circulating pumps, frequency converter, LED lightning, or renewal of compressed air ducts. Additional company subsidies for climate protection include use of renewable energy sources, saving energy and electro-mobility. .

There is PV voucher as well as efficiency and storage voucher for consultation to construction and optimization of the system for the companies.

**Styria** provides product-independent and free advice on construction of new building, renovation and heating systems.

**Tyrol's** main priorities goes towards subsidies for solar thermal plants, thermal renovation of the buildings, heat pumps, energy saving (heat recovery measures, heating optimization, lighting optimization), power (electricity) generation in island locations and vehicles with alternative propulsion drive and electro mobility.

**Vorarlberg** also provides energy consulting for the companies as well as grants for the new building and renovation.

**Vienna** provides subsidies for the PV plants (up to 30 % of the eligible costs), use of waste heat and solar heating of the buildings, external professional advice with the aim to save resources and operating costs (OekoBusiness Check).

#### **2. Are specific aspects targeted for companies in alpine regions? If yes, which aspects are these? Please describe them.**

In this region in Austria accommodation and restaurants is a big branch. There is no specific funding measure in the UFI for companies in alpine regions. But there are measures funded which can easily be realised in accommodation and restaurants – like heat recovery, measures in lighting, cooling, heating systems based on renewable energies refurbishment measures (funded within the refurbishment campaign) etc. or measures for craftsmen, whose main energy issue is the transport.

#### **Organisation structure**



**3. Which participating bodies do exist? Please describe their role and responsibilities.**

<b>Participating body</b> (Government/Ministry, energy agency, etc.)	<b>Role of the body</b> (Funding body, implementing and promoting organisations etc.)	<b>Responsibilities</b>	<b>Comments</b>
BMNT (the Federal Ministry of Sustainability and Tourism)	Funding body	Final approval of the subsidy application (3 to 4 times a year).	After the KPC has evaluated the submitted project the commission of the Ministry discusses the proposal of the KPC and makes a proposal to the Ministry of Sustainability and Tourism (BMNT) for authorisation.
KPC (Kommunalkredit Public Consulting GmbH)	Implementing organisation	Checking applications, collecting missing information, first approval and setting up subsidy recommendation for each application.	For some federal states the KPC also manages the regional funding programmes.
Regional consultant organisations of the federal state	Promoting and advising organisations		Each consultant organisation has either energy consultants under contract or the consultants are employees of the organisation. These energy consultants make energy efficiency suggestions to companies and inform them about subsidies. They also do economy calculations, help to apply for a subsidy and help to realise measures. The regular personal contact to the customers is very important.
Federal states	Granting additional subsidies	Checking approval of KPC and offering additional funding	The federal states offer different additional funding for measures. If there is a positive approval of the KPC and Ministry, there has to be a form filled in and the further application process is not complicated.

**4. Analysis of the background processes**

In the case of the UFI the Ministry for Sustainability and Tourism (BMNT), as the financier authorises the proposal of the KPC. Basically this ok but the meetings of the commission take place just three to four times a year. So the process time and the

time the company has to wait for the approval is quite long.

In some federal states the realisation rate is quite high. In others not. The reason is that companies need information and regular support. In federal states with a high realisation rate this works very well.

More background information will be described after a meeting with the KPC.

#### Communication strategy

**5. How does the information get to the target group and who is promoting the supportive instrument, to which extent?**

The best communicators for the subsidy system are the energy consultants of the regional energy consulting organisations of the federal states.

The information about the subsidy offers is shown on the Website of the KPC but for companies with little resources it is hard to read everything through, to understand the conditions and to apply. Thus the support of the companies (by energy consultants) is very important.

#### Analysis of the supportive system

**6. How many companies do you have in the concerned area where the program is offered (whole country or region)?**  
This number is researched at the moment and will be displayed later.

**7. Is there a monitoring or evaluation of the supportive system?**

☒ Yes ☐ No

**8. How is the monitoring system/analysis constructed?**

There is a regular analysis report (evaluation of the environment subsidies of the government) about the duration of three years.

**9. Which indicators were used to monitor/analyse the effects and what was the result of the monitoring/analysis (number of subsidised projects, kWh saved, CO<sub>2</sub> saved, amount of granted budget, amount of investment of the enterprises, further key factors etc.) Please interpret the numbers!**

**In 2016:**

- The average amount of subsidy of the UFI was 18,773 Euro. There is a decrease of the average amount of subsidy from 2015 to 2016 of about 40 %. The reason is the increase in the number of applications for lump sum subsidies for projects with a low funding intensity. These subsidies are not accepted very well.
- Large growth in efficient energy use through the change to LED lighting systems: 2015: 540 projects with 1.9m. Euro subsidy, 2016: 618 projects with 2.4m Euro subsidy.
- There is also a growth in the funding focus operational energy saving measures 2015: 314 projects with 75.1 Mio Euro environment-related investment costs, 2016: 372 projects with 100m Euro environment-related investment costs. The reason for that is mainly based on large projects with industrial extraction of waste heat. The cash value of the subsidy decreased from 17.4 to 16.5m Euro. The reason is that more projects were affected by the efficiency criteria for funding. A further reason is that, at large-scale plant and process optimising projects, there was considerably smaller environment-related additional investment costs considered as a basis for funding.
- There is a decrease in connection to district heating and installation of heat pumps. District heating: 2015: 180, 2016: 122 projects. Installation of heat pumps: 2015: 100, 2016: 67 projects. The reason is the relatively low price for fossil fuels and despite higher funding rates the investments for these plants is less attractive.
- There is a continuous decrease in applications of accommodation companies and restaurants (8 % of the available financial means). *(In a discussion with the responsible person at KPC this aspect will be discussed.)*
- In manufacturing industries the granted subsidies are increasing. 31 % of the financial means are used for this sector.
- There was a decrease in the branches energy supply and water supply. The reason is that the economically possible expandability in many regions is overriding and there are more projects with measures at existing plants than the construction of new plants.
- There were 2,991 climate-relevant projects funded with a reduction of 258,400 tonnes CO<sub>2</sub> equivalent per year. These are 4.3m tonnes related to the technical operating life of the plants. This is 1.3m less than in the year 2015. The reason is the strong increase of lump sum subsidies and more small-scale projects.



- 67 % of these CO<sub>2</sub> savings result from projects in the area of renewable energies. 32 % of the CO<sub>2</sub> savings results from energy efficiency projects, which is an increase compared to 2015 (22 %).
- Until the year 2020 the cumulative CO<sub>2</sub> savings from energy efficiency projects will amount 1.2m tonnes.
- Distribution on the financial aid:
- 10 % of the subsidised projects account for 76 % of the financial means. These 10 % also account for 74 % of the targeted CO<sub>2</sub> savings. **This fact shows the importance of large-scale projects for the environment effects to be obtained. The support of investments of the large-scale projects results in according environment effects with comparatively high subsidy efficiency.**
- In addition to the available governmental financial means, money from the European funds for regional development can be used, if the selection criteria can be fulfilled. In 2016 21 projects with 9.3m Euro were approved (EFRE structure funds period 2014 – 2020: 65.8m Euro). The governmental funding for these projects was 1.03m Euro.

For the period **from 2014 to 2016** the following indicators are listed:

- Number of projects of the environment subsidy: 6997 subsidised projects
- Number of projects of the refurbishment campaign: 42,091 subsidised projects
- (Number of projects of regional consulting: 5,938 cases)
- Subsidy from the government in total (UFI, refurbishment campaign): 375.1m Euro
- Subsidy from EU programmes: 32.6m Euro
- Subsidy from the federal states: 29.9m Euro
- Ecologically relevant investments, CO<sub>2</sub> reduction, MWh energy savings, MWh renewable energies
- 12,200 Jobs (11,200 full time jobs) saved
- Environment-related investments of the UFI: 1391.1m Euro
- (Environment-related investments of all subsidies (UFI, refurbishment campaign, consultancies): 2 827.2m Euro (private and companies))
- Funding cash value of the UFI: 186.4m Euro. This is a reduction of 17 % compared to the period before.
- Average funding of all UFI projects (governmental funding) is 13.4 %. For the governmental funding, regional funding and EU-funding: 19.7 %
- Added value: 900m Euro
- 68 % of the investments represent construction/building costs, 19 % represent machines and plants
- CO<sub>2</sub> reduction per year: 825,000 tonnes
- Energy savings per year: 859,100 MWh
- Energy from renewable sources per year: 1,156,900 MWh
- Average processing time for applications: 181 days

Some indicators are calculated also by category (renewable energy, efficiency, mobility, climate etc.)

A total of 2,063 consultations with total costs of around 4.2 million euros were supported with around 1.1 million euros. The CO<sub>2</sub> reduction potential triggered by the consulting activities and the environmental investments initiated thereby amounts to approx. 64,432 tons per year.

**10. Are the monitoring activities repeated regularly?**

- Yes, every three years.

## Detailed description of klimaaktiv energy efficient companies (klimaaktiv energieeffiziente Betriebe)

### Basic information about the supportive instrument

**Title of the supporting instrument:** klimaaktiv energy efficient companies (klimaaktiv energieeffiziente Betriebe, Status of April 2018)

**Country or region(s) in which the program is valid:** Austria

**Target of the supportive instrument:** Informing and advising companies in increasing their energy efficiency and using renewable energies. klimaaktiv pushes the development and the market launch of innovative technologies in future-oriented subject areas.

**Short description/contents/targets of the supportive instrument (max. 3000 characters):**

The campaign "klimaaktiv energy efficient companies" is a sub category of the Austrian climate protection initiative klimaaktiv. With its rich information and quality standards, klimaaktiv offers concrete support in aligning companies to energy efficiency. Together with the federal states, klimaaktiv provides a comprehensive, neutral advisory network. Especially for companies klimaaktiv offers support in the areas of building and refurbishing, saving energy (production, purchase, energy management), renewable energies and mobility:

- product neutral standards and advice tools
- Know-how exchange with leading experts
- Subsidised advice with realisation subsidies – partly in cooperation with the federal states of Austria
- Collective public relations work in an Austrian network

One of the focuses of this programme is the advisory network. klimaaktiv has close cooperation with the energy agencies/energy consultancy organisations of the federal states. These agencies have energy consultants who do energy advisory in companies for klimaaktiv.

**Financing body (if applicable):** Federal Ministry for Sustainability and Tourism (BMNT)

**Implementing organisation:** Austrian Energy Agency

**Budget (if applicable):** budget defined annually

**Duration (from, to):** annual

**Website to find more information:** <https://www.klimaaktiv.at/unternehmen.html>

**Target group (characteristics of the applying enterprises):** Companies of all branches and sizes

**Sector(s) of the target group:** Basically no special sector addressed, but there are different focus sectors and topics (energy intensive industries), which change annually and which are specifically addressed, e.g. cement industry, compressed air, laundry.

**Application procedure for financial support (if applicable):**

The customer calls the regional energy agency and asks for support. Then the advisor makes an energy consultancy. 50 % are paid by the company and the other 50 % can be gained by the advisor from the regional energy agency. This is the money from the programme of the supported by the regional consulting programme, financed by the BMNT.

**Selection procedure (if applicable):** There is no special selection procedure.

**Possibility to combine this supportive instrument with other instruments:**

The offers of klimaaktiv can be combined with subsidy schemes of the federal states, and of course the UFI (Umweltförderung im Inland – environment subsidy) and the refurbishment campaign. The energy advisors support the companies in getting subsidy.

**Name of the supportive instrument or a part of it:** klimaaktiv energy efficient companies

### Characteristics of the supportive instrument

**Supportive instrument:**

- ☒ Financial support
- ☒ Investment subsidy – cash allowance
- ☐ Subsidised loan

**Subsidised measures/equipment/plant:**

**Area of the supporting instrument**

- ☐ Building insulation





<input type="checkbox"/> Liability <input type="checkbox"/> Subsidised consultancy <input type="checkbox"/> Tax reduction <input type="checkbox"/> Other: <input checked="" type="checkbox"/> Information/awareness raising campaign <input type="checkbox"/> Law (environment protection law, energy efficiency law, etc.) <input type="checkbox"/> Regulation <input type="checkbox"/> Directive <input type="checkbox"/> Other:	<input type="checkbox"/> New windows <input type="checkbox"/> Heating system <input type="checkbox"/> Cooling system <input type="checkbox"/> Ventilation system <input type="checkbox"/> Wellness facilities <input type="checkbox"/> Production plants <input type="checkbox"/> Lighting system <input type="checkbox"/> Energy management system <input checked="" type="checkbox"/> Energy advice <input type="checkbox"/> Energy Audits <input type="checkbox"/> Corporate environmental measures <input type="checkbox"/> Mobility <input type="checkbox"/> Other:
<p><b>1. Description of the supportive instrument in detail:</b></p> <p>klimaaktiv energy efficient companies offer the following services:</p> <p><b>Optimising production processes</b></p> <p>Educated energy advisors of klimaaktiv support industries and commercial enterprises in planning and realising energy efficiency measures. By developing a measure plan and the realisation of at least one of the suggested measures, companies can sign a target agreement and thus become a klimaaktiv project partner and use a specific logo.</p> <p>If the energy advisor is listed at the energy consulting services of the federal States of Austria, these consultations are subsidised with 50 %. (25 % are financed by the UFI-funding and the other 25 % are financed by the federal state.) The amounts can differ a little bit but are basically nearly the same in the federal states. The funding modules, topics and duration vary significantly in the federal states.</p> <p>Companies are also professionally and financially supported in implementing EMAS (Eco-Management and Audit scheme): In Salzburg companies get up to 160 advisory hours funded with 50 % for implementing EMAS.</p> <p>For the implementation of ISO 14001 companies get up to 120 hours funded with 50 %.</p> <p>Aftercare of the implementation of EMAS or ISO 14001: 8 advisory hours with 50 % funding.</p> <p>Recertification of EMAS or ISO 14001: 20 advisory hours with 50 % funding.</p> <p>For companies which are certified by the environment label the amount of funding is 75 %.</p> <p>All regional energy organisations get one third of the administration costs for processing the advisory programme from the UFI programme.</p> <p>klimaaktiv offers professional further education with different technology focuses for professional energy advisers in and also for operational energy managers in production companies.</p> <p>Further useful tools:</p> <ul style="list-style-type: none"> <li>Technology guidelines identify the biggest energy users and suggest improvements. The following topics are covered at the moment: compressed air systems, pumping system, ventilation systems, steam systems, cooling systems, IT infrastructure, lighting systems, use of waste heat, measuring units.</li> <li>There are concepts available for selected branches in which the energy efficiency potentials are analysed. The following branches are covered at the moment: wood industry, grain mills/starches, storage facilities, textile cleaning, metal construction and metal processing, plastic processing, bakery, woodworkers, hair dressers, automotive enterprises.</li> <li>A benchmark database offers the comparison of a company with companies of the same branch.</li> </ul>	



- Numerous best practice examples are available online.

#### **Energy efficiency in buildings**

Klimaaktiv offers the **building standards** for new buildings and refurbishments for office buildings, hotels and accommodation, food supermarkets, education institutions, geriatric centres. There are also basis criteria. It is a neutral and transparent quality label for energy efficient buildings. The building standard contains topics like planning and construction, energy and supply, materials and structural design, comfort and indoor air quality, for which the applicant can collect points according to his/her engagement in the specific areas. There are three quality stages depending on the total points: bronze, silver and gold. The declaration is done online by filling in a form and by uploading special documents. The check of the evidences and calculations is done by a plausibility check of klimaaktiv. The check and the declaration are free of charge. After the successful declaration, the company can call itself a "klimaaktiv partner" and receives a badge.

klimaaktiv offers an initial consultation to support companies to define quality criteria for their new building or refurbishment – free of charge.

Further useful tools offered by klimaaktiv energy efficient companies:

- Tool to calculate the economic efficiency of energy efficiency measures "econ calc"
- Guideline for the suitability, usage und environmental compatibility of ecologic insulation materials
- Amortisation and economic efficiency calculator for thermal insulation materials
- Guideline for the suitability, usage und environmental compatibility of renewable heat systems
- Photovoltaic calculator
- Guidelines for sustainable facility management

#### **Increasing the efficiency of the mobility**

The consultation programme for companies, property developers and fleet operators supports at developing mobility concepts and the project submission for the klimaaktiv mobil subsidy programme. Companies which realise mobility measures and apply for a subsidy or make a target agreement, can become klimaaktiv mobil project partners.

The klimaaktiv mobil map shows good practices in converting the fleet, biking measures, fuel-saver courses.

The subsidy programme of klimaaktiv mobil offers subsidies for:

- Purchasing or renewal of vehicles with alternative drives
- Electric vehicles (cars, bicycles, including facilities like charging stations)
- Bike stands, development of a bicycle rental
- Change of the transport system from trucks to conveyor belt
- Rationalisation of transport
- Job tickets
- Realisation of a car sharing model
- Collecting taxi, operation of a shuttle
- Awareness raising measures
- Fuel saving trainings

This subsidy programme will be described in a separated chapter.

#### **Smart purchasing**

When buying, it is advisable to have a look at basic features of a product: Efficient appliances use less electricity and save costs; disposal costs can be avoided by paying attention to ingredients; CO<sub>2</sub> emissions can be avoided/ reduced depending on the type of drive or output of company vehicles.

The internet platform [b2b.topprodukte.at](http://b2b.topprodukte.at) offers an overview of the most energy saving products in the categories lighting, industrial refrigeration, warm water/heating/air conditioning, electro mobility, monitors, printers, mobile phones etc.

#### **Klimaaktiv competence partner**

These partners are experts who communicate their current knowledge to thematic focuses like energy efficiency and



renewable energy. In cooperation with education providers all over Austria, education is offered for two target groups: executing professionals (builders, installers, fuel saving trainers etc. and energy consultants (mainly of the regional programmes of the federal states) and energy manager or technicians of companies.

Competence partners are allowed to use the klimaaktiv logo and are shown at the klimaaktiv map.

As already mentioned, companies who realise measures in different areas and make a target agreement can become **klimaaktiv project partners** and are allowed to use the logo.

There are also **klimaaktiv programme partners**. These programme partners are companies or organisations, who support klimaaktiv in one or more programmes. They contribute to the targets of the climate protection programme klimaaktiv by dissemination of topics, quality criteria and quality standards, knowledge-exchange and participation at the development and preparation of know-how, realisation of own climate protection measures.

#### Award for energy efficient measures

Since 2008 more than 320 energy efficiency measures were collected through an annual competition where companies can submit their measured and apply for an award.

In 2018 the new focus is on the overall view on energy systems: companies shall submit their comprehensive method to improve energy efficiency or the use of renewable energies in their production processes.

#### Austrian climate protection award

The Austrian Ministry for Sustainability and Tourism and the ORF (biggest national TV channel) have been awarding the highest award for climate protection and innovative projects and ideas since 2008. A huge part of the success is done by the experts of the klimaaktiv network. They look for model examples, motivated companies, municipalities and initiatives of the civil society. Nearly 200 submissions were assessed in 2017. There are strict criteria like effect for the climate protection, energy and cost effectiveness, market relevance, grade of innovation, creativity, role model effect. The best of all are awarded in the four categories daily life, municipalities & regions, agriculture, companies and company energy change (big enterprises). The national TV (ORF) is mainly advertising for this competition.

**2. Are specific aspects targeted for companies in alpine regions? If yes, which aspects are these? Please describe them.**

#### Organisation structure

Participating body (Government/Ministry, energy agency, etc.)	Role of the body and responsibilities (Funding body, implementing and promoting organisations etc.)	Comments
Austrian Ministry for Sustainability and Tourism (BMNT)	Funding body and monitoring activities	The responsible persons of each klimaaktiv program know a rough budget in advance and develop an activity plan for the next year. This plan is submitted to the BMNT, discussed, maybe adapted and then approved.
Austrian Energy agency	Program management of all klimaaktiv programs, implementing body of klimaaktiv energy efficient companies: Communication to and cooperation with the regional programs.	This regional cooperation is very important, as the companies have local contact persons to address to. In some federal states it works very well (e.g. Salzburg) and in other federal states it doesn't work very well.
Regional programs/energy consultancy services of the federal states	Disseminating information, advising companies, reporting to the KPC about the advisories because the advisories are funded by the UFI (see	

	description of the UFI).	
<b>3. Analysis of the background processes</b>		
<p><b>Communication strategy</b></p> <p><b>4. How does the information get to the target group and who is promoting the supportive instrument, to which extent?</b></p> <p>Basically all information is available online. The management of klimaaktiv energy efficient companies gives information about the services to the regional partners (per e-mails, telephone calls). This information is communicated mainly to the energy advisors of the network of the regional partners but also to their mailing list of companies. The management is also often invited to network meetings or other events with energy advisors and companies to present the services of klimaaktiv energy efficient companies. In this federal states field trips, network meetings etc. are organised for companies and energy advisors. These are very well received.</p>		
<b>Analysis of the supportive system</b>		
<p><b>5. Is there a monitoring or evaluation of the supportive system?</b></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>6. How is the monitoring system/analysis constructed?</b></p> <p>There are annual monitoring meetings with the BMNT where the progress of the programme and the plan for the next year are discussed. There are monitoring reports on quarterly basis – what was done plan for the next quarter. In addition there is list of ongoing or finished results and deliverables.</p> <p><b>7. Which indicators were used to monitor/analyse the effects and what was the result of the monitoring/analysis (number of subsidised projects, kWh saved, CO2 saved, amount of granted budget, amount of investment of the enterprises, further key factors etc.)? Please interpret the numbers!</b></p> <p>The main focus of the klimaaktiv programme energy efficient companies lies on the energy consultancies. Therefore these numbers are presented here. The regional partners/organisations/agencies report the number of funded advisories to the KPC. There were 5,938 energy consultancies done in 2,932 companies from 2013 to 2015 in Austria. (In 2015 Salzburg did 1,045 energy consultancies (including e5 municipalities and climate alliance advisories)). Following these advisories, 5,036 measures were realised. There was a sample of 1,497 environment measures analysed which resulted in a payback period of 4.2 years. The realised measures were mainly technical measures (share of technical measures in relation to all measures: 41 %, share of investments: 93 %, annual savings: 70 %).</p> <p>The effects of all consultancies done, calculated with the numbers of the sample, result in avoiding 3,600 tonnes waste, 547 GWh fossil energy saved and 136,500 tonnes CO<sub>2</sub> saved. The measures correspond to investments of 98m Euro and result in energy cost savings of approx. 23.5m Euro. In addition environment aspects were taken into account at investments for infrastructure and the core business in the amount of 163m Euro. An economic analysis (e.g. jobs) was not done for the evaluation of this funding scheme.</p> <p><b>8. Are the monitoring activities repeated regularly?</b> Yes, annually (monitoring meetings) and quarterly (reports).</p>		