

FIRECE – Interreg CENTRAL EUROPE Project CE1131

WPT2 Implementation of the instruments, testing and transferability actions

**Preparation of PA 1: CE
Ex-Ante Assessment
Analysis report**
*DELIVERABLE
D.T2.1.2*

Contribution of the Austrian region

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1. Introduction and definitions

In preparation for the Pilot Action 1 of the FIRECE project and following the Questionnaire, in this report 2.1.2 the results of the analysis of the market situation of Austria (PP5) are documented. The special data and theory of the ex-ante assessment was not available for whole Austria, but it exists an ex-ante assessment Analysis of the region of Upper Austria (Upper Austrian high-tech fund, 2014), which was used in this Report. The part of the Upper Austrian high-tech fund starts at chapter 2.7. , the other chapters are gathering informations of whole Austria, in chapter 6 the region of Burgenland is being edited. In chapter 1 the introduction and definition of the "Block 1 market assessment of article 37(2)" of the Common Provision Regulations (CPR) is shown. The situation of market failures, suboptimal investment situations and investment needs of Austria from demand and supply side is analysed in chapter 2. There is an overview of the demand side of the economic, industrial sector, the energy requirement and the regional energy plan. On the other hand the transversal offer and the specific offer at national level of the supply side is shown. Afterwards the gap between the demand and supply side is documented. In chapter 3 the assessment of the added values of financial instrument is described. The qualitative and the quantitative added values are shown. Two examples of the quantitative added values are presented. The consistency with other forms of public intervention is shown in chapter 4. An estimate of additional public and private resources of the financial instrument is assessed in chapter 5. An evaluation of the coordinated use of structural and strategic funds and on the other hand the combination of ESIF and EFSI funds in an investment platform is shown and in chapter 6 the lessons drawn of the use of financial instruments are pointed out.

1.1. Definition: Block 1 Market assessment

The "Block 1: Market assessment" of the ex-ante assessment, as required by the article 37 (2) of the Common Provision Regulations (CPR)¹ and summarized in the following Figure 1:

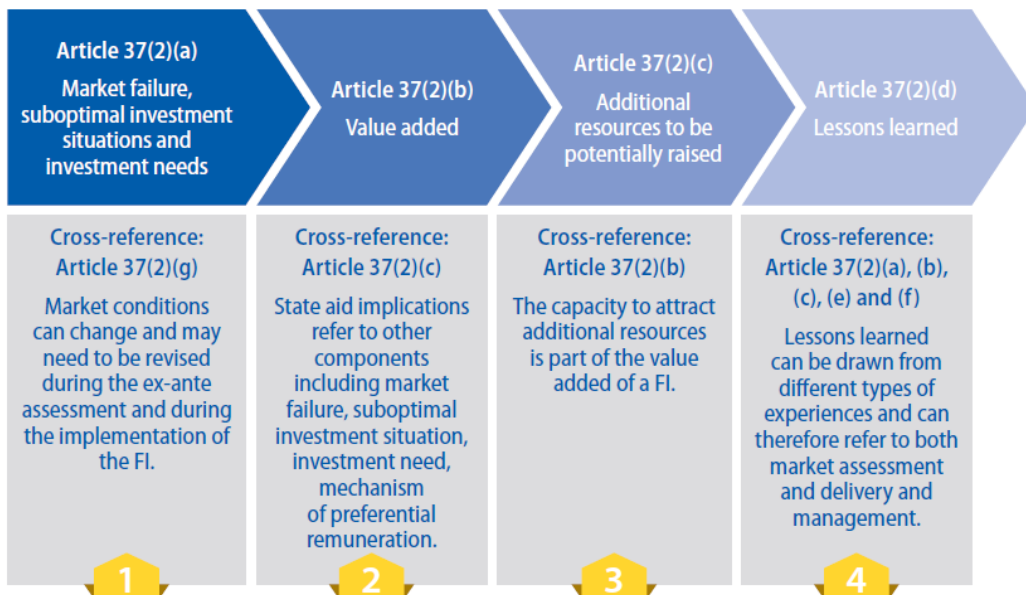


Figure 1: Block 1 of the ex-ante assessment²

¹ Common Provision Regulations (CPR): (EU) No 1301/2013 of the European Parliament and of the Council of 17 December 2013

² fi-compass: "Ex-ante assessment methodology for financial instruments in the 2014-2020 programming period - General methodology covering all thematic objectives - Volume I"

The purposes of block 1 are as follows:

- to examine the balance between supply and demand, highlighting any financing needs (market failures and sub-optimal investment conditions as identified in this document) that require the intervention of Financial Instruments
- to highlight the added value represented by the choice to use Financial Instruments, also presenting measures to ensure consistency with other forms of public intervention and to minimize market distortion
- to identify the possible additional public and private resources, that each Financial Instrument has the possibility to activate by providing in-depth information on the SME initiative, on how the combination of financial instruments and grants can take place and some considerations regarding the need to provide forms of preferential remuneration for private investors
- to identify through the analysis of similar experiences the main success factors and critical issues to be considered in the setting of Financial Instruments in the areas of study.

2. Analysis of market failures, suboptimal investment situations and investment needs

In chapter 2 the demand and supply side analysis of the market is made. The gap between the demand side and the supply side is done. The failures of the market (supply- and demand side, suboptimal investment situations) are pointed out.

2.1. Demand-side analysis: the economic context

The economic sectors in Austria are divided into the primary sector (agriculture/mining) at 4%, the secondary sector (industry) at 25% and the tertiary sector (services) at 71%, as can be seen in Figure 2.

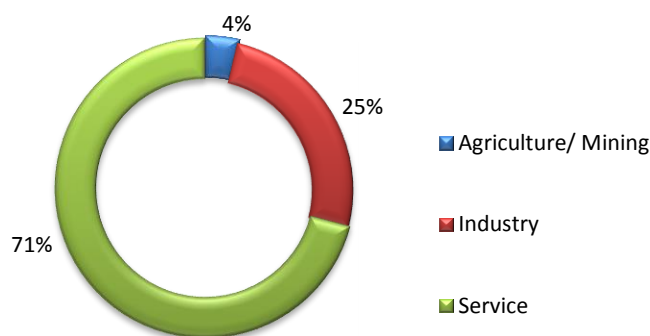


Figure 2: Economic sectors in Austria

In Figure 3 the gross domestic consumption by energy source in 2016 shown. The final energy consumption in 2016 was **1121 PJ**; it was divided in the productive sector (329 PJ), in transport (385,5 PJ), in services (113,1 PJ), in private households (271,6 PJ) and in agriculture (21,8 PJ).

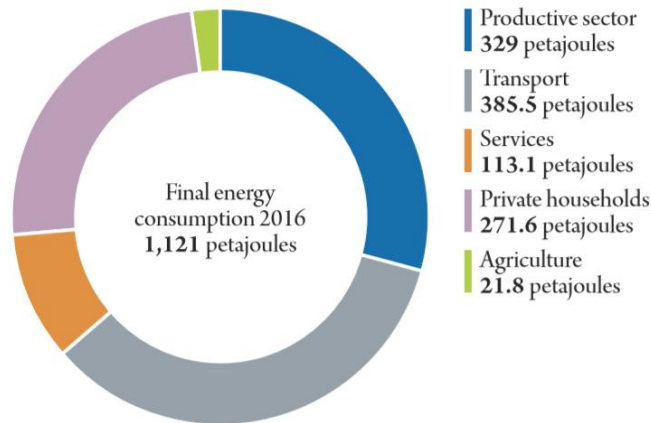


Figure 3: Energy consumption in 2016 – in productive sector, transport, services, private households and agriculture

The Gross domestic consumption in 2016 was **1435,4 PJ**. It is divided by in hydroelectric power (143,4 PJ), in wind (18,8 PJ), in photovoltaics (3,9 PJ), in biofuels and other renewable energy sources (262,8 PJ), in combustible waste (34,3 PJ), for **renewable sources**. **Fossil sources** are divided in gas (300,7 PJ), in oil (519,7 PJ), in coal (125,9 PJ) and in electricity trade balance (25,8 PJ), shown in Figure 4. [1]

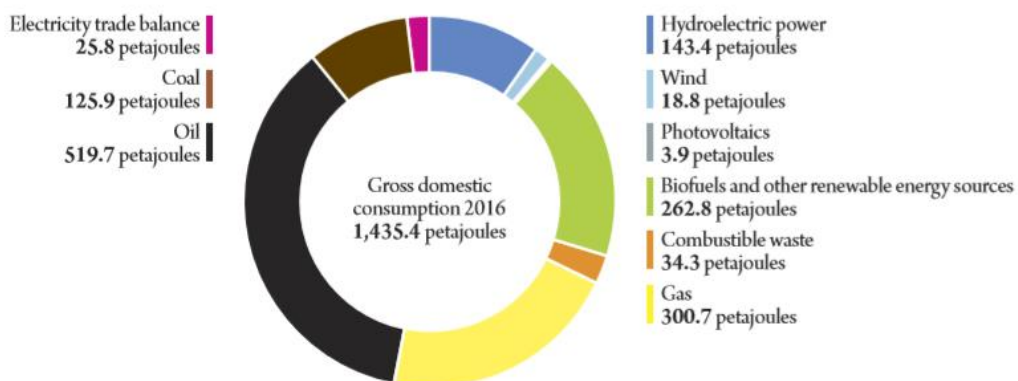


Figure 4: Gross domestic consumption by energy sources (2016)

2.2. Demand- side analysis: industrial context

In this chapter the demand side analysis for the Austrian side and the European side in the industrial context is pointed out.

2.2.1. Austrian side

According to the EU Commission's performance review, the Austrian SME sector is one of the most adaptable in Europe. Between 2010 and 2018, value added rose by an average of two percent, by 16,8% overall. Among the most important industrial sectors are machinery/metal, construction, electronics, gas and heat, chemicals, vehicles, steel and mining, timber and others, seen in Figure 5. [1]

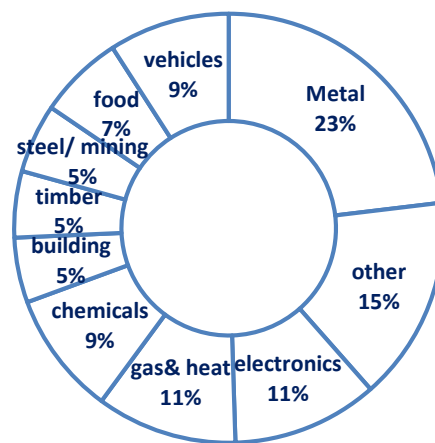


Figure 5: Branches of Trade in Austria

2.2.2. European side

EUSIPA- European Structured Investments Products Association

Together with the certificate associations of Germany, Italy and Switzerland, "Zertifikate Forum Austria" founded a joint umbrella association in Brussels in 2009. In 2010, France and Sweden joined as additional members. In 2013, Great Britain, Belgium and the Netherlands followed. The Luxembourg Association, which is currently in the process of being founded, is scheduled to join in 2018. EUSIPA is the first and only pan-European organization to represent the interests of the certification industry.

Tasks and objectives

EUSIPA is the voice of the certification industry in Europe. EUSIPA is committed to an attractive and fair regulatory framework for structured securities. The umbrella association is the point of contact for politicians and European securities regulators for all questions relating to this product landscape. Wherever desired, the association makes its expert knowledge available. It accompanies parliamentary initiatives and regulatory projects of the Commission and takes a position on all topics of importance for the European certificated industry.

The aim of this umbrella organization is the Europe-wide coordination of joint initiatives in the areas of transparency, product clarity and investor information as well as the agreement of market standards. This also includes proactive and externally transparent influence on European legislation and support for national associations in their work on regulatory issues at local level. The "Zertifikate Forum Austria" is actively represented in the most important committees and working groups of EUSIPA.

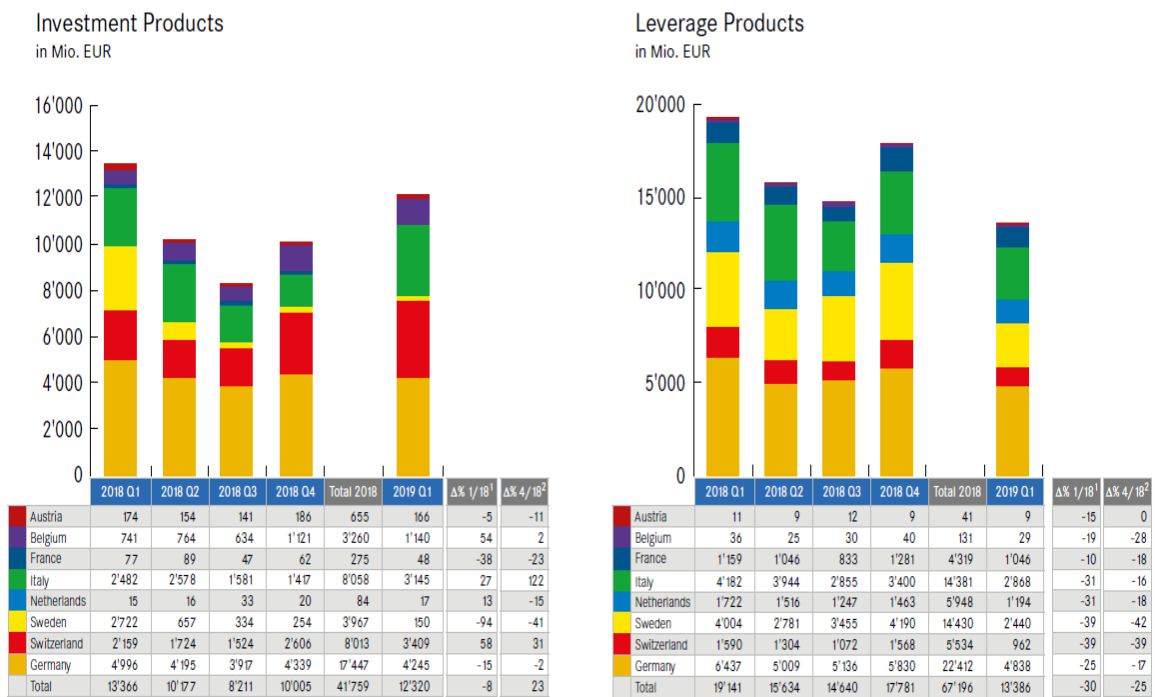
Stock exchange turnover in annual comparison:

Stock exchange turnover sank- measured from Q3 2017 to Q3 2018- by 9 percent to 22.8 billion euros. The turnover of leverage products in Q3 amounted to 14.6 billion euros, which represents a decline of 2 percent over Q3 2017.

Total market volume up slightly:

Open interest rose by 2 percent in Q3 2018 compared with Q3 2017. The invested volume in Germany, Switzerland, Belgium and Austria amounted to 261.6 billion euros. The volume of leverage products fell by 77 percent. These strong changes are primarily due to evidence in the Swiss market.

The number of newly issued products increased by more than 10 percent. Leveraged products account for 85 percent of all newly emitted products and recorded an increase of 23 percent in terms of the number of products. Meanwhile, the number of investment products increased by 4 percent, as shown in Figure 6.








Source: Country Associations, Derivative Partners

¹ Field indicates per cent change between Q1/2019 and equivalent last year quarter Q1/2018.

² Field indicates per cent change between reporting quarter Q1/2019 and previous quarter Q4/2018.

Figure 6: Investment products and leverage products (in Mio. Euro)

For example, Figure 7 shows an overview from the Q1 Quarter in 2019. In Number 1 are the **investment products** (capital protected, yield-enhancement, participation and various), in Number 2 are the **leverage products** (without knock-out, with knock-out, constant leverage and various). [2] [3]

	 Austria	 Belgium	 France	 Germany	 Italy
Number of New Listings on Exchange					
1 Investment Products	802	94	1'291	170'789	530
11 Capital Protected	n/a	n/a	0	34	n/a
12 Yield-Enhancement	n/a	n/a	1'291	91'293	n/a
13 Participation	n/a	n/a	0	79'380	n/a
199 Various	n/a	n/a	0	82	n/a
2 Leverage Products	911	545	43'939	988'338	3'315
21 Without Knock-Out	373	n/a	14'032	271'554	n/a
22 With Knock-Out	538	n/a	29'884	709'646	n/a
23 Constant Leverage	0	n/a	23	7'138	n/a
Various	0	n/a	0	n/a	n/a
Total	1'713	639	45'230	1'159'127	3'845
Total change - Δ in % to Q1/18 ²	66	-20	46	7	92
Total change - Δ in % to Q4/18 ³	0	-32	1	-15	27
Number of Exchange Listed Products					
1 Investment Products	3'927	1'587	2'048	543'542	4'168
11 Capital Protected	n/a	n/a	0	1'061	n/a
12 Yield-Enhancement	n/a	n/a	1'935	328'075	n/a
13 Participation	n/a	n/a	113	212'738	n/a
199 Various	n/a	n/a	0	1'668	n/a
2 Leverage Products	4'155	699	46'704	1'218'814	8'254
21 Without Knock-Out	1'845	n/a	21'788	650'360	n/a
22 With Knock-Out	2'310	n/a	24'076	537'442	n/a
23 Constant Leverage	0	n/a	840	31'012	n/a
Various	0	n/a	0	n/a	n/a
Total	8'082	2'286	48'752	1'762'356	12'422
Total change - Δ in % to Q1/18 ²	3	2	25	9	14
Total change - Δ in % to Q4/18 ³	7	-4	7	4	16

¹ Please note that the product category 'Investment Products with Reference Entities' exists only in Switzerland. Values for this category are therefore shown as 'Various Investment Products'.
² Field indicates per cent change between Q1/2019 and equivalent last year quarter Q1/2018.
³ Field indicates per cent change between reporting quarter Q1/2019 and previous quarter Q4/2018.

Figure 7: Quarterly overview Q1, in number 1 investment products, in number 2 leverage products (2019)

2.3. Demand-side analysis: the energy requirement

In chapter 2.3 the analysis of the required energy consumption in Austria is shown as general overview of the renewable sources, of green electricity and of green mobility in Austria.

2.3.1. General

In an international comparison, Austria is a pioneer in the use of renewable energy sources. More than 70% of the electricity is generated from renewable energy sources. Despite renouncing nuclear energy, thus Austria is one of the most CO₂-efficient countries in the EU. The two main sources, hydropower and biogenic fuels, account for the largest share of domestic primary energy due to Austria's topographical location. The use of ambient heat (e.g. heat pumps), photovoltaics and wind energy is continuously and significantly increasing.

Not only the topography is an important factor for the production of renewable energies in Austria - since 2010 the subsidy contracts have almost quadrupled within the framework of eco-electricity subsidies.

The cheapest form of energy is the one that we do not consume - Austria can also report visible successes in the field of energy efficiency. In recent years it has been possible to decouple economic growth (blue graph) from gross domestic consumption (red graph), thus improving primary energy intensity by an average of 1.5% per year (since 2005), as shown in Figure 8.

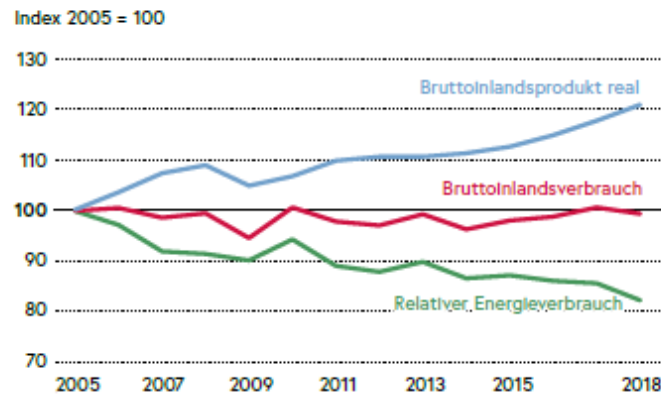


Figure 8: Gross domestic consumption decoupled from economic growth

Austria has undertaken to increase the share of renewable energies in gross domestic consumption to 34% by 2020 and not to consume more than 1050PJ of final energy. Within the framework of #mission2030, the Austrian energy and climate strategy, Austria has set itself the target of increasing the share of renewable energies in the electricity sector to 100% by 2030. In the final energy sector, the share is to be increased to 45-50% and the primary energy intensity is to be improved by 25-30% by 2030. [4]

On the basis of the available data, the target value of 1,050 PJ in 2020 is considered unlikely to be reached. According to the final energy balance of Statistics Austria, final energy consumption in Austria is currently 1,110 PJ for 2016, 1,130 PJ for 2017 and 1,126 PJ for 2018, shown in Figure 9.

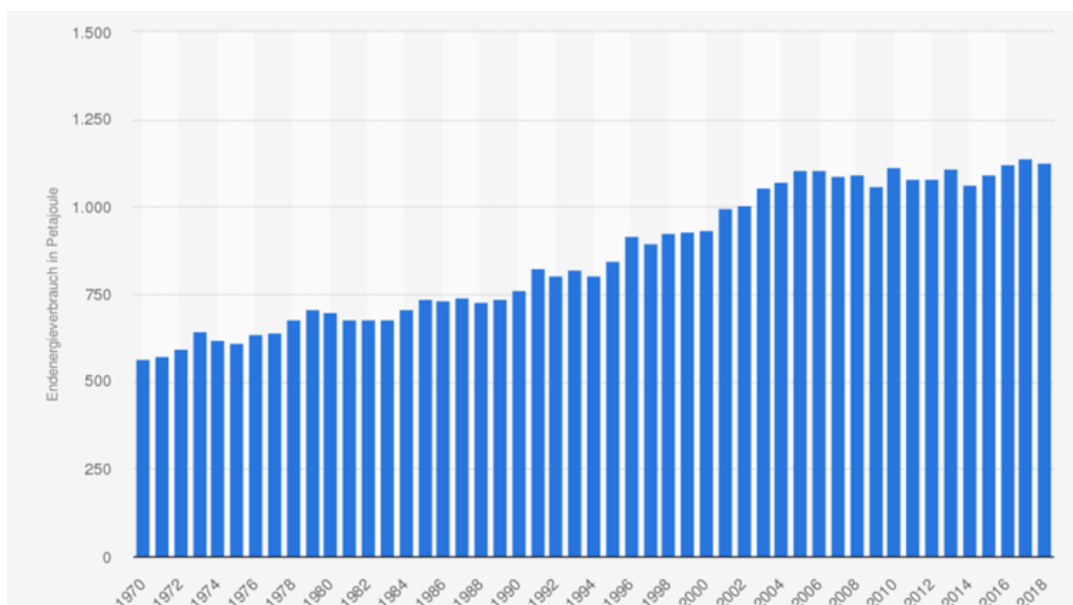


Figure 9: Final energy consumption of Austria from 1970 to 2018 (in PJ)

Energy efficiency has been an important concern of Austrian energy policy for decades - and successfully so, the trend towards decoupling economic growth and energy consumption is clearly discernible. While real GDP is rising continuously and steeply, the increase in GDP consumption is much flatter and relative energy consumption is declining. [5]

2.3.2. Energy intensity of industry

The production index (PI) is rising much faster than the energy consumption of industry, thus improving energy productivity.

With a final energy consumption of almost 30%, industry is a major energy consumption sector alongside space heating and transport. In particular, the energy-intensive industry (61% of final energy consumption in Austria) has a considerable influence on final energy consumption, as can be seen in Figure 10.

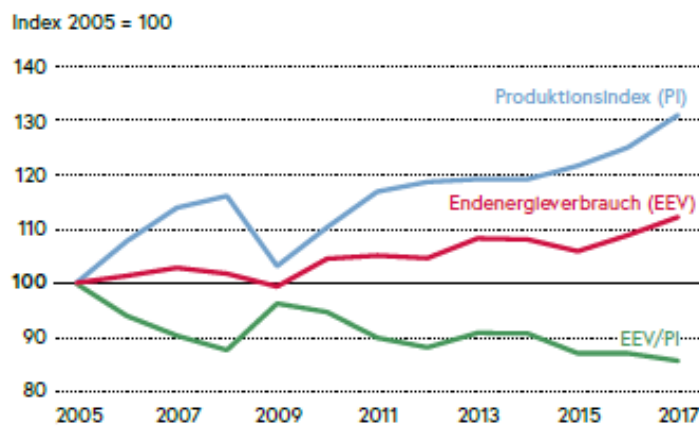
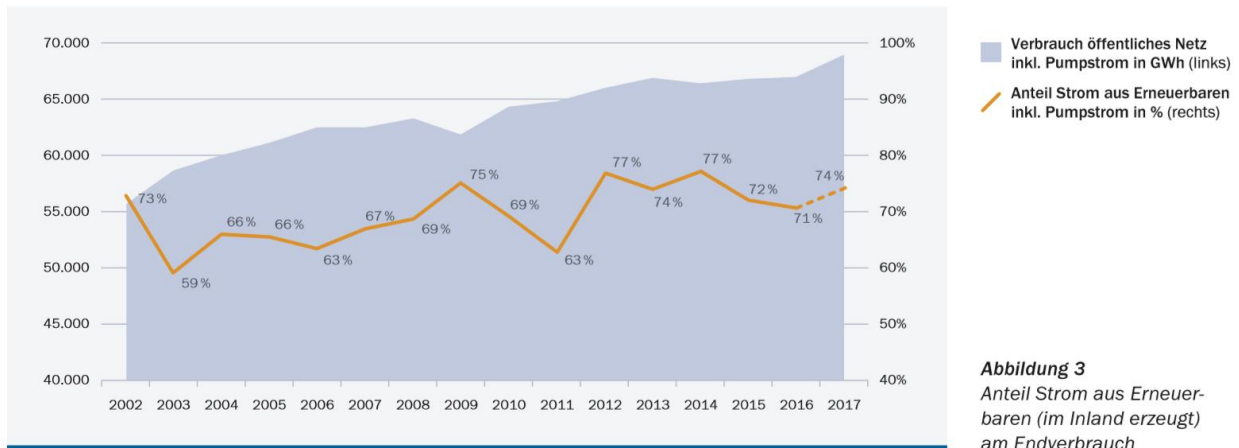


Figure 10: Energy intensity of industry (2005 to 2017)

The final energy consumption in industry is mainly influenced by the activity, intensity and structure of these, as well as the climatic conditions. The increase in energy consumption from 2014 to 2017 is due to the increase in economic output and the poorer climatic conditions during the observation period. [6]

2.3.3. Green electricity

According to initial evaluations, the share of electricity from renewables (domestic generation) in consumption in 2017 was around 74%. Due to electricity volumes from other power plants < 10 MW, which can only be allocated in detail at a later date, there is still a certain degree of uncertainty at the present time. For 2017, the share of total electricity from renewables is expected to be at about the same level as in 2013 has. Figure 11 shows the development of consumption in the public grid including pumped electricity and the share of electricity from renewable sources (subsidized green electricity and hydropower).



Quelle: E-Control

Figure 11: Share of electricity from renewable energies (generated domestically) in final consumption in GWh

The main reason for the high share of green electricity in Austria is hydropower, for which rivers and reservoirs are used. More than 270 larger run-of-river power plants, almost 500 smaller plants and more than 100 storage power plants generate just under two thirds of the domestic electricity in this country.

In addition, green electricity in Austria is produced from water (65%), thermal power plants (19%), wind (11%), photovoltaics (1%), geothermal energy (1%) and biogenic fuels(4%). These different generation methods account for a total share of more than 16 percent of the domestic electricity generation mix, shown in Figure 12, that's 72% of the final power consumption in Austria.[7]

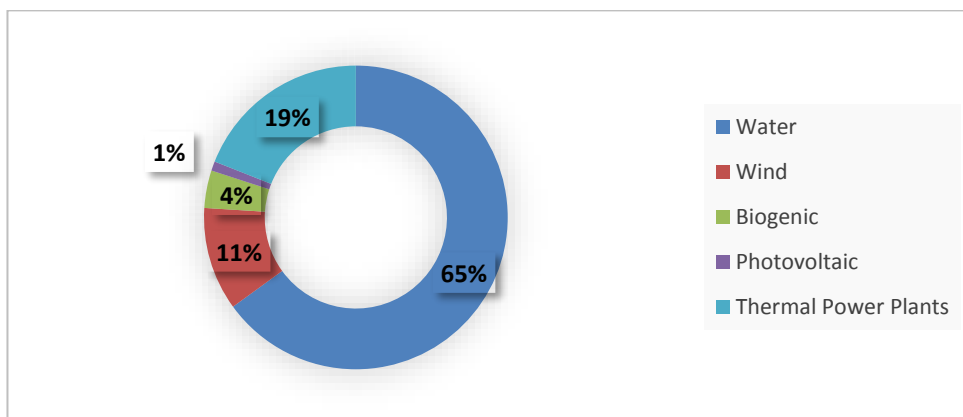


Figure 12: Green electricity mix in Austria (2018)

2.3.4. Electromobility in Austria

The number of electric cars in Austria has risen continuously in recent years. Although their share is increasing, it is still marginal at 0,42 percent. New registrations of electric cars is shown in Figure 13 in comparison from 2008 till 2019. The relative growth was 40% compared to 2018. [8]

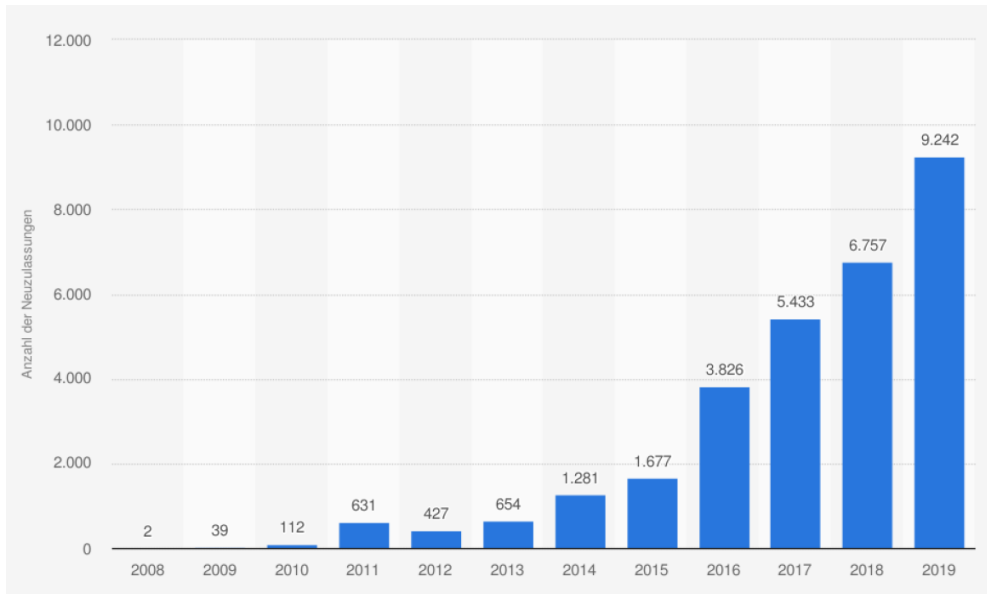


Figure 13: New registrations of electric cars from 2008- 2019

Mobility in comparison:

According to Statistics Austria, a total of 436,260 all motor vehicles were newly registered for traffic in 2019, **329,363 passenger cars** were registered. Compared to 2018, new registrations of petrol-driven passenger cars (share: 53.7%) and diesel passenger cars (share: 38.4%). The share of alternatively powered passenger cars - electric, natural gas, bivalent operation, combined operation (hybrid) and hydrogen (fuel cell) - remained comparatively low at 8.0%, but the relative growth was 56.8%. **2.8%** (that's 9,242) of new registrations were **electric cars**. An overview is seen in Figure 14. [9]

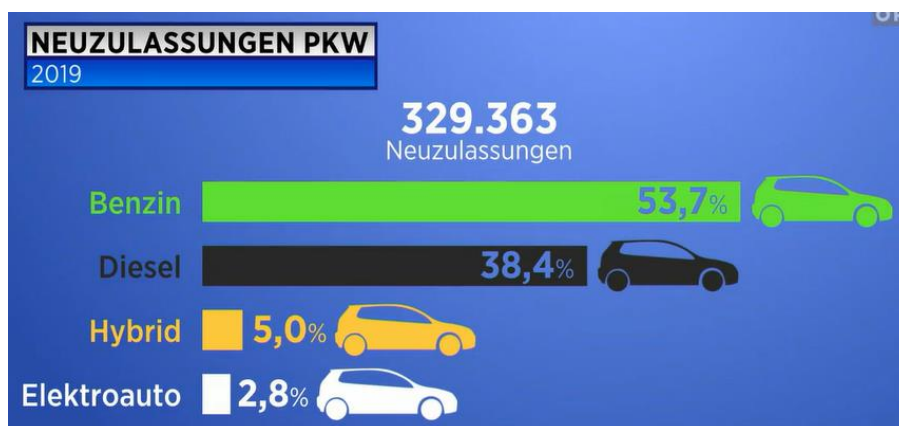


Figure 14: New registrations of cars in Austria (2019) total 329,363

2.4. Demand-side analysis: Regional Energy Plan and investment needs

In the following chapter the regional energy plan for Austria and the investment needs is outlined.

European framework for climate and energy policy up to 2030 and 2050

Back in 2009 and 2011, the European Council, in keeping with other industrialized countries, formulated a conditional long term climate objective for 2050 of an 80-95% reduction in greenhouse gas emissions. Based on that, the European Council set the following targets for 2030 in October 2014:

- A reduction in EU greenhouse gas emissions by at least 40% compared to 1990.
- An increase in the ratio of renewable energy to gross final energy consumption to at least 27% throughout the EU.
- An increase in energy efficiency of at least 27%² throughout the EU.
- Cross-border electricity interconnections for at least 15% of domestic generation capacity.
- Greater security of supply and storage capacity in the gas sector.

In order to start moving in the direction of the Paris Climate Agreement, the European Commission tabled proposals in November 2016 and 2017, including in the Clean Energy Package and, from 2017, in Clean Mobility Packages.

In keeping with those proposals, reform of the European legal acts in the internal electricity market, energy union governance, renewable energy, energy efficiency, buildings and mobility sectors is currently being negotiated. Negotiations on the Clean Energy Package and the Clean Mobility Packages at European level were still under way when this Strategy was prepared.

The European greenhouse gas emissions trajectory is essentially mapped by the European Emissions Trading System (**EU ETS**) for larger emitters in the energy and industry sectors and by the Effort Sharing Decision for sources outside the EU ETS.

The ongoing negotiations on the governance system³ should ensure that European climate and energy targets are achieved and that every Member State plays its part. In any event, the common European policy provides a solid basis, as well as a framework, for the negotiation of Austrian climate and energy policy. In that sense, this strategy, especially the targets set in Chapter 3, forms the basis for an Integrated National Energy and Climate Plan for Austria in keeping with the Governance Regulation.

Competitiveness and affordability

The implementation of a decarbonization pathway is a long-term process. A technologically open framework tailored to the pathway need to be put in place that is in keeping with European targets and takes account of competition. This applies to all sectors of the economy that impact on current and future jobs in Austria as a business location. Public resources must be used efficiently, effectively and in a targeted manner along the entire decarbonization pathway.

Successful implementation of climate targets must parallel international targets, in order to ensure a level playing field and maintain the competitiveness of the Austrian economy in general and its energy-intensive industry in particular and thus maintain or expand Austria's share of industry. At the same time, outlets for innovations and environmental and climate technologies from Austria to growing export markets must be increased.

Social affordability

One policy objective should be that all sections of the population can meet their basic energy and mobility requirements. Consumers should be able to manage this now and in future at a socially affordable cost. High energy costs put low-income households in particular at risk of poverty. It is therefore important to minimize energy poverty in tune with climate and energy targets. Economists, politicians and civil society can work together to find social solutions to help mitigate hardship cases. Maximum transparency in the form of easy and fast access to information and further training should be guaranteed in order to increase social acceptance.

Economic affordability

The objective is to ensure that Austrian businesses will still be able to obtain energy services at economically affordable prices. Successful transformation of the energy system depends on support for price incentives, energy efficiency and use of renewable energy sources. Competitive pricing mechanisms that take account of tax, duty and incentives should be used to minimize market distortions. Households, commerce and industry should be able to participate actively in the energy market and to react to price signals.

Level playing field for a strong industrial basis

Comprehensive carbon leakage protection provides an important short- and medium-term basis for the conversion to zero-emission processes by energy-intensive businesses and plants that are highly efficient compared to their international counterparts. The emissions trading system should effectively support full decarbonisation of our energy system by 2050.

However, missing or differing global carbon prices in industry may encourage relocation or put an end to investment in energy-intensive industries (“carbon leakage”). Therefore, in keeping with the Emissions Trading Directive, the full 100% of allowances should be allocated free of charge to the most efficient 10% of industrial plants at risk of carbon leakage between now and 2030.

Measures to support research, development and innovation

Positioning Austria as an “energy innovation country” in terms of research and development of next-generation technologies is fundamental to the success of Austria as a location for business and employment.

Where Austria is already a front runner in innovative climate protection and energy technologies, that position must be maintained and improved. Technology quantum leaps cannot be planned; however, the probability of their occurring must be increased by creating an innovation-friendly environment. Decarbonisation will be facilitated primarily through innovative technologies. Many are at the trial stage and their further development depends on target support in the form of pilot projects. Public and private efforts in this direction need to be increased significantly overall.

Fostering competitive energy markets

If the electricity supply is to be based on renewable energy sources by 2030, functioning, cross-border, liquid wholesale markets and common price zones (e.g. Germany/Austria) are needed in order to generate the necessary price signals. The required investments will need to be financed primarily via the market. Market-distorting incentives that conflict with the decarbonisation pathway must be minimized, and undistorted, competitive pricing mechanisms must be (re-)established.

Budgetary affordability

The public purse, businesses and private households are the main financing sources for climate- and energy-related measures. Sustainable public finances create the room for manoeuvre needed to develop strategic options to achieve climate and energy targets. In view of the long-term challenge of decarbonisation, the Federal Government is committed to the sustainable consolidation of public budgets and a permanent reduction in overall debt. That depends, among other things, on a careful assessment of the compatibility of the existing spending and revenue structure with climate- and energy-related targets. It is also important to minimize the risk to the public purse of taking no action or taking delayed action (cost of doing nothing), as that will counteract the objective of achieving a permanent reduction in overall debt. [10]

2.5. Supply-side analysis: transversal offer

Good and increasing equity base of Austrian SMEs

Analyses of almost 66,000 annual financial statements of domestic small and medium-sized enterprises (SMEs) from the balance sheet database of *KMU Forschung Austria* show that the companies are well equipped with equity capital. Equity capital strengthens companies' resistance to crises, as it can be used to cover losses in difficult economic times, for example. The higher the equity ratio, the more creditworthy a company is.

In the current 2016/17 reporting year, Austrian SMEs had an average equity ratio of just under 32%. This means that the minimum benchmark of 30 %, which is to be aimed at from a business perspective, was exceeded on average. However, a differentiated analysis according to size classes shows that micro-enterprises in particular were not (yet) able to reach the target value with an average ratio of just under 25%.

Overall, the equity capital base in Austria shows a wide range: 78% of SMEs were able to record positive equity capital. However, this was contrasted by the remaining 22% of the enterprises, which were thus over indebted (i.e. the equity capital was used up by losses and the balance sheet shows a negative equity capital).

Over time, the financing structure of domestic SMEs has improved: the average equity ratio has increased (by almost 4 percentage points between 2010/11 and 2016/17), while bank debt (as a measure of dependence on banks) has fallen by about the same amount. The trend improvement is equally evident in all company size classes. An overview of the development of the equity ratio and the bank indebtedness is shown in Figure 15. [11]

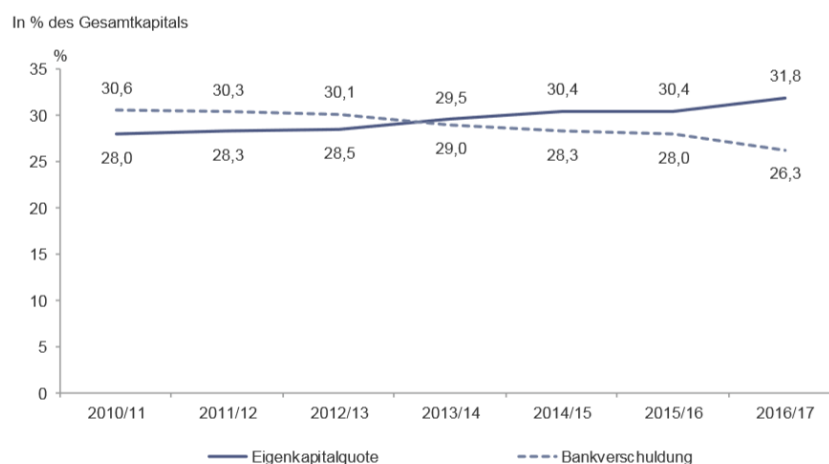


Figure 15: Development of the equity ratio and bank indebtedness of Austrian SMEs (July 2018), as percentage of total capital

2.6. Supply-side analysis: specific offer at national level

In this chapter the specific offer at national level is presented. The structure of the certificate market, trading activities and the most popular underlyings in Austria are shown.

Austrian certificate market

The Austrian certificates market showed strength in the difficult stock market year 2018 and was able to grow significantly in almost all key Figures. While the ATX fell in value by around 20% in the course of the year and interest rates remained close to zero, the open interest (total market volume) of the Austrian certificates market rose by 5,7% or EUR 724,9 million to EUR 13,5 billion. The trading volume even increased by 17,2% to 2,9 billion euros.

The structure of the certificate market shows the investment needs of Austrians

A glance at the development of the individual categories reveals the needs of Austrian investors: Over the course of the year, interest rate products fell by a substantial 7,1%, while certificates on equities, indices and commodities rose substantially by 14,1%. Investment products grew even more strongly, namely by 14,6%, while leverage products lost 20,2% in volume, with trading turnover naturally allowing better conclusions to be drawn. There was strong demand for express certificates, bonus certificates and guarantee certificates in 2018. Warranty certificates gained a great deal of popularity, especially in autumn.

The volume of EUR 3,4 billion reflects the predominant defensive investment strategy of the Austrians. The development of the total market/ open interest of Austrian certificates market is in Figure 16 shown.

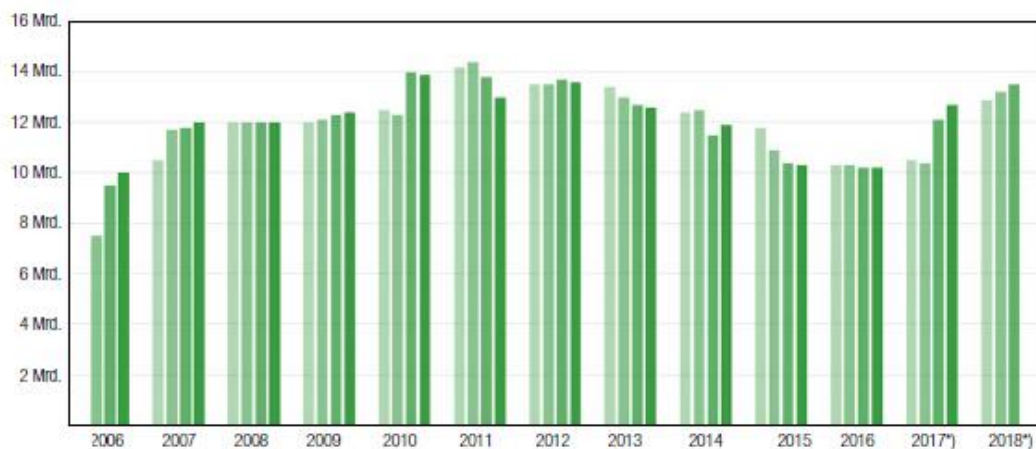


Figure 16: Development of total market volume / open interest of the Austrian certificates market including interest rate products in billions of euros (from the beginning in June 2006 until the respective reporting date of the quarter)

Intensive trading activity

An important indication of the maturity and liveliness of the Austrian certificates market is trading activity, which grew by 17,2% to EUR 2,9 billion, more than the volume. As in previous years, there were large differences between the individual trading months: The lowest trading volume was in September with 100,3 million euros, the strongest month was March with EUR 344,2 million euros.

Equities and indices are the most popular underlyings

In both investment and leveraged products, equities and indices are the most popular underlyings. These underly 63% of the investment products, followed by bonds and interest at 35%. Currencies and commodities account for only 2% of underlyings.

Leverage products relate 80% to equities and 19% to currencies and commodities. After all, 1,6 % of leverage products relate to funds and only 0,1% to bonds and interest rates. [12]

2.7. Analysis of the gap between demand and supply (Upper Austria)

The following chapters are based on the ex-ante-analysis of Upper Austrian high-tech fund for Upper Austria. The market failures of the supply side, the demand side and the suboptimal investment situations are analyzed.

2.7.1. Supply-side market failures

Estimate of the supply of risk capital financing

For a quantitative assessment of the supply of venture capital financing, we draw on data from the European private **Equity and Venture Capital Association** (EVCA). The data published every year are collected within the framework of the analysis tool "Private Equity Research Exchange Platform" (PEREP) and include data from national venture capitalist associations such as the *Austrian Private Equity and Venture Capital Organization* (AVCO) as well as the investments of other venture capital companies and publicly available resources. [13]

The analysis covers venture capital financing from the seed and start-up phase to the growth phase. The volume of financing is presented using market statistics, which cover the volume of venture capital invested in Austrian companies.

On average, the annual volume of venture capital financing for the period 2007 to 2013 in Austria in the venture and growth phase was around EUR 106 million. Of this amount, around EUR 64.5 million was allocated to the early phase and EUR 42 million to the growth phase.

In line with the share of Upper Austria's gross domestic product or population of about 17 percent, we expect an offer of venture capital financing of about EUR 18 million, of which about EUR 11 million is for the early phase and EUR 7 million for the growth phase. This share is in line with the experience of *Austria Wirtschaftsservice Ltd. (aws)*, according to which the investments by the Start-up Funds and the Middle Class- Funds for Upper Austria are also between 10 and 20 percent. [14]

2.7.2. Demand-side market failures

Estimate of (potential) demand

The realised demand for risk capital reflects the extent of successful investment negotiations and is identical to the investment offer. To estimate the additional potential demand for risk capital in Austria, the analysis results of existing studies on the Austrian risk capital market can be used.

The study by Friesenbichler and Url (2013) uses a panel econometric model to estimate the investment potential. The investment gap in Austria is calculated in an international comparison, taking into account relevant factors such as the financing and innovation system, entrepreneurship and its framework conditions. The result of the calculated investment gap for Austria amounts to 236 million euros annually. For Upper Austria, this would correspond to a proportionate volume of around EUR 40 million.

[15]

The analysis by Gassler and Sellner (2014), on the other hand, is based on an analysis of the demand potential based on the deal flow carried out by Jud et al (2013). In order to consider the relevant, i.e. risk-capital-capable demand, the deal flow after successful pre-due diligence is used, which is adjusted for fund decisions and follow-on investments. Taking into account 165 companies, which are weighted with the average deal sizes of the funds depending on the sector, the additional potential demand for venture capital for Austria amounts to approximately EUR 150 to 250 million per year. On the basis of the proportionate economic performance or the population of Upper Austria of 17 percent, the additional demand for venture capital for the federal province would be in the range of EUR 25.5 to 42.5 million.

The approach of Gassler and Sellner (2014) is in line with the methodology of the EIF, which proposes to multiply an estimate of the average financing volume by the number of requests in order to determine the additional financing needs. In addition, an estimate should be made as to whether these requests are eligible for funding. [16]

To estimate the average financing volume, the data of the EVCA can be used. According to the EVCA surveys, the average financing volume per company in the period between 2007 and 2013 was around EUR 1.24 million. In the early phase it averaged €900,000 and in the growth phase €2.4 to 3 million.

In order to estimate the volume of requests for risk capital, we refer to the analysis results for determining additional market potential from Jud et al (2013). As mentioned above, the number of annual deal flows in the pre-due diligence segment was used as a basis for this analysis. For this purpose, the number of companies that actually received venture capital according to the EVCA survey is deducted from the demand potential and the result is adjusted for follow-up investments. In line with the EIF's guidelines, only those companies that are actually eligible for financing should be considered. For this reason, the "pre-due diligence" phase was used as a delimitation in the analysis of market potential in the area of venture capital in Austria, as only companies with a corresponding market orientation, development potential and suitable organizational and management structures are considered here. In addition, the process of pre-due diligence can reduce information asymmetries as a typical market weakness and satisfy the information needs of the venture capitalist. The base year for the analysis is 2011, in which the number of early and growth phase companies eligible for risk capital that have not received any financing amounts to around 200.2 For Upper Austria, this would correspond (in line with the GDP or population share) to a number of approximately 34 companies that would be seeking additional risk capital. Thus, with an average deal size of EUR 1.24 million, the additional financing requirement for Upper Austria would be around EUR 42 million. [17]

As a conclusion, it can be stated that Upper Austria, compared to other federal provinces, has a financing gap due to a suboptimal investment situation in the range of between EUR 25 and 42 million per year, which is also due to weaknesses in the market environment. A financial instrument such as the planned Upper Austrian high-tech fund can therefore represent a suitable means of counteracting this financing gap on the risk capital market. We would like to point out that, due to the lack of complete information, it is not possible to precisely determine the financing gap. The analysis is based on estimates and assumes data that may change over time. However, the evaluation of the various studies and statistics clearly shows that there is a significant financing gap in the Austrian market in the area of risk capital that justifies public intervention. In this context, the EU Commission points out that the market failure in early-stage financing can be countered particularly well through cooperation between the public and private sectors, which is why the joint action of the Federal Province of Upper Austria together with the

regional banks seems particularly suitable for reducing the financing gap resulting from market weaknesses.

2.7.3. Sub-optimal investment situations

In order to analyze the market weaknesses and sub-optimal investment conditions on the Austrian risk capital market, a comparison is first made with the international risk capital market and, based on this, supply-side and demand-side factors are considered to explain the characteristics of the local risk capital market.

The Austrian venture capital market in international comparison

OECD data can be used for an international comparison of the characteristics of the Austrian risk capital market.

International comparison shows that the Austrian risk capital market is relatively underdeveloped. According to OECD surveys, Austria, together with other Southern and Eastern European countries, was in the bottom third of the comparison countries in 2012 and thus clearly behind the USA, the United Kingdom, but also Switzerland, the Netherlands and Germany, shown in Figure 17.

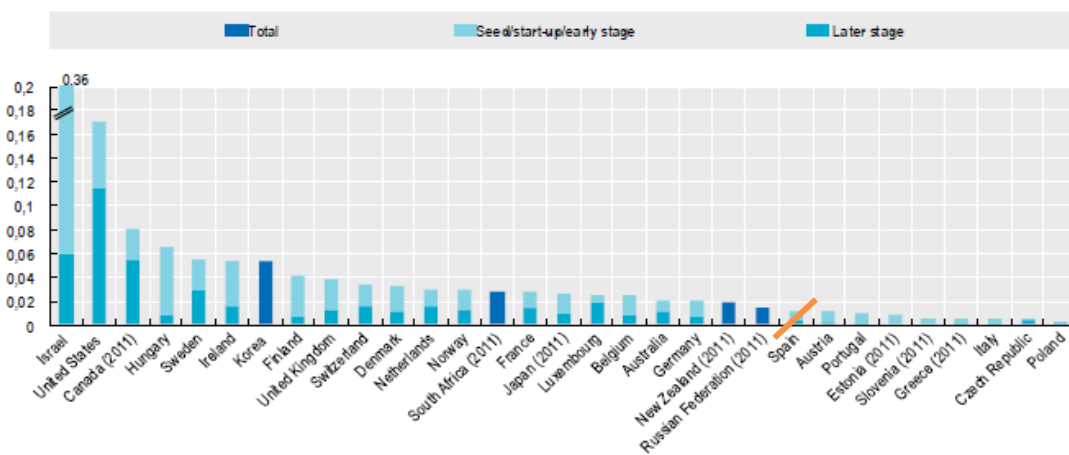


Figure 17: Venture capital investment as a percentage of GDP 2012

In addition, the effects of the financial and economic crisis are being clearly felt in all countries, particularly in the area of venture capital financing. For example, venture capital investments in 2012 averaged only 60 per cent of the 2007 level. Austria is particularly affected by this trend. Venture capital investments there were only 45 per cent of the 2007 level, shown in Figure 18.

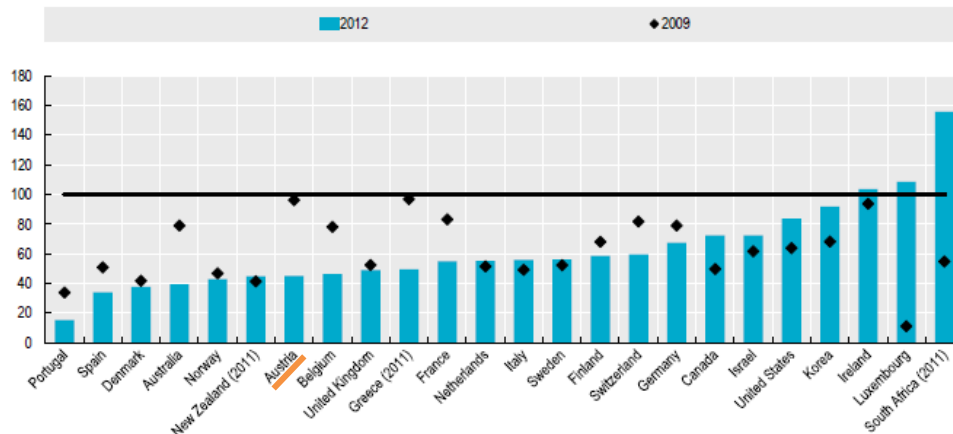


Figure 18: Trend in venture capital investment

The data show that the Austrian risk capital market is characterized by a clearly sub-optimal investment situation compared to other markets. [18]

3. Assessment of the added value of the financial instrument

In chapter 3 the added values of financial instruments are presented; in a qualitative and quantitative way.

3.1. Qualitative added value

In the area of financing young, highly innovative and growth-oriented companies in Upper Austria, there is a gap in the supply of venture capital. In recent years, the supply of private venture capital has declined sharply, particularly in the early and thus very risky phases of company development. The public sector at European, national and regional level, including Upper Austria, has countered this trend by increasing the supply of public venture capital.

The added value of ERDF co-financed venture capital funds can therefore consist in particular in providing additional capital for innovative Upper Austrian companies in the early and growth phase. The study on the risk capital market in Austria by Jud et al. (2013) underlines the role of venture capitalists, who, through their specialized know-how, perform an important selection function and offer added value to companies through information, consulting and brokerage services, thus counteracting central causes of the lack of capital attributable to market weaknesses.

The financial instrument can also fulfil an important function from a macroeconomic perspective. For example, the fund can improve the economic framework conditions for technology-oriented and high-growth companies and thus contribute to the development of innovative structures in the federal province of Upper Austria, which is characterized more by traditional industries. The settlement of innovative companies that decide to locate in Upper Austria on the basis of the financing offer also plays a role in this connection.

The revolving character of the fund, the effect of which is shown in the following quantitative analysis, also represents a significant added value of the planned financial instrument compared with an alternative possible grant.

3.2. Quantitative added value

In the following, the quantitative added value resulting from the use of grants and risk capital will be examined using two examples.

Example 1: grant

Case specific assumptions

-Total financing requirements	1,5 Mio. €
-Fund intensity	50%
-Cofinancing for higher developed regions	50%
Amount of subsidy (EFRE)	$1,5 \text{ Mio €} * 50\% * 50\% = 375,000\text{€}$
Amount of subsidy (national/ regional)	$1,5 \text{ Mio €} * 50\% * 50\% = 375,000\text{€}$
Leverage = Total investment volume / EFRE subsidy	$1,500,000 \text{ €} / 375,000\text{€}$
	= 4

Through the use of 1 euro of ERDF funding, 3 euro of additional funding is mobilised.

Example 2: Participation

Case specific assumptions

-Total financing requirements	1,500,000 €
-EFRE resources	375,000 €
-Regional participation	375,000€
-Mobilisation another resources	375,000 €
-Scheduled exit after 7 years	
-Discount rate of 4% according to Art. 19 Delegated Regulation No. 480/ 2014	
-Investment income covers the Fund's defaults and management costs, the net income from the investment is zero.	

a) Leverage effect in present:

When determining the leverage effect of the present, it must be taken into account that the participation is initially paid out in full. As with the grant of 4.

Leverage effect in the present = total investment volume / ERDF funds
 $= 1,500,000 \text{ €} / 375,000 \text{ €}$
 = 4

(b) Leverage effect in future

In addition, it must be taken into account that reflows after the exit can be used to grant further investments in the future ("leverage effect in the future"). Assuming that the investment income covers the costs of fund management and defaults (net income of zero), the exit takes place at the nominal value of the investment and taking into account a discount rate of 4%, further investments with a total volume of EUR 1,186,9641 can be granted ceteris paribus in the future. The revolving nature of the fund means that further investments of 3.2 times the original investment amount can be made in the future.

The total quantitative added value amounts to 16.7 (4 times 4.22).

If a 1-year default probability of three percent is taken into account, this results in a leverage in the future of 1.6 and a quantitative added value of 10.5

Comparison:

The example cases are each based on a total investment volume of EUR 1.5 million. Assuming a maximum funding intensity of 50 percent and a co-financing rate for more developed regions of 50 percent of the investment costs, the potential share of ERDF funding is EUR 375,000. The leverage effect of the ERDF funds compared to the total investment volume thus results in a value of 4.

ERDF funding of EUR 375,000 is available for the investments. The Federal Province of Upper Austria and the banks are each participating to the same extent. The remaining financing

requirement will be covered by other sources, e.g. by equity capital from private investment companies and/or by commitments from business angels. Assuming that the participation fees (including exit profits generated) cover the costs of fund management and defaults and taking into account the current EU discount rate of four percent, the quantitative added value is around four times higher than in the case of "lost" subsidies. Even under more conservative assumptions - 1-year default probability of three percent, EU discount rate of four percent - the quantitative added value of the investment is still around 2.5 times higher than in the case of grant funding.

The example calculation shows that the granting of a participation is accompanied by a higher quantitative added value compared to the granting of a grant. This is due to the fact that the participation is basically designed to be repayable, so that after the exit, the return flow of funds from the ERDF share can be used for further participation commitments.

However, the higher quantitative added value of participation does not necessarily mean that participation is the preferred funding instrument in every case. As a measure of funding efficiency, it can nevertheless be used as a criterion for selecting the funding instrument if the grant and the participation have the same funding effectiveness. [19]

4. Consistency with other forms of public intervention

In the following, it will be assessed to what extent the *Upper Austrian High-Tech Fund* complements the existing funding offers in a meaningful and non-overlapping manner and thus does not lead to the displacement of already existing offers. For this purpose, the coherence of the financial instrument under consideration with other funding instruments or their interaction with other funding instruments will be analyzed. This should ensure that synergies are used and conflicts of objectives are avoided. This assessment step should in particular help to avoid the emergence of inefficient duplicate structures. For the coherence analysis, a screening of the main funding instruments at the regional, national and European level, which are available to innovative technology companies in early company phases in Upper Austria, was carried out. Overview of the relevant programs seen in Figure 19.

	Seed	Start-up	Growth	Later phases
regional level	Upper Austrian Hightech fonds			
	Start-up fonds & Standard participation KGG/ UBG			
	Upper Austrian Research fonds			
national level	aws start-up fonds		aws middle-class fonds	
	aws Venture Capital Initiative			
	aws Programmes for young entrepreneurs		aws erp-SME-programme	
	aws PreeSeed	aws Seedfinancing	aws ers-technology programme	
	basic programme research funding company			
	aws Guarantee programme			
EU level	european Angels fund/ cofiancing with aws			
	EIF/ ERP umbrellafund			
	COSME		COSME	
	Horizon 2020			

Risk capital	loan programme
subsidy programme	guarantee programme

Figure 19: Coherence with other types of public intervention

A significant distinction between the programs is made by the type of financing. Risk capital is an equity instrument which serves to finance young, innovative companies with high "failure risks" but also high growth opportunities. At the regional level, further quasi-equity funding instruments such as "classical" silent partnerships are provided by *Kreditgarantiegesellschaft m.b.H.* or *Upper Austrian Unternehmensbeteiligungsgesellschaft m.b.H. (KGG/UBG)*. A clear differentiation from the standard participation of KGG/UBG by concentrating the Upper Austrian high-tech fund on open participations or atypical silent participations is recommended. At the national level, the instruments of the *aws* in particular are available. A comparable venture capital instrument is the Start-up fund, which was launched in 2013. The Start-up fund is aimed at small companies that have been active on the market for a maximum of six years. With dormant and open participations, it participates, among other things, in the development of innovative products or services with a volume of EUR 100,000 up to a maximum of EUR 3 million for a term of ten years. Under these aspects, the *Upper Austrian Hightech Fonds* represents a similar offer to the *aws* Start-up fund. However, according to expert assessment, there are no conflicts of objectives in this case; if it is structured in line with the market, *Upper Austrian HightechFonds* is rather positively regarded as a further capital offer on the market. In individual cases, both funds can also act as investors simultaneously, which has not been the case so far. Another equity or quasi-equity instrument is the *aws* middle-class funds, which focuses primarily on the growth phase with even larger volumes of up to EUR 5 million. In addition, there is a fund of funds, the Venture Capital Initiative, which is involved in a total of seven funds and through these invests in companies from the seed to the growth phase. At European level, the ERP/EIF Fund of Funds also participates in VC funds with an investment focus on technology companies in the early and growth phases. In addition, the Business Angels Fund, in which *aws* has a stake, contributes to improving the capitalization of high-growth SMEs from seed to growth phase. Paripassu investments are made through co-financing agreements with business angels. Overall, the risk capital programs are not expected to crowd out potential competitors because the supply of risk capital, especially for early development phases, is per se considered too low. Other equity instruments, in particular R&D grants, can - for a limited period of time - also assume the function of basic financing for the companies concerned, but are mainly used for project financing. Here, there could be possible overlaps in the area of 'one-product companies', i.e. start-ups that want to establish themselves through a specific R&D project. Within the framework of R&D funding, companies have various programs at their disposal, ranging from regional (Upper Austrian research funding) to national (including PreeSeed and Seed Financing and basic programs of the Research Promotion Agency) to European level with Horizon 2020 or COSME2.

Guarantee programs, which partially exempt investment companies from default risks, are suitable for increasing the willingness of investment companies to provide risk capital to companies. For example, the possibility of combining with the *aws* instrument "double equity" in seed and start-up financing and other equity financing instruments makes it possible to mobilize additional funds.

Other support instruments such as "classical" loans are generally not suitable for financing high-risk investments due to their debt character. Like the *aws* erp SME programme or the *aws* erp technology programme, they are typically used in later phases, but can also help to leverage risk capital.

The analysis shows a broad spectrum of available participation, grant, guarantee and loan instruments for innovative Upper Austrian companies. The instruments are predominantly suitable to cover the existing financing requirements of innovative companies in the early and

growth phases in a complementary manner to the contributions of the Upper Austrian High-Tech Fund. In our opinion, they are not in direct competition with the fund to be implemented. However, the existing funding instruments can contribute to the overall financing of the companies in addition to the commitments of an Upper Austrian high-tech fund. In summary, it can be stated that the Upper Austrian High-Tech Fund can meaningfully supplement the existing range of support instruments for young and innovative technology companies in Upper Austria, contribute to a reduction of the identified capital gap and ensure regionally anchored hands-on management.

It seems important to note that an ideal-typical freedom from overlap is difficult to achieve in reality. Therefore, it is important to minimize the overlaps and to avoid (i) unintended cumulative effects and (ii) multiple processing of the operations and related costs through effective control. We recommend deriving from the compilation of the funding programs operating in the relevant sub-market where cooperation with other funding institutions, in particular the aws, can be intensified and coordination improved in order to further limit duplication. [20]

5. Estimate of additional public and private resources that the Financial Instrument has the possibility to collect

In chapter 5 the Financial Instruments in public and private resources are shown. There is an evaluation of the use of structural and strategic funds. Layered funds and private resources for Financial Instruments and lending crowdfunding are assessed.

5.1. Estimate of additional public and private funding

Additional public and private funds can be generated at different levels of a financial instrument, seen in Figure 20.

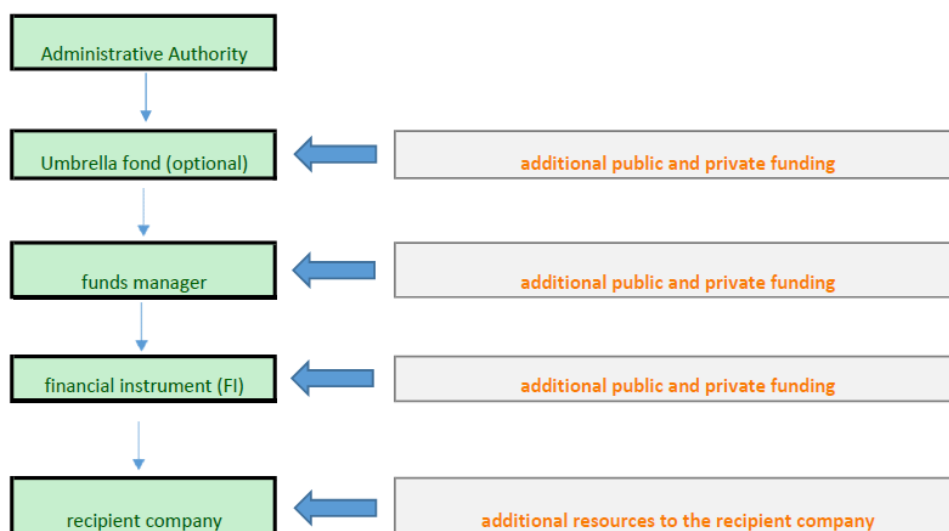


Figure 20: Levels to generate additional private and public funding

Additional resources are all resources outside the ESI funds. Conceivable here are funds from public financial institutions, fund managers or (institutional) investors. The funds contributed by the beneficiaries at project level represent another significant source of additional funds,

although they can only be used to determine the leverage effect in cases where they flow to the company from outside.

The analysis is intended to assess to what extent and, if applicable, through which incentive elements additional funds can be mobilized through the use of ERDF funding. The fundamental aim is to achieve the highest possible leverage effect (financial resources to final recipients / EU contribution). Against this background, it should also be examined to what extent it is realistic and expedient to increase the willingness of co-investors to invest by granting priority compensation or risk shielding.

Asymmetrical profit and loss distribution

We will start with the question of priority compensation. An asymmetrical distribution of profits or losses can create additional incentives for investors, especially in cases where an investment under economically equal conditions (*pari passu*) is unattractive from the perspective of a potential investor, so that a mobilization of additional investor capital is not to be expected. The second major case group aims, given the willingness of private investors, to further increase their share through risk shielding or more advantageous remuneration.

Since in the present case a *pari passu* participation of private investors is possible, the first group of cases is not applicable. In the second group of cases, a higher leverage (and thus more triggered investments in the first investment cycle) must be weighed against a stronger preservation of or even increase in value of the revolving fund (and thus more investments in future investment cycles). The weighing has been done in the intended FI with a *pari-passu* profit and loss participation in favor of the value retention of the fund.

Additional resources at fund manager level

The fund management of the predecessor fund (*Upper Austrian high-tech fund*) is carried out by KGG/UBG in cooperation with the regional incubator tech2b. The fund management acts as a pure intermediary, which does not provide any additional funds. We therefore assume that a continuation of this structure or a comparable solution is also intended for the planned financial instrument.

Additional resources at the level of the financial instrument

Raising additional funds at this level is the central approach of the proposed financial instrument. In the case of the predecessor fund, the third-party participation in the fund was 50 percent. For the successor fund, 33 percent is planned. However, this too represents a significant share in the sense of the European Commission's risk capital guidelines. As such an investment at fund level in the sense of a participation in a new investment portfolio is rather rare, especially in the case of smaller and regionally oriented funds, Upper Austria has achieved an important goal for financial instruments with the participation of a group of regional banks, also in comparison to other regions. The combination of the two successive funds results in a revolving overall fund of a size that can serve the segment of young, technology-oriented and rapidly growing companies in Upper Austria on a long-term basis.

Additional resources of the final beneficiary

In quantitative terms, additional funds to the final beneficiary companies should also be an important source of additional financing contributions for the *Upper Austrian High-Tech Fund*.

The risk financing of innovative technology companies is usually carried out with the participation of several investors. The willingness of private investors to invest is generally greater in later phases of the company (growth phase), because the prospects of success of the company can be better assessed here and the risks of equity financing tend to decrease. This means that the quantitative contributions of co-investors are lower in the early phase than in the growth phase.

- According to information provided, further funds amounting to 33 to 50 percent of the respective project volume could be raised within the framework of the existing Upper Austrian High-Tech Fund. The possibility of combining with the AWS instrument "double equity" for seed and start-up financing and other equity financing instruments could even mobilize further funds in the same amount of the project volume.

A direct comparison of the leverage effect with the results achieved by investment funds in other federal states is only of limited use, because the possibility of attracting co-investors depends, for example, on regional aspects, but especially on the concrete development phase and the sector affiliation of the portfolio companies. Therefore, the following results on the leverage effects of the ERDF-financed Bavarian and Berlin investment funds are for information purposes only.

- Within the framework of the Bavarian ERDF co-financed venture capital funds (S-Refit ERDF Fund, BayBG Fund, Cluster Fund ERDF), which cover both the early and growth phases, the investments of the three funds were supplemented by investments from other investors at a ratio of 1: 2.33 (status: 2011).
- The Berlin ERDF co-financed VC funds have a significantly higher leverage. The ratio of fund investments to investments by other investors was 1:8 for "VC Fonds Technologie" and 1:3 for "VC Fonds Kreativwirtschaft" at the end of 2012. The high leverage is due in particular to the extensive participation of private co-investors in follow-up financing rounds, but should also reflect Berlin's special attractiveness for regional, national and international investors.

For the future *Upper Austrian high-tech fund* we consider a participation of additional investors at the current level to be realistic.

Estimation of the leverage effect

As the analysis of added value has shown, support in the form of participation is expected to have a higher quantitative added value compared to grant programs. The added value results primarily from the revolving character of the financial instruments, so that fund reflows can be used to grant further loans and equity investments. However, the revolving component is not to be included in the determination of leverage pursuant to Article 37 of the Supervision Ordinance.

The expected leverage for the Upper Austrian high-tech fund is thus in a range of 1:4 with further funds of 33 percent and 1:6 in the mobilization of further funds when using the combination option with "double equity". The leverage values are at a high level compared to the aforementioned German federal states of Bavaria and Berlin. [20]

5.2. Evaluation of the coordinated use of structural and strategic funds

In case of combination of support from ESI Funds delivered through a financial instrument and EFSI (e.g. in an investment platform) separate records have to be maintained between the support from an ESI Funds Programme and from EFSI. The ESI Funds financial instrument shall be part of an operation with eligible expenditure distinct from the EFSI support.

Thus, as indicated above, EFSI support to the project cannot count as national co-financing of an ESI Funds Programme and consequently cannot be declared as eligible expenditure. In such a case national co-financing of an ESI Funds Programme could still be provided through another EIB/EIF financial product, either through a Structural Programme Loan or through intervention at project level.

It is possible to consider that any additional resources leveraged and triggered by the combined ESI Funds and EFSI interventions can be treated as national co-financing for the ESI Funds Programme: for example, an ESI Funds financial instrument receives a parallel investment from EFSI and both interventions trigger additional co-investments by other investors (public and private). If such additional co-investments are neither directly nor indirectly supported by the EU budget but are directly linked to the ESI Funds intervention, they can be treated as national co-financing for the ESI Funds Programme provided that these resources are paid out to final recipients in line with the applicable rules (CPR, respective ESI Fund Programme, national eligibility rules and funding agreement). For the EAFRD, the co-financing for the Programme only takes into account public resources made available at the level of the managing authority.

The ESI Funds can be used to support the risk-bearing capacity of an EFSI Investment Platform in the form of a "layered fund", and leverage other sources of finance, most notably private investors. [21]

5.3. Layered Fund: combination of ESIF Funds and EFSI in an Investment Platform

ESI Funds Program and EFSI may also be combined at a higher level than individual projects, such as through a financial instrument and/or an investment platform. Such financial instruments and investment platforms could be set up at national, regional or supra-regional level. The use of ESI Funds Program resources would have to be in line with the ESI Funds regulatory

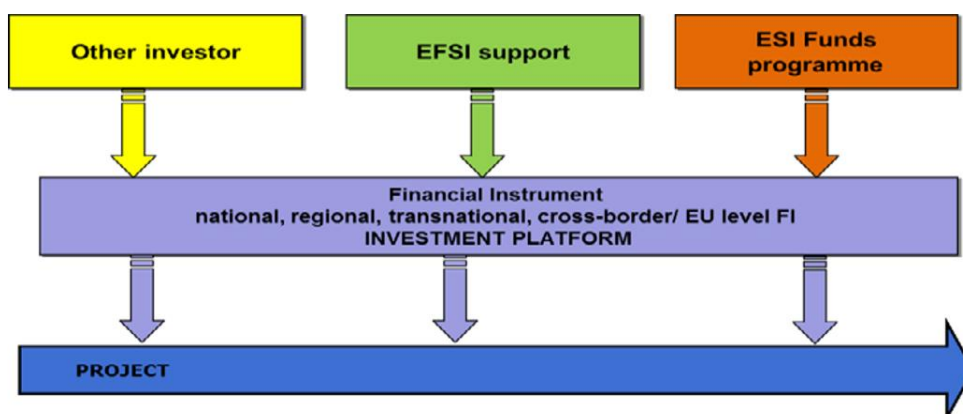


Figure 21: ESI Funds and EFSI combination at financial instrument

In general, the possible modalities could be as follows:

1. The managing authority could set up a new investment platform (considered as a financial instrument under CPR) in which EFSI and other investors would invest their resources, shown in Figure 21, including in the form of a layered fund;
2. The managing authority could make an ESI Funds Program contribution into an existing investment platform (considered as a financial instrument under CPR) set up with EFSI resources at national, regional, transnational or cross-border level (This may also apply to NPBs³). The investment platform would then invest EFSI and distinct ESI Funds Program contributions in final recipients (other investors may participate) – seen in Figure 21;
3. The managing authority could set up a financial instrument (with or without a Fund of Funds) in which the investment platform set up with EFSI support could participate as an investor (at the level of Fund of Funds or financial intermediary) and other investors may also participate, seen in Figure 22;
4. The managing authority could set up a financial instrument with ESI Funds Program contributions (other investors may participate). The investment platform set up with EFSI support would intervene directly at project level on a deal by deal basis shown in Figure 22.

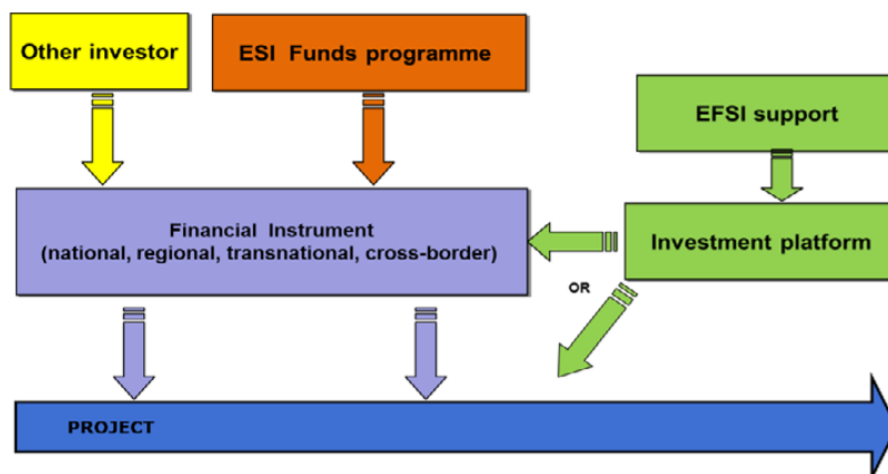


Figure 22: ESI Funds and EFSI support combination at financial instrument respectively investment platform level

The layered fund could be revolving for a given timeframe. The resources (both capital and returns) paid back to the layered fund and attributable to ESI Funds (after remuneration and/or repayment of financiers intervening in less risky tranches or with higher seniority) should be reused according to CPR art:

- For further investments through the same instrument or other instruments in accordance with the specific objectives under a priority
- Where applicable, to provide "preferential remuneration" (in the form of asymmetric reward sharing within the same risk class/layer) to private investors, or public investors operating under the market economy investor principle. For the avoidance of doubt, since the EIB, when supported by the EU guarantee under EFSI, intervenes in a separate risk class, it does not benefit from such preferential remuneration attributable to ESI Funds.
- Where applicable, reimbursement of management costs incurred and payment of management fees of the financial instrument.

³ NPB's- National Promotional Banks

The layered fund could provide debt and/or equity type of financing to the portfolio of targeted projects. The targeted projects financed by the layered fund would typically be further co-financed by private sector entities at senior level (debt) or pari passu (equity).

The combined use of ESI Funds and EFSI can be sought in cases where there is a market failure in risk-absorption capacity and where EIB/EFSI risk-pricing would not make it sufficiently attractive to finance projects mobilising other private or public (eg NPBs) sources of funds. The combined use of ESI Funds and EFSI must be structured in an efficient and synergetic way. Private sector capital mobilised in the layered structure, i.e. by private investors in one of the risk tranches of the layered fund, must be clearly specified at the stage when ESI Funds and EFSI are committed to the fund. Private co-investment at project level can be estimated, and would be contracted as and when individual project investments are made by the fund.

If ESI Funds are invested pari passu with private investors within the same risk class of the “layered fund” or at project level and the aggregated private investment is of real economic significance (generally 30%), this normally indicates that ESI Funds operate in line with market conditions and does not constitute State Aid.

If, however, State Aid is involved in ESI Funds, it could still be compatible, provided it is inter alia limited to the minimum necessary (i. e. proportionate) in order to attract the required size of private investment. Financial transactions which are not invested both on own resources and at own risks cannot be considered as private in nature for the purpose of State Aid policy.

If the layered fund is newly created and uses ESI Funds, it should be subject to the ex-ante assessment for ESI Funds financial instruments prescribed under the CPR. The approval of the use of ESI Funds is the responsibility of the Managing Authority. The approval of the use of the EU Guarantee under EFSI is the responsibility of the EFSI Investment Committee, following EIB due diligence, under the Infrastructure and Innovation window. The approval of individual projects is the responsibility of the layered fund governance (typically the Fund manager or the Investment Committee appointed by the investors). The scheme of layered funds is shown in Figure 23. [21]

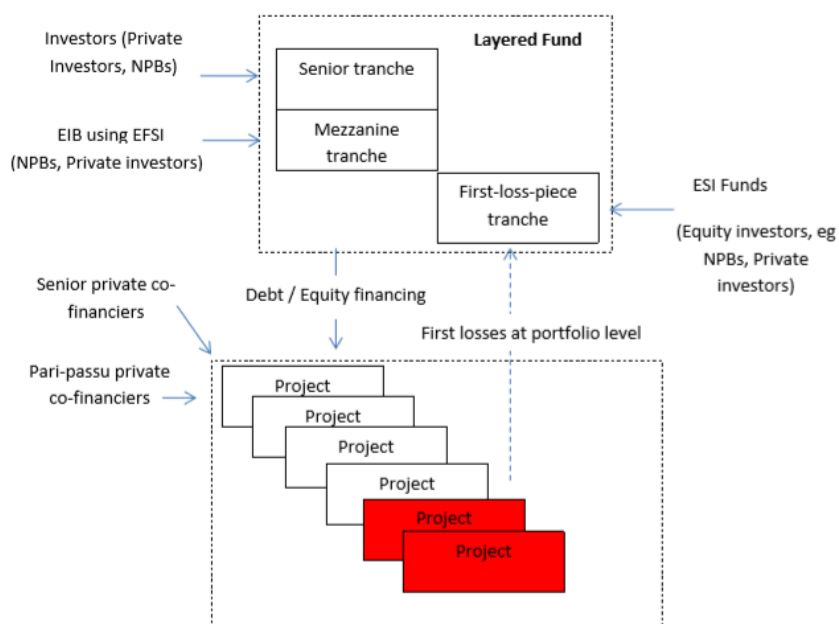


Figure 23: Scheme of layered funds in combination of EFSI and ESI funds

5.4. Private resources that the Financial Instrument has the possibility to collect: assessment of the lending crowdfunding

Subsequently a short summary of possibilities of Crowdfunding in Burgenland respectively Austria was written:

Crowdfunding Südburgenland: Slogan: Get involved in your region

Südburgenland plus, the association for promoting the quality of life in the south region of Burgenland, has launched September 2019 an alternative financing initiative: CROWDFUNDING Südburgenland.

Basically, it is about small and medium sized companies, organizations, farmers, associations etc. being able to present their ideas in order to inspire donors to participate in the implementation with different amounts of money. On the one hand, possible providers / crowdfunders are informed, advised and accompanied in the planning of a crowdfunding campaign until implementation. On the other hand, citizens are made aware of this topic as potential donors and are given comprehensive information via the media.

The most important points:

- Only licensed platforms may collect crowdfunding funds
- Maximum investment of € 5,000 per year and project by one person
- Information sheet for crowd investors from a project sum of € 100,000

Crowdfunding Models:

Either the crowd investor receives an annually agreed return on his deposit (usually spread over 5 years) of e.g. 5% INTEREST or you get a special Product, where you can invest in the production, means in agricultural production or renewable energy production.

Further Information you will get at <https://www.crowdfunding-suedburgenland.at/>

One other example is **“Solar power plant Burgenland”**, where crowdfunding in local dimensions is made through citizen participation. In several small villages photovoltaic systems are installed mainly at roofs of the citizens and all the other citizens are able to invest in the photovoltaic systems. Every year they get an interest rate of approximately 2,5 % p.a. The **“Bluepower – Small Wind Power”** is a company, who get money for investment and Product-development in small Wind Power systems over crowdfunding. But also into big Wind Power Plants citizens of Burgenland are offered to invest (**Energie Burgenland, IG Windkraft**).

2. Greenrocket Österreich

With a focus on sustainable and profitable startups and companies, GREEN ROCKET is the first crowdfunding platform that specializes in future topics such as energy, the environment, mobility and health. As a result, GREEN ROCKET - since it started in October 2013 - has developed with several thousand investors into one of the largest crowdfunding platforms in Austria and is now the market leader in the field of "crowd investing for sustainable companies". As the first crowdfunding platform, GREEN ROCKET has received the e-commerce quality label EURO label for transparency and fairness in the investment process.

Everyone has the opportunity to simply invest online in selected companies (equity-based crowdfunding or "crowdinvesting" or lending-based crowdfunding) and to benefit from their growth. The variety of investment opportunities extends from startups and first-stage companies to financing for established companies. As an investor, you are a venture capital investor and

manage your own portfolio of attractive, promising investments. It is possible to participate in a personally selected company for as little as EUR 250,--.
Further Information is available at <https://www.greenrocket.com/>

6. Evaluation of lessons drawn from the use of financial instruments

With the Upper Austrian High-Tech Fund launched in 2011, Upper Austria already has experience with the implementation of an ERDF co-financed financial instrument. This experience forms an important basis for the conception and content orientation of the planned fund and is therefore analysed in more detail below.

Further experience with comparable programs in Austria can only be found in Burgenland, which is explained in this chapter first.

Venture capital fund of the Province of Burgenland

BRM (*Burgenländische Risikokapital Management*) AG supports small and medium-sized enterprises in Burgenland with equity investments in realizing their entrepreneurial opportunities, e.g. in phases of growth, acquisitions and company succession or also in restructuring processes. With ATHENA and BRB, BRM is involved up to a volume of EUR 2.5 million and EUR 1.5 million, above all, in high-growth, technology-oriented companies. The BRM is focusing a long-term and trusting partnership, but which also has the necessary flexibility to respond to individual challenges with tailor-made solutions in order to sustainably increase the profitability of your company. [22]

BRM is focusing at 2 funds:

- The ATHENA funds which is tailored at running small and medium sized enterprises
- The BRB funds is focusing at SME which are in the growth phase.

The BRM is offering the following types of participation:

- Equity,
- mezzanine capital and
- silent participation.

As mentioned the funds are mainly focusing in high growth and technology oriented companies and by analyzing their investments only some companies dealing with energy efficiency (Lumitech) or sustainability (SOM Soja Ölmühle GmbH) could be dedected.

Upper Austrian high-tech fund

The *Upper Austrian high-tech fund* is managed by *Upper Austrian high-tech Ltd.* [23] The KGG/UBG acts as intermediary. The fund was launched with a volume of around EUR 11 million in 2011 to provide technology-oriented SMEs with equity capital focusing on the seed and start-up phase, but also for the growth phase. The regional banks hold a 50 percent stake in the fund. The Federal Province of Upper Austria is participating in the same amount, with half of the public capital coming from ERDF funds. Applications for participation could be submitted until 30 June 2014.

The fund's procedural provisions stipulate that at least 70 per cent of its fund capital invested in target SMEs must be provided in the form of equity or quasi-equity. An investment can take the form of a typical (equity capital terms, without net asset value share) or atypical silent partnership (equity capital with net asset value share). In addition, the Upper Austrian High-Tech Fund can take an open participation in the nominal capital, share capital or limited partnership capital or grant partial or subordinated loans. The target SMEs are small or medium-sized, young, innovative enterprises according to the EU definition of SMEs. In addition to equity capital of EUR 250,000 up to EUR 1.5 million, consulting services and network structures are also offered to the supported companies, primarily by tech2b, a service provider closely linked to the fund. The fund focuses its support on the high technology sector and is aimed at companies in the information and communication technologies (ICT), life sciences, mechatronics and process automation, energy (energy efficiency, energy management and renewable energies), materials / lightweight construction and logistics sectors and corporate networks. The headquarters of the target companies or a permanent establishment must be located in Upper Austria. Furthermore, the company must be a member of the Upper Austrian Chamber of Commerce.

Between mid-2011 and the end of 2014, a total of seven portfolio companies were financed and closely monitored in their development. The committed investment volume amounts to almost seven million euros (as of December 2014). The average committed investment volume (deal size) thus reaches around EUR 1 million.

With three investments, the *Upper Austrian HightechFonds* was most heavily involved in the ICT sector. Furthermore, the fund invested in two companies from the life science sector. The fund made one investment each in the energy and mechatronics sectors.

Looking at the exposures according to their respective financing volume, the picture is largely identical. At EUR 2.95 million or 42 percent, the ICT segment accounted for the majority of the total fund investments of EUR 6.95 million. A share of 29 percent or EUR 2 million was invested in the life science sector. Mechatronics and process automation was supported with 1.5 million euros (22 percent of the fund volume). At 0.5 million euros or seven percent, the lowest amount was invested in the energy sector. To date, no investments have been made in the target sectors of lightweight construction/innovative materials and logistics, which also belong to the strength fields of the "Innovative Upper Austria 2010" programme.

A total of 99 participation requests were subjected to a preliminary examination. Here, too, the ICT sector accounted for the lion's share (40 inquiries), followed by 26 inquiries from the mechatronics and process automation sector. The life sciences sector accounted for 23 applications in the preliminary examination phase. The sectors of energy (5 inquiries), lightweight construction/innovative materials (4 inquiries) and logistics (1 inquiry) contributed only to a small extent to the demand for funds.

In the expert interviews, lean decision-making processes in particular were highlighted as a factor in successful implementation for the fund. In addition, decision-makers should ensure that the programme pursues realistic investment objectives. Another key factor is that the financial instrument is geared to market conditions and is therefore a market-compliant programme without crowding-out effects

Lessons learned

Because of small size of Burgenland (4.000 km², 300.000 inhabitants in rural area) it was decided to establish the funds with a more "general" focus only restricted to SME. Therefore SME with relation to energy technology or to reduction of greenhouse gases are only a part of the portfolio of the tool. So, the Venture capital fund of the Province of Burgenland is more aligned the growth

of companies than to the direct reduction of greenhouse gases or to the higher production of renewable energy.

Although Upper Austria is about 3 times bigger than Burgenland (with 1.4 Mio. Inhabitants) their fund is also dedicated in a more general and technology oriented manner. Therefore from 99 requests only 5 of them could be assigned to energy technology. Also in that case, the Venture capital fund of Upper Austria is more dedicated the growth of companies than to direct reduction of greenhouse gases or to the higher production of renewable energy.

One reason why there is no significant venture capital fund in Austria for SME which is only or mainly dedicated to energy efficiency or the production of renewable energy could be the fact that there exist a lot of direct funding schemes like subsidies for nearly every kind of energy related action (e.g. reduction of greenhouse gases or the implementation of renewable energy) at state level as well as at province level. Another reason for SME could be the minor priority of energy saving within their direct business.

In addition energy contracting offers already exist in Austria which means that there is no need to invest in energy related actions with own resources because the “contractor” is taking the energy related investment for the company.

Reasons for a better acceptance of energy related venture capital funds in Austria can be:

- ***Increasing of the obligation to reduce greenhouse gases for companies***
- ***Reduction of direct subsidies in cash***
- ***Significant increase of energy costs which effects the economic performance of companies***

Further general success factors that contribute to the successful implementation and realisation of the financial instrument:

- ***Good regional networking to facilitate cooperation between companies and the public sector***
- ***Hands-on-Management, “soft” success indicators play a role here***
- ***With regard to the terms, our experts recommend 8-10 years, 5 years during the growth phase***
- ***Strengthening awareness of the funding opportunities among companies***

7. References:

- [1] Federal ministry for sustainability and tourism (2018); „Klima- und Energiestrategie“. Available: https://mission2030.info/wp-content/uploads/2018/10/Klima-Energiestrategie_en.pdf
- [2] Zertifikateforum Austria (2019); „EUSIPA-Market Report-4-Quartal-2017“. Available: <https://www.zertifikateforum.at/wp-content/uploads/2019/03/18-03-08-EUSIPA-Market-Report-4.-Quartal-2017.pdf>
- [3] Zertifikateforum Austria (2018); „Jahresbericht 2018“. Available: <https://www.zertifikateforum.at/wissen/publikationen/>
- [4] Federal ministry for sustainability and tourism (2019); „Klima- und Energieziele- Monitoringreport 2019“. Available: <https://www.bmnt.gv.at/energie-bergbau/energie/energieeffizienz/Klima--und-Energieziele-Monitoringreport-2019-gem-----7-EEffG-im-Dezember-2018-an-NR--bermittelt.html>
- [5] Statista GmbH (2020); „Endenergieverbrauch in Österreich von 1970 bis 2018“. Available: <https://de.statista.com/statistik/daten/studie/286969/umfrage/endenergieverbrauch-von-oesterreich/>
- [6] Federal ministry for sustainability and tourism (2018); „Klima- und Energiestrategie“. Available: https://mission2030.info/wp-content/uploads/2018/10/Klima-Energiestrategie_en.pdf
- [7] Energie-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft (E-Control) (2020); „Ökostrombericht 2019“. Available: https://www.e-control.at/documents/1785851/1811582/Ökostrombericht_FINAL.pdf/f689b909-2088-77b0-0c9e-eeb260effe7b?t=1569999423109
- [8] Statista GmbH (2019); „Anzahl der Neuzulassungen von Elektroautos in Österreich von 2008 bis 2019“. Available: <https://de.statista.com/statistik/daten/studie/285808/umfrage/neuzulassungen-von-elektroautos-in-oesterreich/>
- [9] Österreichischer Rundfunk, Stiftung öffentlichen Rechts (2020); ZIB2- broadcast from 15.01.2020 retrieved at 22:00h under: <https://tvthek.orf.at/profile/ZIB-2/1211/ZIB-2/14038188>
- [10] Federal ministry for sustainability and tourism (2019); „Klima- und Energieziele- Monitoringreport 2019“. Available: <https://www.bmnt.gv.at/energie-bergbau/energie/energieeffizienz/Klima--und-Energieziele-Monitoringreport-2019-gem-----7-EEffG-im-Dezember-2018-an-NR--bermittelt.html>
- [11] KMU Forschung Austria (2020); „Gute und steigende Eigenmittelausstattung der österreichischen KMU“. Available: file:///Y:/Projects/ext_Proj/1019_17_FIRECE/tech/04_WPT2/D.T2.1.2%20analysis%20report/quellen/Eigenmittelausstattung-KMU.pdf
- [12] Zertifikateforum Austria (2019); „Jahresbericht 2018“. Available: https://www.zertifikateforum.at/wp-content/uploads/2019/04/190312_ZFA_Jahresbericht2018-Finale-Version-1.pdf
- [13] European Private Equity and Venture Capital Association – EVCA (2014); Yearbook 2014.
- [14] Jud, Thomas; Marchardt, Jürgen; Friesbichler, Klaus S.; Peneder, Michael; Haslinger, Stefan (2013); Risikokapital in Österreich. Angebots- und nachfrageseitige Erklärungen der geringfügigen Ausprägung und Empfehlungen zu ihrer Überwindung, Studie im Auftrag des Bundesministeriums für Wirtschaft, Familie und Jugend (bmwfj), austrian wirtschaftsservice GmbH (aws) erstellt durch Österreichisches Institut für Wirtschaftsforschung (WIFO), KPMG, AVCO und Improveo, Wien.

- [15] Friesenbichler, Klaus S.; Url Thomas (2013); Standortfaktoren und Investitionskapital von Risikokapital in Österreich, WIFO Monatsberichte 2013.
- [16] Gassler, Helmut; Sellner, Richard (2014); Zwischenevaluierung der aws Venture Capital und Cleantech Initiativen. Analyse der Rahmenbedingungen und des Deal Flow, Studie im Auftrag des austria wirtschaftsservice erstellt durch das Institut für Höhere Studien (IHS), Wien.
- [17] Jud, Thomas; Marchardt, Jürgen; Friesbichler, Klaus S.; Peneder, Michael; Haslinger, Stefan (2013); Risikokapital in Österreich. Angebots- und nachfrageseitige Erklärungen der geringfügigen Ausprägung und Empfehlungen zu ihrer Überwindung, Studie im Auftrag des Bundesministeriums für Wirtschaft, Familie und Jugend (bmwfi), austrian wirtschaftsservice GmbH (aws) erstellt durch Österreichisches Institut für Wirtschaftsforschung (WIFO), KPMG, AVCO und Improveo, Wien.
- [18] OECD (2013); Entrepreneurship at a Glance. Available: http://www.oecd-ilibrary.org/sites/entrepreneur_aag-2013-en/06/03/index.html;jsessionid=tc5ydyxec26j.x-oecd-live-02?contentType=&itemId=%2Fcontent%2Fchapter%2Fentrepreneur_aag-2013-27-en&mimeType=text%2Fhtml&containerItemId=%2Fcontent%2Fserial%2F22266941&accessItemIds=%2Fcontent%2Fbook%2Fentrepreneur_aag-2013-en.
- [19] Austria Wirtschaftsservice Gesellschaft mbH (2020); Available: <http://www.awsg.at/Content.Node/>
- [20] Amt der Oberösterreichischen Landesregierung – Abteilung Wirtschaft (2019); “Ex-ante-Bewertung für den OÖ HightechFonds“. Available: <https://www.iwb2020.at/de/wettbewerbsfähigkeit-kmu/ooe-hightech-fonds.html>
- [21] European Union (2016); “European Structural and Investment FUNDS and European Fund for Strategic Investments“. Available: https://ec.europa.eu/regional_policy/sources/thefunds/fin_inst/pdf/efsi_esif_compl_en.pdf
- [22] BRM Burgenländische Risikokapital Management AG. Available: <http://www.athena-bgl.at/index.php?id=3>
- [23] Oberösterreichischer Hightech Fonds. Available: <http://www.hightechfonds.at/>

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