

Gap Analysis

Country Report: AUSTRIA

Project acronym: E-FIX

Project full title: DEVELOPING AND TRANSFERRING INNOVATIVE ENERGY FINANCING MIX IN ORDER TO ACTIVATE PRIVATE SECTOR INVESTMENTS IN SUSTAINABLE ENERGY PROJECTS

Grant agreement no.: 785081

Doc. Ref.: E-FIX-WP1 – Baseline – Analysis of financing frameworks and identification of financing gaps for partner countries

Responsible: CPU

Author(s): Andreas Karner
Alexandra Pintilie
Erika Boon

Date of issue: 28/01/2019

Status: Draft

Security: Public

Change control:

Version and date	Changes
V1, 28/01/2019	Finalised Version 1



TABLE OF CONTENTS

1. INTRODUCTION	3
2. POTENTIAL DEMAND FOR EE/RE FINANCE	4
3. BARRIERS TO EE INVESTMENTS	6
4. PROPOSED E-FIX FINANCING MECHANISM	9
5. ANNEXES	10
5.1. ANNEX A: BIBLIOGRAPHY	10
5.2. ANNEX B: ABBREVIATIONS	10

1. INTRODUCTION

This report is part of the baseline analysis of the E-FIX project. The E-FIX project aims at triggering private finance for sustainable energy projects using innovative financing mechanisms. In the target countries of Central and South Eastern Europe as well as the countries of the Caucasus region there is considerable idle potential for sustainable energy products and services. Both potential energy project developers and financiers face diverse financing barriers. An innovative energy financing mix is needed in order to activate new source of finance and facilitate an increased implementation of sustainable energy projects. Accordingly, the objective of the E-FIX project is to facilitate the take up and intensified usage of innovative energy financing mechanisms in the energy sector.

In order to accurately assess the idle potential of both financing sources and energy project implementation in each of the focus countries the E-FIX experts are conducting a baseline study including Gap Analysis. The present report presents one part of the baseline analysis focusing on the gaps identified during preparation of financial sector overview for Austria. The findings have been collected with inputs provided during a stakeholder workshop that was organised on 23rd October 2018.

2. POTENTIAL DEMAND FOR EE/RE FINANCE

Austria has strong financing sources for energy projects, which are based on equity finance and finance through local finance institutions as well as subsidies. These fields cover all major sectors - improvement in building sector, performance improvements incl. energy efficient equipment for industry and transport, as well as renewable energy production plants. There is, however, a lack of energy investments implemented using traditional equity financing. In particular, with technology projects which are highly reliant on subsidies to obtain feasibility. Leading to the problem that subsidies are limited in extend and quantity and can thereby only be part of the solution.

The initial research done within E-FIX, together with a first stakeholder workshop held on 23rd October 2018 at the Vienna University of Economics, helped to analyse the current potentials and observed gaps for energy financing in Austria, so projects and institutions are able to work on further implementation of existing financial options or create new ways of financial solutions. That is why it is necessary to present a financial gap analysis from the current research, which supports the idea to close the financial gap of renewable energy projects.

There is a lot of potential financial instruments like investment funds, green bonds or any energy cooperatives but they are less applicable for the Austrian Energy market. There are no investment funds specifically focusing on energy projects. The Austrian Climate and Energy Fund is a government-owned funding institution supporting national climate and energy targets and acts as subsidy provider and not as a conventional investment fund. Although investment funds are active in Austria focusing on sustainability projects and often also specifically mentioning renewable energy sources, it is not known if systematic funding of single projects can be done. Green bonds are still new in Austria.

Crowdfunding/Crowdfunding (CF/CI) evolved to a popular alternative in the last years in Austria, although still limited in size. CF/CI is rising as a common alternative financing mechanism, because it is not depending on any financial institutions and at least since 2015 it is regulated within the Austrian legislation. CF/CI could be implemented in project types and in any sector, from the residential sector to public building and infrastructure as well as industrial facilities. Due to a good coverage of different platforms there are already good examples and standardized processes for different applications. In the energy sector application can be mainly found for renewable energy projects with a majority in the photovoltaic sector.

Why not applying CF/CI mechanism to energy efficiency projects as well? Using current CF/CI platforms as infrastructure in Austria would be not just a form of alternative finance but also a marketing tool to expand the idea of energy efficiency and renewable energy projects. It could help to spread the need and change mind-sets of users/citizen within Austria, different research projects could at least benefit from it. For example, good practices and models from community power plants can be transferred to the energy efficiency sector. The results of these financing mechanism would combine the funding amount and the role as an education instrument for EE/RE but also guarantee changes on other financial instruments for energy efficiency projects which will try to fit in, even if these opportunities are yet not mature in Austria.

The energy financing matrix for Austria (see graphic below) shows several fields with rarely or not used financing mechanisms. While the EPC and Leasing mechanisms are partly in place or in some areas of less relevance (white marked boxes), crowd sourcing approaches (investing/financing, energy cooperatives) are yet available for small-scale renewable energy projects but less within the energy efficiency segment. And green bonds are currently under development by government-led initiatives.

Practical potential of energy project financing in Austria

- > common practice
- > rarely used
- > not used
- > not applicable



Sources of funds	Projects in need of financing									
	Improvement in building sector		Financing of energy performance improvements incl. ee equipment				Project preparation and development		Renewable energy production plants	
	Public	Private	Industry	Large companies	SMEs	Public infrastructure	R&D projects	Start-ups	Large/ utility scale	Small-scale
Equity financing		Green	Green	Green	Yellow		Green	Yellow	Yellow	Green
Financing through local finance institutes	Green	Green	Green	Green	Green	Green	Green	Yellow	Green	Green
Financing through intern. finance institutes	Green	Yellow				Green	Yellow		Yellow	Red
Microfinancing										
Subsidies	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Green
Leasing			Green	Green	Yellow	Yellow			Yellow	Yellow
Energy Performance Contracting	Green	Green	Green	Green	Yellow	Yellow			Yellow	Yellow
Investment funds	Yellow	Red	Yellow	Yellow	Red	Yellow			Yellow	Red
Green bonds	Red	Yellow	Red	Red	Red	Red	Red	Red	Yellow	Red
Crowdfunding/ Energy Cooperatives	Yellow	Red	Red	Red	Red	Red	Red	Yellow	Green	Green

Source: E-FIX Financing Baseline. Country Report: Austria. October 2018

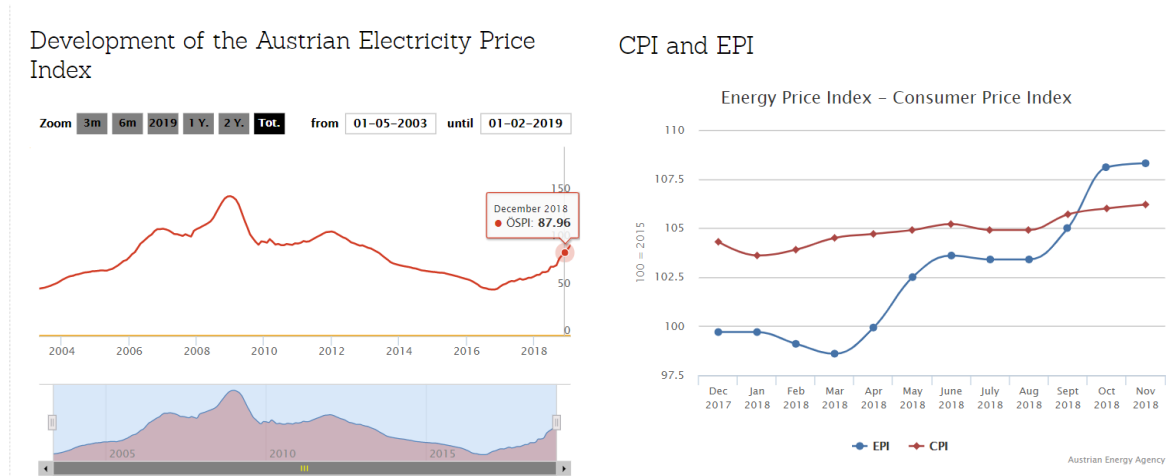
3. BARRIERS TO EE INVESTMENTS

Information/awareness barrier

Although it is expected that the overall sense of urgency concerning needs to improve energy efficiency, reduce the CO₂ footprint and climate protection is existing among political stakeholders, population and businesses, the level of specific awareness and “willingness to act/implement” corresponding measures is still far below these expectations. Public perception towards making concrete steps towards an energy transition is mainly linked to increasing the share of renewable energies (and in the public discussion mainly on electricity production only) and thus making Austria a country 100% covered by renewable electricity production until 2030 (one of the government objectives within the Austrian Climate and Energy Strategy “mission2030”). It is, however, less focussing on the reduction of the energy demand (and thus increasing energy efficiency) beyond the targets of the EU Energy Efficiency Directive (EED). With the result, that there are still lots of untapped potentials existing in the main energy consuming sectors of activity, such as buildings, transportation and industry. More specifically, linked to direct investments in energy sector (others than renewables), the energy efficiency dogma is less ambitiously followed, and shows further barriers connected to lack of awareness, suitable framework conditions (e.g. sufficient high levels of energy prices as a trigger for generating higher energy savings/lower payback) and missing financing instruments, or a combination of all of them. And moreover, energy efficiency is receiving less promotional and lobbying attention among stakeholders, mainly political decision-makers, associations and chambers. This has also to do with the missing “visibility” of saving measures (saving energy can be only visualised in a lower energy bill or through an available energy monitoring scheme, which is often costly as well), and therefore less suitability for creating marketing benefits (e.g. compared to a very visible PV plant on a roof)

Low economic feasibility

After a constant downward turn of energy prices, especially electricity and gas prices until mid-end 2016, prices, i.e. wholesale prices and consumer prices, are rising again (see figures below). The low level of the past years has influenced individual project economics (higher payback due to lower energy cost savings) and thus provided a barrier for many investors to significantly invest into energy efficiency improvements. Especially businesses and larger industries that consider only profitable margins (e.g. minimum 8-10% IRR) as an incentive for investments have reduced their activities in this regard or could not be motivated to invest. In combination with stricter banking requirements and investment policies in enterprises the lower level of energy prices has to a large extent directly influenced the level of energy saving investments in these sectors.



Source: Austrian Energy Agency¹

¹ <https://en.energyagency.at/facts-services/energy-in-figures/electricity-price-index/chart-austrian-electricity-price-index.html>

Although the Energy Efficiency Act (EEffG 2015), the implementation of the EU Energy Efficiency Directive (2012/27/EU) in Austria, has obliged large-scale consumers (businesses, industry) to conduct regular energy audits or implement energy management systems every four years, the energy audits have only marginally led to implementation of energy improvement measures. And the SME are not covered by this obligation and thus do not fall under the legal requirements set by the EEffG.

In addition is the obligation scheme for energy suppliers delivering more than 25 GWh (based on the balance of each previous year) requiring them to save 0.6 % of the energy sold to end consumers per year. Energy savings measures can be implemented in the suppliers own processes or at end-consumer level, but at least 40 % of the required energy savings have to be implemented in Austrian households or public transport system.²

Using this mechanism was initially introduced and followed a “market price” for implemented energy saving measures. Selling energy savings certificates to energy suppliers represents an additional incentive for the private sector to implement measures by increasing the measure’s feasibility and decreasing payback time.³ In order to communicate between demand and supply side, several trading platforms emerged.

However, the market mechanism failed to the extent, that it did not properly reflect the market demand for EE due to an over-supply of energy certificates in the market (a large share of them coming from very low-level energy saving measures in households or transport/fuel stations). The price for certificates started off at 6.5 to 8 ct/kWh per certified energy saving in fall 2015. After the end of the first reporting for the years 2014 and 2015 prices went down significantly to about 1 to 1.5 ct/kWh for the years 2016 and 2017, and further down to an average of 0.9 ct/kWh in 2018. The intended incentive for the implementation of more energy efficiency measures is therefore at the current price level quite low and requires in addition significant efforts at business level for approving the measures according to specific methodologies.⁴

Availability of alternative financing sources for energy innovations

Global studies in Energy Efficiency (IEA 2017⁵) reveal that most energy efficiency investments are self-financed (e.g. out of own pocket or equity). This is understandable if energy efficiency is accepted as being the quality of equipment and vehicles or construction that improves performance. The investment owner typical recovers the incremental cost added through efficiency in a short amount of time, usually through reduced operating costs.

However, there are situations where financing is necessary to encourage owners of buildings or facilities to make efficiency upgrades. One such scenario is when owners do not have the funds or are unwilling to pay the associated incremental cost for energy efficiency, e.g. also applying to decision-making processes during the design and construction phases of new buildings. Another scenario where financing is necessary for efficiency upgrades occurs when owners do not have the funds to replace equipment that is still functioning but is inefficient. This includes owners across residential, commercial, and industrial sectors.

To increase efficiency in the public and private sector, it is necessary to promote adoption of multiple technologies. Depending on the project size, owners of homes, commercial buildings, and factories may need to secure external financing, just as they would with any other large upgrade investment. Energy efficiency programs often focus on communicating savings potential to customers, identifying opportunities through audits and trainings, and conducting demonstration projects to prove savings and performance. Once convinced of the benefits, owners then need to find their own financing.

² cf. Federal Ministry of Science, Research and Economy, 2017: 10

³ Monitoringstelle Energieeffizienz, 2018

⁴ cf. Energieinstitut der Wirtschaft GmbH, 2018

⁵ <https://www.iea.org/efficiency/>

Energy efficiency investments tend to be smaller, offer better returns, and provide quicker repayment than typical infrastructure investments. However, the small project size may negatively affect an owner's investment decision. Even though efficiency investments offer very competitive returns, they are often overlooked in favour of larger, revenue-generating production investments. A key challenge within organizations is motivating senior managers to view efficiency investments as a strategic priority that supports profitability, growth, and sustainability.

Similarly, at major investment institutions, energy efficiency investments are often overlooked due to their smaller value and volume (but relatively high transaction cost). Stakeholders in addition mention that there are not sufficient number of financing products for EE projects available, and it requires more efforts to structure energy efficiency projects into smaller pieces. One way to offset this issue, is to bundle investments together or to look for other innovative mechanisms that would make it easier to provide alternative means of financing to smaller or medium-scale projects.

Crowdfunding is still a niche market compared to conventional bank lending, and it requires sufficient preparation time/administrative efforts, but can be an interesting alternative for projects and companies with a well communicable "story", and for whom the marketing and PR benefits of the campaign are an asset. CF/CI could be also considered an option where innovative technologies or processes require first funding (in addition to e.g. innovation funds, grants offered by national/EU innovation/research programmes).

Future renewable, smart-grid and highly efficient low-carbon energy systems present many challenges to existing energy policies and will thus require a paradigm shift in the way these policies are planned and structured. In particular, demand side management will necessarily play a greater role in future low carbon energy systems and this will see consumers providing various ancillary services to the grid including: demand reduction, demand response, energy storage and micro-generation. Essentially, consumers will become "*prosumers*": consumers that provide various services to or receive other services from the system.

The increased flexibility opens opportunities for involving local communities, Energy Service Companies (ESCOs), small- and medium enterprises and individuals in generating off-grid energy and off-grid energy services, which in turn grants households, communities and businesses greater freedom to select how and when to 'prosume'. A prosumer market, thus, acts as an enabling platform for creating and developing new and innovative markets and niches that are needed to prevent further technological lock-ins; this will be particularly necessary during the energy system transition period.

4. PROPOSED E-FIX FINANCING MECHANISM

The Austrian project team will, based on the identified potentials/gaps, and with feedback collected from national stakeholders, develop within E-FIX a new financing approach for sustainable energy investments as follows:

- **Proposed financing mechanism**

Crowdfunding/Crowdinvesting for energy efficiency and/or renewable energy projects. The infrastructure with a diversity of platforms is already given, however, the mechanism itself is not yet broadly applied to some sectors, e.g. SME or industries. A strong focus will be given to identify opportunities to finance energy efficiency measures by CF/CI.

- **Proposed implementation mechanism**

Regarding the proposed financing mechanism of CF/CI mainly businesses (SME), public infrastructure operators, municipalities/communities and private homeowners are mainly addressed. Financing through/with the crowd will be further explored to focus on a broader range of energy services (not only the typical CF project for a small-scale renewable energy plant), but will also address financing institutions like banks and funds to understand how sustainable energy projects could benefit of a blended financing scheme, e.g. covering traditional borrowing finance with the CF/CI mechanism (e.g. Civic Crowdfunding).

- **Types of EE/RE projects targeted to finance**

In the past, CF/CI projects were mostly financing renewable energy projects, such as photovoltaic plants. But with E-FIX methodology and tools being developed and rolled-out among various stakeholders, another focus will be given to involve energy innovations in the area of public infrastructure, industrial/business processes and building technologies which are close to the investors, and where they can benefit on the financial output.

As a result from the stakeholder workshop, CF/CI is suggested to be used to finance EE measures such as heating system improvements (boiler exchange), improvement of A/Cs, transport efficiency/alternative transport means or within the (more typical) segment of renewable energy investments (e.g. photovoltaic in public buildings, micro-CHPs, etc.), energy storage solutions (thermal and electrical) or smart city developments.

E-FIX will aim to look for different solutions in different sectors, e.g. public, residential, businesses/industry and transport sectors.

- **Estimated potential investment size**

During the E-FIX project implementation period (2018-2021) it is envisaged to finance in total up to EUR 1.0 m in EE/RE projects under the CF/CI scheme, which will approximately be reaching 200,000 EUR investments per each project, with about 1-2 renewable energy projects/campaigns and 2-3 energy efficiency projects/campaigns conducted.

- **Number of expected pilot investments**

In total approximately 5 pilot investments facilitated directly through E-FIX.

5. ANNEXES

5.1. ANNEX A: BIBLIOGRAPHY

Austrian Energy Agency (2019): Development of the Austrian Electricity Price Index. URL: <https://en.energyagency.at/facts-services/energy-in-figures/electricity-price-index/chart-austrian-electricity-price-index.html>

Energieinstitut der Wirtschaft GmbH (2018): Energie Effizienz Radar. April 2018. URL: http://www.energieinstitut.net/sites/default/files/radar_april2018_fin.pdf

Federal Ministry of Science, Research and Economy (2017): NEEAP 2017. Second National Energy Efficiency Action Plan of the Republic of Austria 2017 in accordance with the Energy Efficiency Directive 2012/27/EU. Created by: Austrian Energy Agency – AEA / Monitoring Body on behalf of the Federal Ministry of Science, Research and Economy, Vienna. URL: https://ec.europa.eu/energy/sites/ener/files/documents/at_neeap_2017_en.pdf

International Energy Agency (2018): Energy Efficiency. Analysis and outlooks to 2040. URL: <https://www.iea.org/efficiency2018/>

Monitoringstelle Energieeffizienz (2018): Energielieferanten. URL: <https://www.monitoringstelle.at/index.php?id=727>

5.2. ANNEX B: ABBREVIATIONS

CF	Crowdfunding
CHP	Combined heat and power
CI	Crowdfunding
EE	Energy efficiency
EPC	Energy Performance Contracting
EU	European Union
EUR	Euro
PV	Photovoltaics
RE	Renewable energy
SME	Small and medium-sized enterprises



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 785081. Disclaimer: The content of this material does not reflect the official opinion of the European Union. Responsibility for the information and views expressed lies entirely with the author(s).