

Market Report on the Austrian EPC Market



Imprint

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1. Executive summary

Political Framework:

- Most important drivers for EPC:
 - there are no legislative barriers, the framework over all is supportive for EPC
- most important barriers for EPC
 - absolute energy prices and relative energy costs (compared to total budgets) are too low to create an incentive for EPC
 - Uncertainties about budget and debt reporting – aka Eurostat Guidance note and Maastricht criteria – make communities reluctant to going for an EPC
- Most relevant support schemes
 - regional subsidy-schemes (i.e. Upper Austria) for EPC facilitate the market

EPC market:

- Public sector
 - Most relevant opportunities:
swimming centers, smaller projects with lower service level, consideration of other multiple benefits: most projects are concluded because of necessary renewal investments
 - Most relevant barriers and threats:
public debt regulations, uncertainties on Maastricht criteria
- Private sector: industry:
 - Most relevant opportunities:
high cost-consciousness, new business models with modified guarantees, multiple-benefit-assessment

- Most relevant barriers and threats:
only short paybacks and contract periods possible.
- Private sector: Tertiary sector:
 - Most relevant opportunities:
significant energy cost saving potentials
 - Most relevant barriers and threats:
financing issues and low credibility of many market actors in this sector
- Private sector: residential buildings:
 - Most relevant opportunities:
untouched market, significant energy cost saving potentials
 - Most relevant barriers and threats:
non-supportive legal framework, split-incentive-dilemma

Survey on EPC:

An online-survey on EPC with focus on private client groups and evaluation of barriers and solutions has been performed. 28 experts participated in the survey, consisting of experienced and future clients, ESCOs and other stakeholders.

Interesting findings:

- Reduction of CO₂ or increase of building value are hardly driving forces for modernization measures. On the other hand the increase of comfort, the cost argument and necessary renewals are door-openers also for energy-efficiency measures.
- mostly measures are implemented by external companies and afterwards maintained and operated by in-house-staff. This might lead to risks on the side of the building owner that can be addressed/solved through EPC.
- Contrary requirements: Short contract duration in the private sector, rather long contract duration in the public sector
- The lack of profitability of an EPC could be overcome through the consideration of non-energy-related benefits (“multiple benefits”): increase of value and comfort, reduction of maintenance requirements (opportunity costs)

2. Framework conditions

2.1. Relevant national legislation and regulation

The main law in terms of energy efficiency in Austria is the Austrian Energy Efficiency Law. The main aim of the Austrian Energy Efficiency Law is an increase of energy efficiency of 20% until 2020, as well as the achievement of the other 2020-goals. The law includes the following key-aspects: energy suppliers, which sell more than 25 GWh to end users, must ensure the implementation of energy-efficiency measures in the action field of themselves, their customers and other energy consumers. Those measures must correspond to a minimum of 0.6% of their energy sales to end-customers in Austria in comparison to the year before (accumulated 159 PJ until 2020). Decisive is the implementation of measurements, which improve the input-output-relationship. The energy suppliers must be able to prove those measures, whereas the actual reduction of the energy usage is not necessary. Energy-efficiency and –reducing measures are assessed in regard to their impact (reduction of kWh/a) and are credited within the national monitoring centre, which was newly established. The monitoring centre reviews, if energy suppliers comply with their obligations. If they fail to fulfil their obligations, they can pay a compensation, which goes into a fund for the support of energy-efficiency measures. Within a first assessment of the law conducted with the help of a survey among energy suppliers and companies by the Energy Institute for Business, energy suppliers indicated, that they implemented the majority of their obligations within the own company. Only a little percentage was handled by the payment of compensation fees. The second important aspect of the law concerns big companies, which have more than 250 employees or an annual turnover of more than 50 Mio.€. They are obliged to either introduce an energy-management system or to accomplish an energy-audit in a four-year-cycle.

Within the Austrian Energy Efficiency Law, official energy auditors can be registered in the so called “register for qualified energy-service-providers”. They have to fulfil certain quality criteria, in order to be registered in the field of building, process and/or transport. The register is public. Besides a basic education further practical experience is necessary to fulfil the credit system.

Legislation / regulation	Effect on energy services / EPC
The EU Energy Efficiency Directive (2012) is being implemented in Austria with the Austrian Energy Efficiency Law (2014). Until 2020, an increase of energy efficiency of 20% shall be reached. Within the law, large enterprises are obliged to conduct energy audits or to implement an energy management system.	+
Federal Contracting Campaign - "Bundescontracting Offensive"- (2001) is Austria's largest EPC program. Around 600 buildings were outsourced to ESCOs.	+
Another part of EED implementation is the National Energy Efficiency Action Plan NEEAP (June 2011)	0(+)
The Austrian Climate Protection Law, resolved in 2011, determined maximum limits for emissions for six sectors (waste industry, energy and industry, buildings, transport, agriculture and prospered gas). Besides, the elaboration and implementation of measures outside the European Emission Trading System should be regulated.	0
The Austrian Law for Electricity Industry and Organisation (from 2010) determines that till 2019 95% of all energy meters have to be substituted by smart meters.	0
15 A-B Agreement between state and federal state according Art. 15a B-VG for measures in the building sector for reduction of emissions of greenhouse gases.	+
The Austrian Energy Strategy (2010) calls for an increase of energy efficiency, the further expansion of renewables as well as the secure energy supply.	0 (+)
The Municipalities Codes of the Federal States aim to ensure balanced budgets to help fulfilling the criteria of the Maastricht Treaty. The municipal supervisory authorities ensure that local authorities adhere to this target by sharply controlling their public debt levels.	-

2.2. Relevant public support schemes

Funding / support scheme	Open to client and/or ESCO	Effect on energy services / EPC
Subsidies by the Kommunalkredit Public Consulting (KPC) allow the financial support of a broad range of energy efficiency measures.	Client & ESCO	+
Establishment of framework to sell EE measures due to Austrian Energy Efficiency Law.	Client & ESCO	0 (+)
Feed In Tariffs for renewables according to Austrian Renewables Law (Ökostromgesetz), with which the tariffs are determined for the corresponding facility.	Client	0
EPC (and ESC) subsidy scheme in the region of Upper Austria (up to 75.000€) http://www.energiesparverband.at/foerderungen/energie-contracting.html	Client	+

2.3. Available financing options for energy services

The three main EPC financing options in Austria are customer financing, EES provider financing and third party financing). Most common is third party financing, as well as all forms of mixing these types. The type of financing is subject to the agreement between the contracting parties and varies from contract to contract. (Graz Energy Agency, 2013)

ESCOs, especially small and medium sized ones face the difficulty to raise financial liquidity. A greater restrictiveness of financing institutes in the granting of credits could be observed. (Bayer & Auer, 2013)

2.4. Development of energy prices in Austria

Energy prices and price relations strongly influence the attractiveness of energy efficiency investments and the economic viability of energy services.

European energy prices (based on Eurostat) have been published in the 2016 “Energy Data” publication of the German Federal Ministry for Economic Affairs and Energy. The following graphs illustrate the price development for gas (industry and

households), electricity (industry and households) and light heating oil (index year 2005).

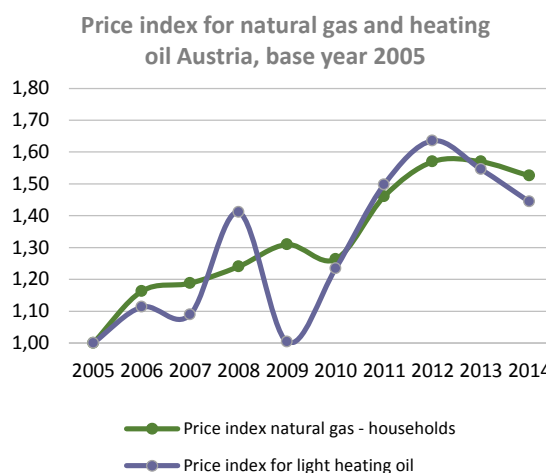
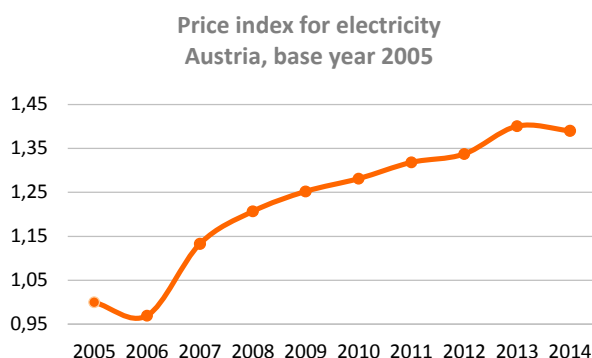


Figure 1: Development of electricity prices for households in Austria

Figure 2: Development of natural gas and heating oil prices in Austria

It can be stated that:

- Prices for **electricity** increased since 2005: approx. 30 % in industry and 40 % for households.
- Since 2009 electricity prices for industry slightly decreased
- The prices for natural gas and heating oil are fluctuating frequently

Graphs illustrating not only the price indexes but also the absolute prices for gas, oil and electricity as well as the detailed figures are attached in annex A.

2.5. Critical assessment

National legislation and regulation

European legislation can be considered as key impulses for defining the extensive legislative framework and funding environment for energy efficiency, renewable energies and energy services in Austria.

A major bottleneck for EPC on the regulatory level is the very restrictive approval practice of EPC in local authorities through the supervisory authorities, which control public debt levels. Especially for indebted communities, for which EPC could be explicitly interesting, the approval for EPC projects is hard to obtain in several Federal

States. One step further, this restrictive practice is also supported by the Eurostat Guidance Note (2015) on the European level, impeding the development of EPC markets in many countries.

Despite this bottle neck EPC is mostly limited to the public sector, e.g. legislative matters in the residential sector are effectively prohibiting the application of EPC-schemes due to the split-incentive-dilemma.

Public support schemes

On national level there is one support scheme available through soft loans given by the KPC. Those loans have been introduced with the focus of EPC in street lighting and have been extended also to EPC-projects in buildings.

Besides to that the Austrian Energy Efficiency Law gives the opportunity to sell saving measures to utilities that have to deliver those measures according to their energy sales. On the downside the actual price for measures is too low to serve as an incentive.

Alternatively to dealing with measures environmental subsidies (UFI) are also available for certain technologies. These subsidies are also available within EPC projects, but depend on subsidy budgets and de-minimis regulations.

Especially worth mentioning is the specific EPC-subsidy-scheme of Upper Austria: in this framework EPC projects can be subsidised with up to €75.000 or up to 40% of the investment costs. The scheme is one of the reasons, that Upper Austria has a lively EPC market, that led to 140 subsidised EPC-projects from 2006-2015. Those projects showed a cumulative investment volume of 39 Mio € with granted subsidies of 3.2 Mio €.

Projects	Cumulative investment	Subsidies
2006: 5	1.633.169,00 Euro	132.904,00 Euro
2007: 11	4.635.983,00 Euro	297.157,00 Euro
2008: 6	1.540.377,00 Euro	114.062,00 Euro
2009: 10	2.690.049,00 Euro	195.192,00 Euro
2010: 15	3.448.393,00 Euro	236.161,00 Euro
2011: 22	7.528.503,00 Euro	455.878,00 Euro

2012:	20	4.109.005,00 Euro	459.918,00 Euro
2013:	13	3.014.160,00 Euro	297.498,00 Euro
2014:	16	4.286.725,00 Euro	470.259,00 Euro
2015:	22	6.901.939,00 Euro	600.854,00 Euro
total:	140	39.788.303,00 Euro	3.259.883,00 Euro

Financing

The predominantly large ESCOs operating on the Austrian EPC markets usually do not face serious financing problems. As both EPC clients and banks know and usually accept the instrument of forfeiting, this is the most common financing structure of EPC in Germany.

Only in case of weak financial situations on the side of public clients the financing becomes more and more difficult. Though no EPC-project so far had to be terminated because of denied financing.

Energy prices

The drop in international oil and natural gas prices since 2013 – combined with the anticipation of moderate prices in the future – clearly reduces the economic pressure on building owners to invest in energy efficiency or modernise the building stock with energy services such as energy performance contracting.

Also the low energy prices are effectively increasing the payback of all efficiency measures. Combined with the handicap of short paybacks (industry: max 3-5 years; public bodies: 7-15 years) this prohibits numerous efficient measures.

3. Key actors

3.1. Description of key actors

ESCOs

The Austrian ESCO market includes around 22 ESCOS offering EPC services. The following ESCOs (selection, alphabetical order) offer EPC in Austria:

- AEE Energiedienstleistungen GmbH
- Aigner Energiecontracting GmbH, Neuhofen/Krems
- Bacon Gebäudetechnik GmbH & Co KG
- Central Danube Region Marketing & Development GmbH
- Cofely Gebäudetechnik GmbH
- ees energy environment solutions GmbH
- ELIN GmbH & Co KG
- Energie AG Oberösterreich Power Solutions GmbH
- Energie Steiermark Kunden GmbH
- Energiecomfort Energie- und Gebäudemanagement GmbH
- Honeywell Austria GmbH - Building Solutions
- Porreal Facility Management GmbH
- Proenergy Contracting GmbH
- Siemens AG Österreich Building Technologies
- Wien Energie GmbH

Source: <http://www.transparens.eu/at/epc-market/energiedienstleister>

EPC clients

The customer groups for energy services including EPC projects can generally be classified into five main customer groups.

	EPC	ESC	Others*
Municipalities, public buildings	+++	++	++
Hospitals, medical facilities	-	++	+
Industry	+	+	+
Commerce, Trade, Services	-	+++	++
Social housing companies	-	+++	++
Shares of the total contracting market	~10 %	~85 %	~5 %

Table 1: *others: operation contracting etc.

Public sector

The public sector is the largest EPC market. The most important client groups are the BIG the federal real estate association (“Bundesimmobiliengesellschaft”) and the 2.354 municipalities, which are among the largest owners of public buildings in Austria.

The demand in cities and rural communes still exists, although various projects for cities and – very common – pools of rural communes have already been implemented in the past. Main barriers for further development of this market are the high transaction costs of contracting in relation of the typical project sizes in this sector and lack of knowledge: most decision makers judge EPC only as a financing instrument and not for enhanced and improved energy efficiency and as an outsourcing tool. (Graz Energy Agency, 2013)

For the implementation of EPC a minimum energy cost baseline in Austria of approximately about 100 T€ is required. Small buildings are in general not well suited for EPC. However, a range of EPC projects was already implemented in Austria within building pools. In this way also small buildings have been optimized with EPC.

Private sector (Industry, Commercial, Housing)

Economy in Austria consumed in 2012 around 43% of the total energy need in the country (whereas 25% are subscribed to private households and 32% to transport), which goes into energy-intensive industry (24%), trade (28%), services (24%) and agriculture (5%) and therefor provides big potential for energy efficiency services. So far, there are only few EPC projects being implemented in the private sector.

Regarding the table below, there is definitely potential for energy efficiency measures in Austrian economic sectors.

Energy demand is distributed among sectors as the following:

	2011		2012	
	PJ	In % of final energy consumption	PJ	In % of final energy consumption
final energy consumption economy	483,05	43,8%	469,17	42,8%
<i>therefrom</i> energy intense industry	208,47	18,9%	202,56	18,5%
<i>therefrom</i> iron and steel production	47,80	4,3%	47,87	4,4%
chemistry and petro chemistry	42,01	3,8%	41,36	3,8%
non-iron metal	8,44	0,8%	7,93	0,7%
stone, earths, glass	40,09	3,6%	36,45	3,3%
paper and print	70,13	6,4%	68,95	6,3%
other production	129,02	11,7%	129,23	11,8%
public and private services	123,49	11,2	113,73%	10,4%
agriculture	22,07	2,00%	23,64	2,2%

(BMWFV, 2014)

EPC facilitators

Project facilitators (agencies, consultants) are very important in Austria. They help especially municipalities in conducting public procurement for ESCO services (e.g. project development, assistance in the tendering procedure and other project management tasks). There are several organisations offering diverse services in regard to consultation and mediation:

- e7 Energie Markt Analyse GmbH
- ECONS Ehrenhauser Consulting e.U.

- Energetic Solutions
- Energy Changes Projektentwicklung GmbH
- ff-energy, Gschwandt
- Grazer Energieagentur GmbH
- Mastermind Ingenieurbüro GmbH
- OFI Technologie & Innovation GmbH
- Dr. Rausch GmbH
- TÜV Austria Consult GmbH

Source: <http://www.transparence.eu/at/epc-market/energiedienstleister>

3.2. Critical assessment

The public sector remains an important client group for EPC with continued large potentials for projects in Austria. The general suitability of public buildings is generally high due to stable usage patterns, openness to long contract duration (> 10 years).

At the same time, there is a big potential for EPC projects in the private sector. So far, only few projects have been implemented.

4. Market volume

In relation to the Austrian EPC market size, there are only few sources available.

A survey conducted within the project Transparens, respondents indicated only little change in the Austrian EPC market in the last three years:

State of EPC Market (over 3 years)

Over the last 3 years, has the market for EPC in your country seen:

	Major Growth (+6% and higher)	Slight Growth (+1 to +5%)	Little Change (0%)	Slight Decline (-1% to -5%)	Major Decline (-6% and lower)
TOTAL		33 %	67 %		
Austria		33 %	67 %		

Table shows share of responses in %

Source: <http://www.transparens.eu/database/1?year=2015>

4.1. Number of EPC projects

Concerning numbers of EPC projects in Austria, there is no useable and representable data available at the moment. A 2015 survey in the context of the Transparens project, in which Austrian ESCOs participated, resulted in the figure underneath.

Number of projects initiated

How many EPC projects has your organisation initiated / become involved with in the last 12 months?

	None	1-5	6-10	11-20	20+
TOTAL	17 %	67 %	17 %		
Austria	17 %	67 %	17 %		

Source: www.transparens.eu/database/

4.2. Size of EPC projects

Regarding the size of EPC projects in Austria, there are only numbers for 2005 – 2007 available. Those numbers (in table average) comprise the following:

Key parameters	
Investvolume EPC cumulative (projects since start up)	EUR 82.426.551
savings monetary (projects cumulative € / year)	11.943.000 EUR/a
savings CO2-emissions (projects cumulative € t / year)	32.274 t/a
savings CO2-emissions (projects since start up)	137.243 t

Table 2: Key parameters project EESI

Taking into account the figures of the subsidy-scheme of Upper Austria the average investment for EPC-projects is 285.000 € per project.

No systematic evaluations of EPC projects in the public or private sector are available.

4.3. Other important energy services

In Austria, the predominant ESCO business model is **energy supply contracting** (ESC) with approx. 85 % of all ESCO projects. Only approx. 10% of the market is covered with EPC. The rest of the projects involve financing only, or they are based on operation contracting and other less complex solutions.

4.4. Critical assessment

Austria is considered to be an advanced market for standard EPC, if it comes to experience, know-how and best practice. Also the legislative framework seems to be beneficial for EPC.

On the other hand still the EPC-market is stagnating: in the public sector EPC is only a niche product, while in the private sector there is hardly any development – aside from a few good examples.

More potential for development in this sector is expected with EPC-models that are more flexible and deliver with lower transaction costs, thereby of course decreasing the guarantee level.

5. Market assessment of EPC sectors

Expert feedback collected from market stakeholders combined with own experiences is shown in the following SWOT analysis regarding EPC in the various building sectors:

5.1. Public sector





5.2. Private sector: Industry

STRENGTHS

- High cost-consciousness in industry
- Openness to outsourcing in industry
- High energy demand in industry
- Broad scale of measures

WEAKNESSES

- Typically only a short project duration is being accepted
- Energy cost is small in relation to total cost
- Hardly best practice available
- Hardly experience in project facilitation → no standards

OPPORTUNITIES

- Possibility to develop/offer integrated energy services
- Introduce multiple benefits (i.e. renewal investments)
- Legal obligations (e.g. energy audits) and increasing number of energy management-systems can foster projects
- Adaption of procurement to industry's procurement routines can open the market, Flexible models to reduce administrative effort
- ESC is already well established and can be a door opener for EPC

THREATS

- EE measures in production processes require highly specialised ESCOs (small supply market)
- Complex and lengthy procurement might keep off from purchase of EPC
- Potential leakage of information prohibits project development (i.e. energy prices, production processes)
- Economic crises can quickly shift focus to other topics
- No time for exaggerating preparation and procurement
- Other cost factors

5.3. Private sector: Tertiary sector

STRENGTHS

- Increased building value
- Option of financing through ESCO
- Significant energy cost saving potentials, large market

WEAKNESSES

- Typically only short project duration is being accepted
- The split incentives dilemma in case of rented facilities
- Low credibility for financing
- Hardly best practice available
- Hardly experience in project facilitation → no standards
-

OPPORTUNITIES

- Green image, sustainability reports
- Interest (of tenants) in energy cost savings
- Possibility to integrate comfort and maintenance improvement
- Increasing number of energy management-systems can foster projects
- With a good solution for the split-incentive-dilemma rented facilities open a large market segment

THREATS

- Resistance against outsourcing energy related services and operations to third parties (?)
- Non-supportive legal frameworks (taxation) in case of rented units
- Complex and lengthy procurement might keep off from purchase of EPC
- Traditional procurement-approach favoured, low level of understanding for EPC
- Forfeiting not possible, ESCO financing too risky/costly

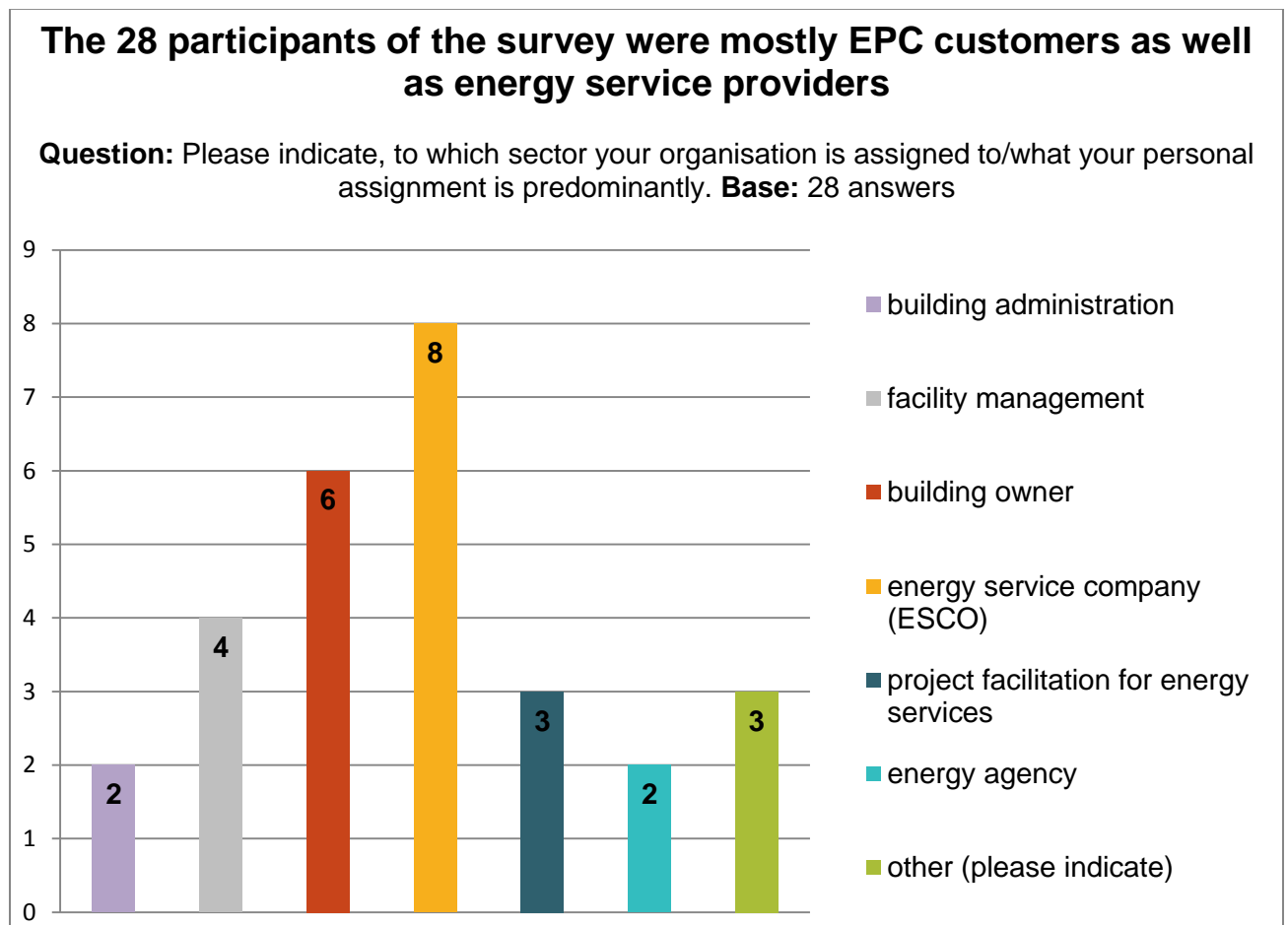
5.4. Private sector: Residential buildings

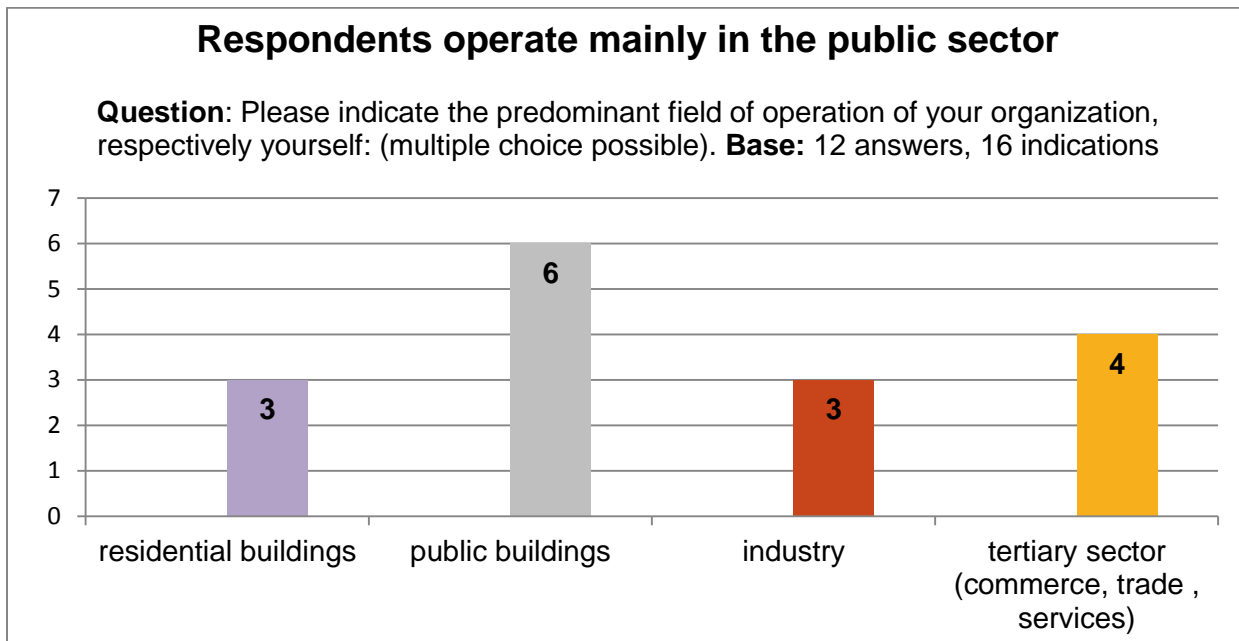


6. Results from stakeholder survey

From July until August 2016 an online stakeholder survey was conducted in order to address EPC-market stakeholders. The questionnaire included a mixture out of quantitative as well as qualitative questions concerning the usage of energy efficiency services in Austria.

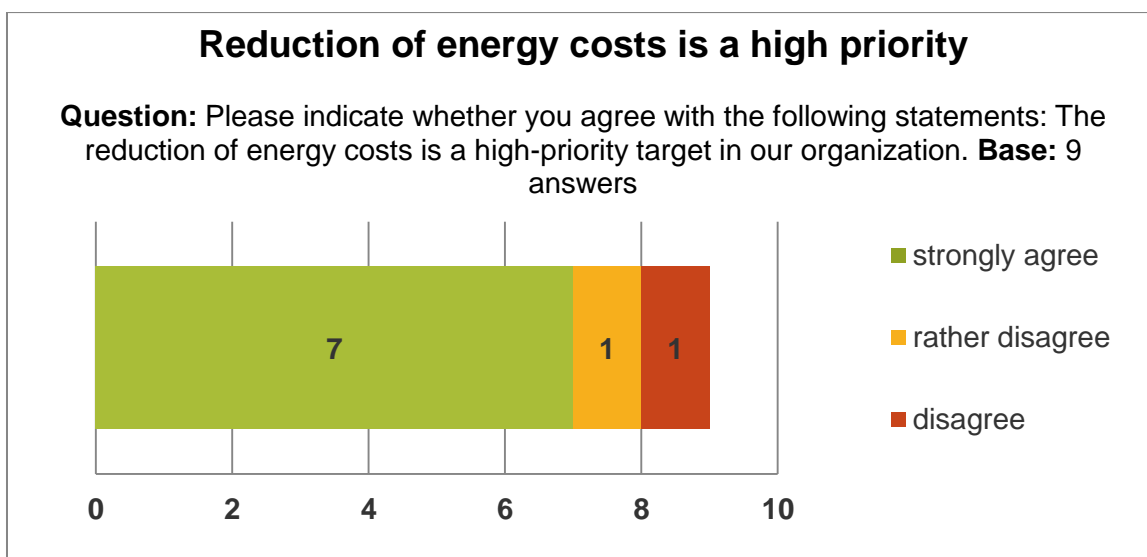
6.1. Basis of survey





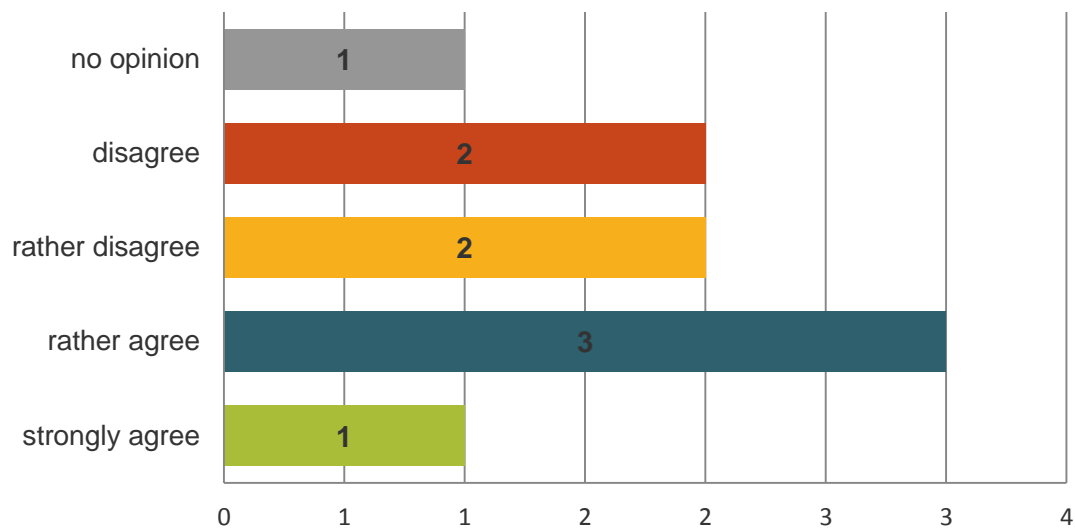
6.2. Experiences with EPC

- 7 out of 9 respondents indicate that the reduction of energy cost has high priority in their organization.
- Around 50% of respondents have already experiences with energy service providers; one third evaluated the experiences as positive.



Experience with the involvement of ESCOs is only partially available

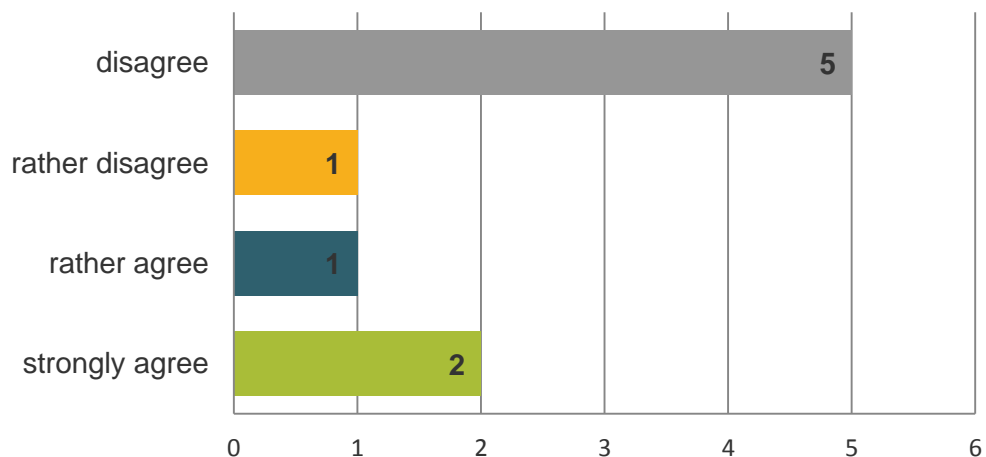
Question: Please indicate whether you agree with the following statements: We have experience with the involvement of energy service companies (ESCOs). **Base:** 9 answers

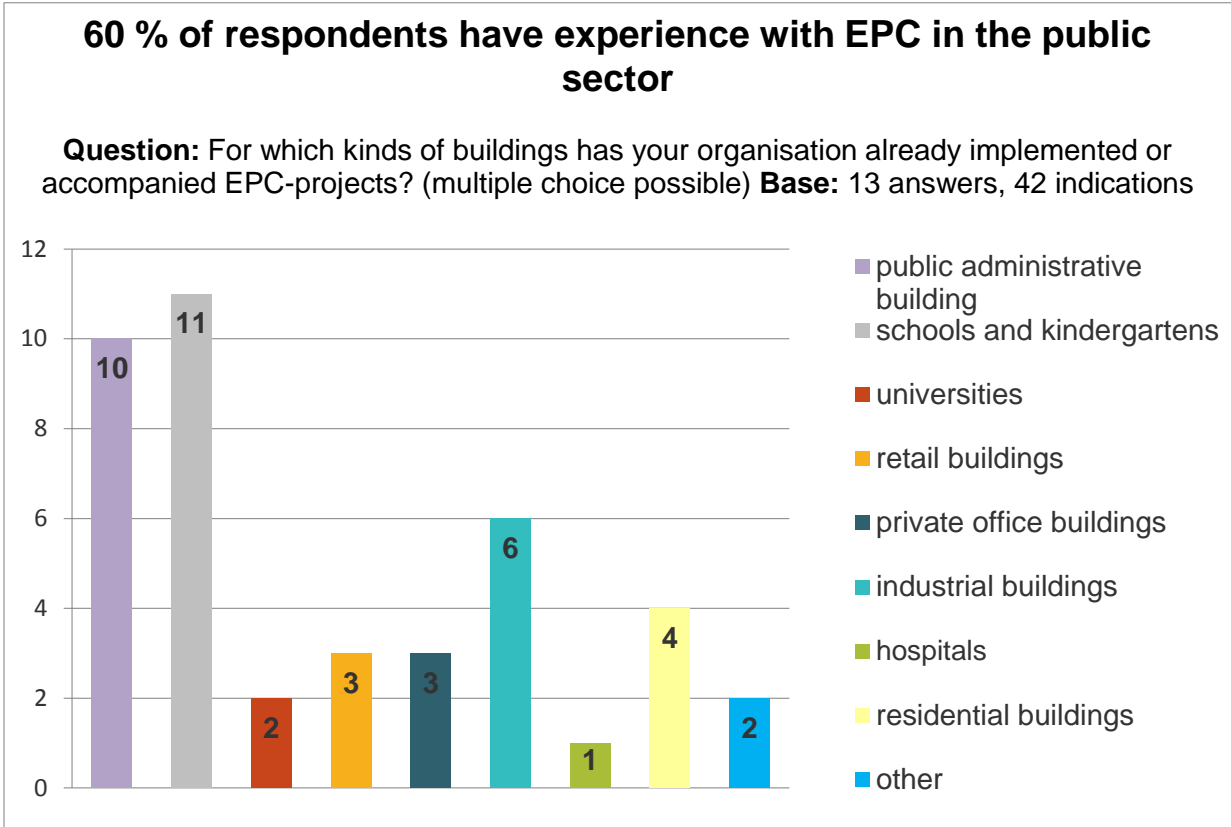


Wherever EPC is available, the experience is mostly positive (the “disagree”-answers are dedicated to interviewees)

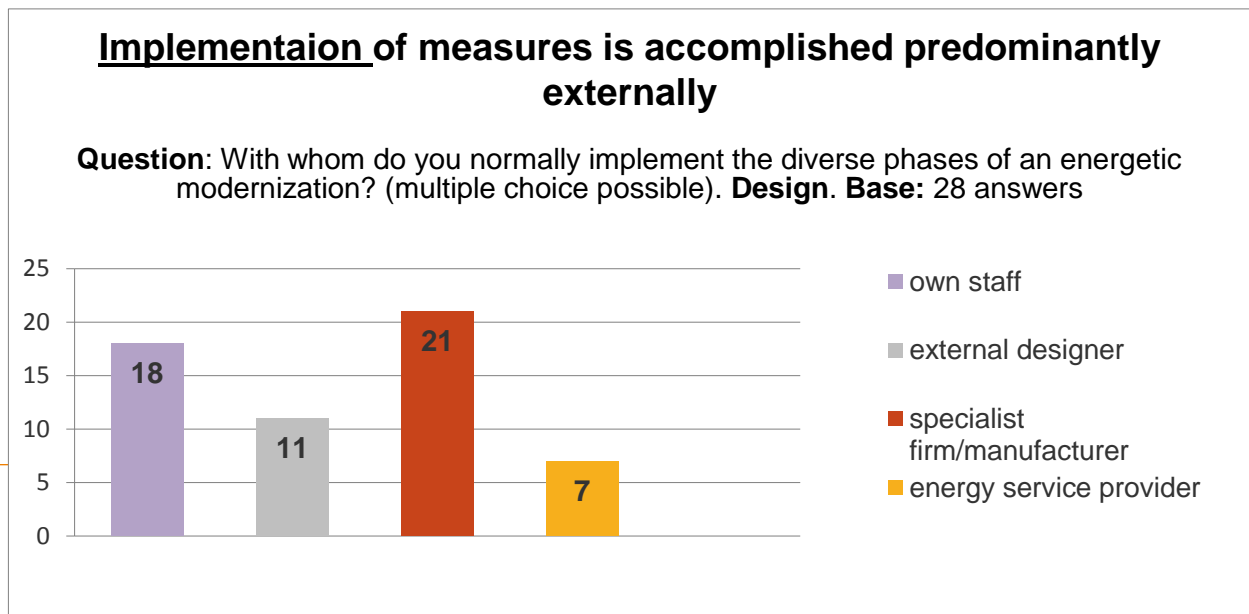
If available, experience with Contracting is mostly positive

Question: Please indicate whether you agree with the following statements: Our experience with ESCOs was predominantly positive. **Base:** 9 answers



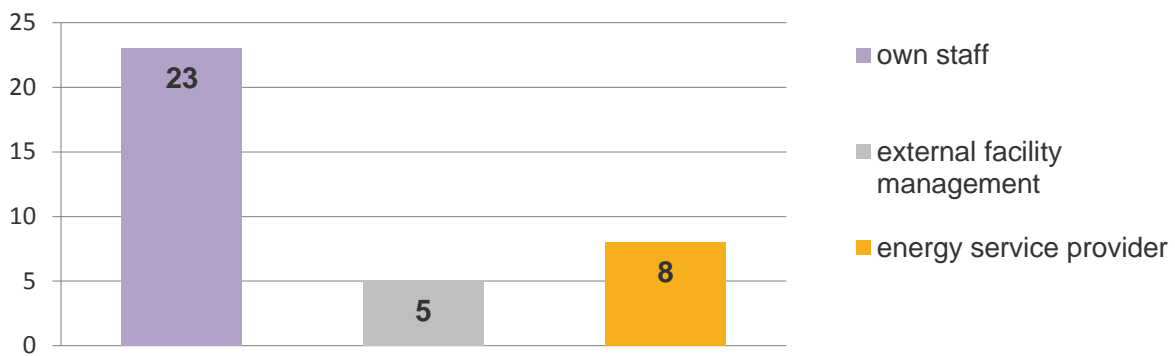


The following two graphs give evidence, that mostly measures are implemented by external companies and afterwards maintained and operated by in-house-staff. This might lead to risks on the side of the building owner that can be addressed/solved through EPC.



Operation of facilities after implementation of measures is accomplished predominantly internally

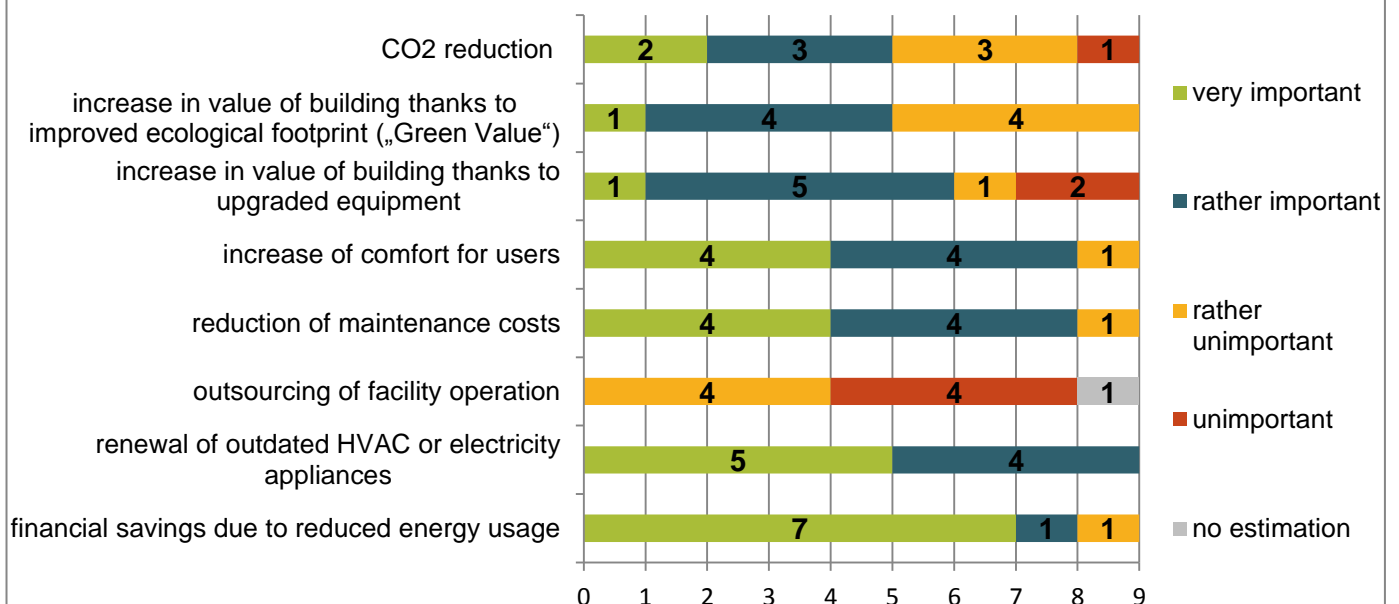
Question: With whom do you normally implement the diverse phases of an energetic modernization? (multiple choice possible). **Operation of facilities after implementation of measures. Base: 28 answers**



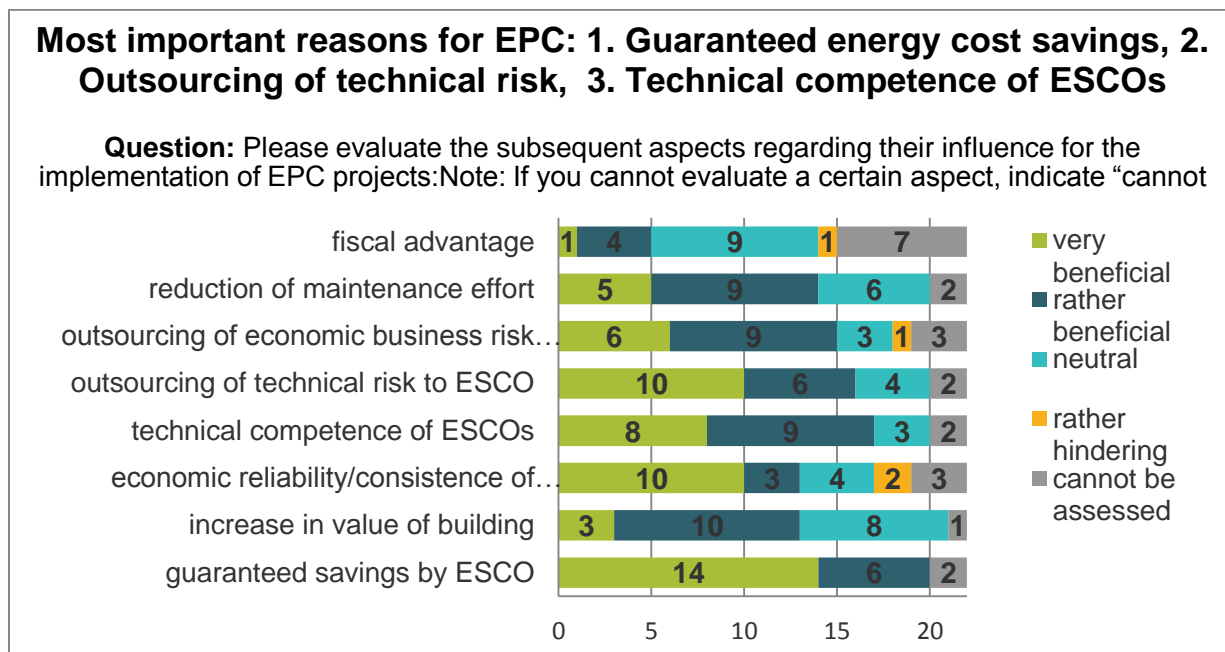
Reduction of CO2 or increase of building value are hardly driving forces for modernization measures. On the other hand the increase of comfort, the cost argument and necessary renewals are door-openers also for energy-efficiency measures.

Financial savings and renewal of facility operation are most important reasons for modernization

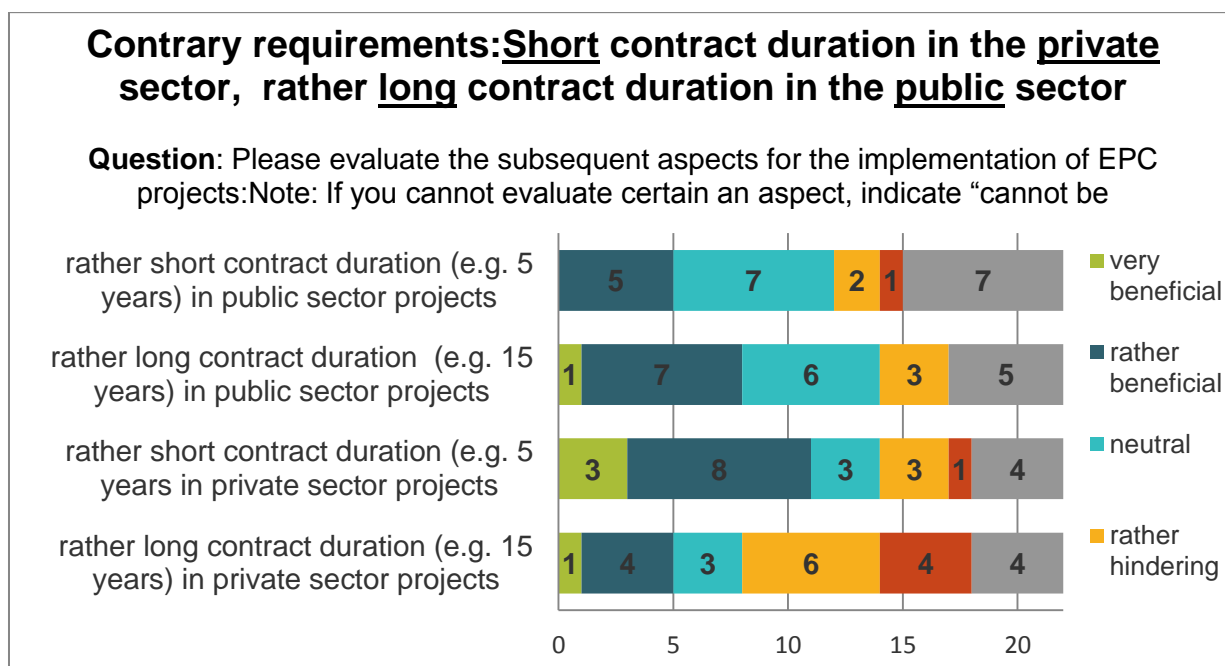
Question: There are several reasons for an energy efficient refurbishment. How do you evaluate the importance of the following aspects: **Base: 9 answers**



For the follow-up step towards an EPC-project the reasons for it are as expected:



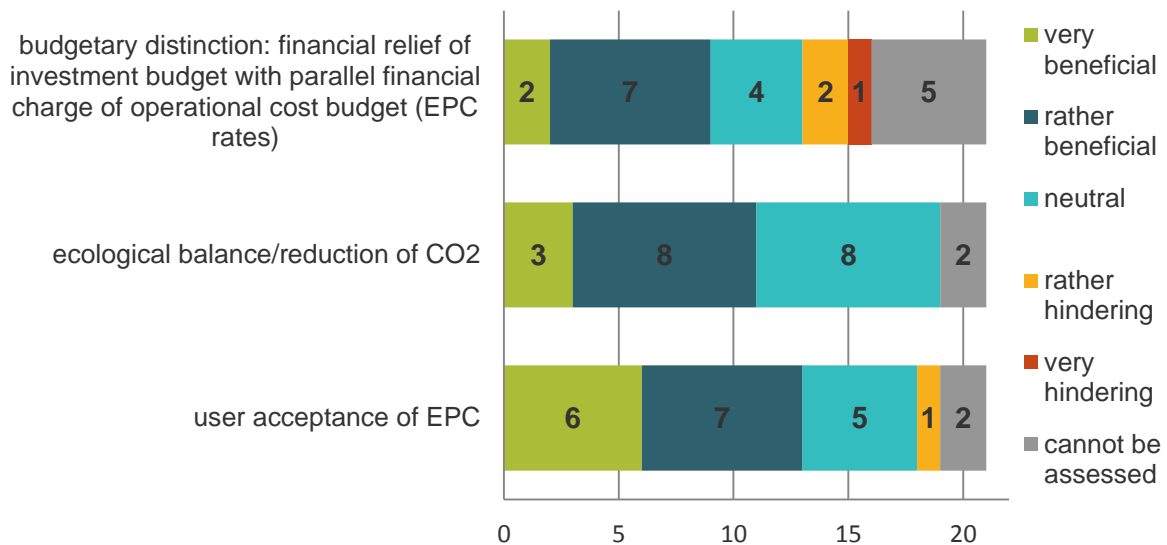
An interesting – although not surprising – finding is the contrary requirements between public and private sector:



User acceptance is an essential aspect for the implementation of EPC projects

Question: Please evaluate the subsequent aspects for the implementation of EPC projects: Note: If you cannot evaluate certain an aspect, indicate “cannot be assessed”.

Other aspects. Base: 21 answers



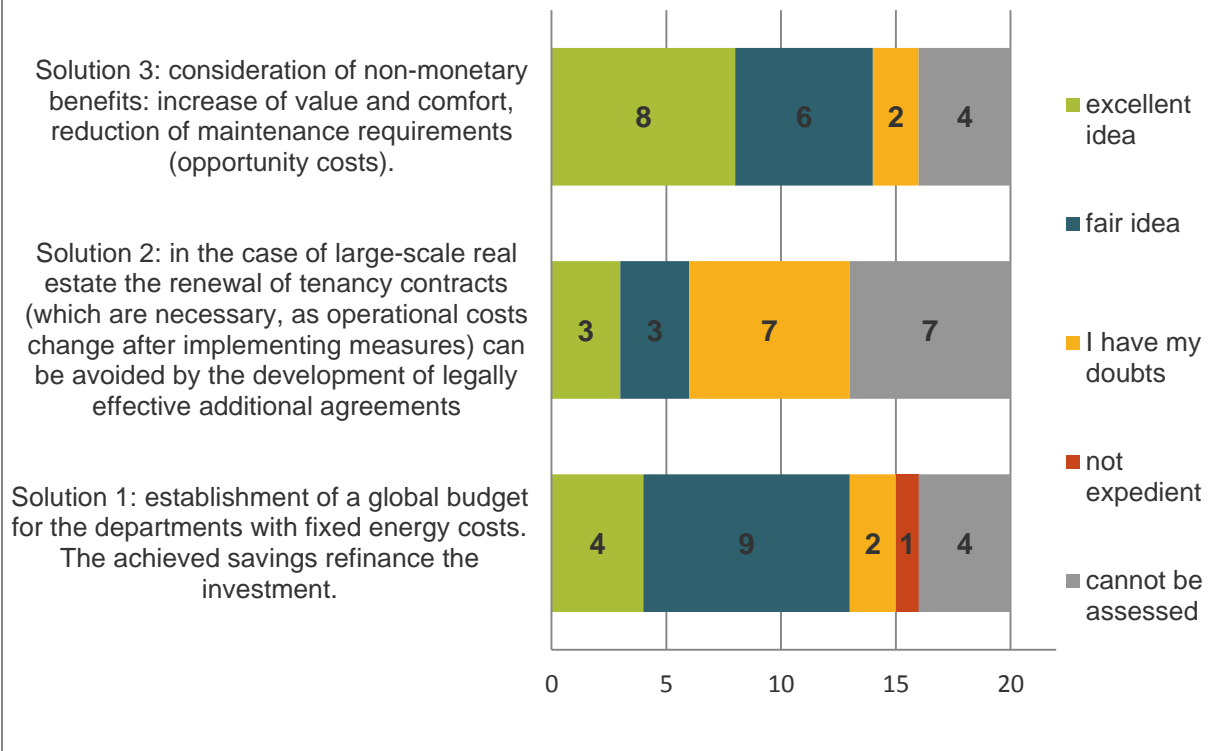
6.3. Problems and potential solutions

The development of EPC projects is facing specific challenges depending on the customer group. Those problems were presented and potential solutions offered, which were assessed by the respondents.

- **Problem 1:** Financial investment in energy efficiency measures for public institutions: The department/budget, which finances the measures does not benefit from the measures.
 - Solution Top: consideration of non-monetary benefits: increase of value and comfort, reduction of maintenance requirements (opportunity costs).
 - Solution Flop: in the case of large-scale real estate the renewal of tenancy contracts (which are necessary, as operational costs change after implementing energy efficiency measures) can be avoided by the development of legally effective additional agreements.

Problem investor vs. beneficiary: non-monetary benefits should be considered

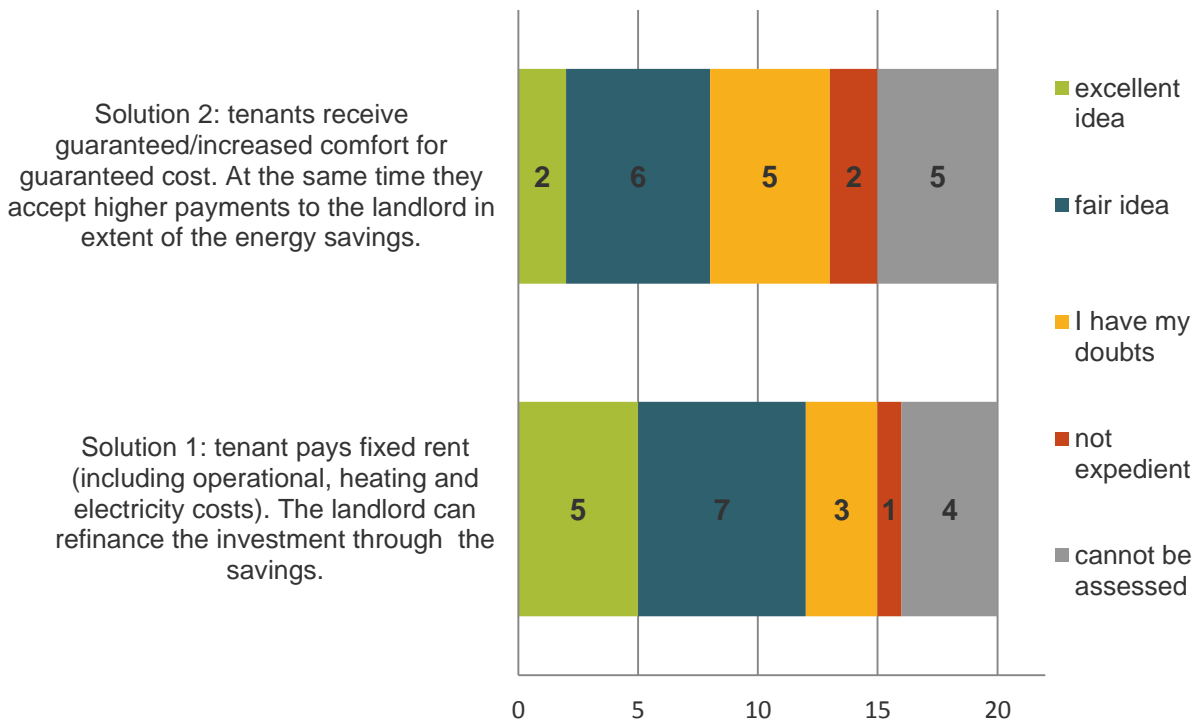
Question: The development of EPC projects is facing specific challenges depending on the customer group, which are described subsequently. At the same time, potential solutions are presented. Please indicate your evaluation of the following proposed solutions. Problem 1: Financial investment in energy efficiency measures for public institutions: The department/budget, which finances the measures does not benefit from the measures. **Base:** 20 answers



- **Problem 2:** Tenancy in commercial properties: The landlord invests in energy efficiency measures but cannot refinance those by reduced energy cost, as only the tenant benefits from energy cost savings.
 - Solution Top: tenant pays fixed rent (including operational, heating and electricity costs). The landlord can refinance the investment through the savings.
 - Solution Flop: tenants receive guaranteed/increased comfort for guaranteed cost. At the same time they accept higher payments to the landlord in extent of the energy savings.

Problem financing efficiency measures in rented commercial properties: fixed rent (including operational, heating and electricity costs) for financing

Question: Please indicate your evaluation of the following proposed solutions. Problem 2: Tenancy in commercial properties: The landlord invests in energy efficiency measures but cannot refinance those by reduced energy cost, as only the tenant benefits from energy cost savings. **Base:** 20 answers.



- Problem 2:** The behaviour of users in buildings influences the energy demand drastically. However, the change of behaviour of the user can turn out to be difficult. Solutions Top:
 - Technical solution: motion sensors, window-contact switches etc. for achieving savings without the necessity to influence behaviour of users.
 - Part of the achieved savings is paid/accredited to the user as “profit sharing”.

Problem efficiency measures and behaviour of users in rented properties: "profit sharing" of user/tenants

Question: Please indicate your evaluation of the following proposed solutions. Problem 3: The behaviour of users in buildings influences the energy demand drastically. However, the change of behaviour of the user can turn out to be difficult. **Base:** 28 answers



6.4. Highlights qualitative answers

It is evident that one reason why EPC-projects are often not developed lies in the fear of public bodies, that an ESCO could get high profit out of it. Besides to the emotional side there is also a risk in it for the public decision maker, because he/she could be accused of being wasteful with public money.

It has also been stated critically that

- Unrisky and profitable projects are implemented through in-house-solutions, while critical, risky projects are more likely to be outsourced to an ESCO
- The owner-user-structure often makes EPC (too) complicate
- The fear to loose competence is evident

Annex A: Development of energy prices in Austria

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Price natural gas - industry ¹	€-ct/kWh	0,00	0,00	0,00	0,00	2,60	2,62	3,00	3,74	3,80	3,54
Price index natural gas - industry	-	0,0	0,0	0,0	0,0	#####	#####	#####	#####	#####	#####
Price natural gas - households ²	€-ct/kWh	4,85	5,63	5,76	6,01	6,35	6,12	7,08	7,61	7,61	7,39
Price index natural gas - households	-	1,0	1,2	1,2	1,2	1,3	1,3	1,5	1,6	1,6	1,5
Price for electricity - industry ³	€-ct/kWh	8,16	8,56	9,45	10,68	11,73	11,28	11,27	11,09	11,11	10,72
Price index electricity - industry	-	1,0	1,0	1,2	1,3	1,4	1,4	1,4	1,4	1,4	1,3
Price for electricity - households ⁴	€-ct/kWh	16,73	16,22	18,96	20,19	20,95	21,44	22,06	22,38	23,44	23,26
Price index electricity - households	-	1,0	1,0	1,1	1,2	1,3	1,3	1,3	1,3	1,4	1,4
Price for light heating oil	€/ 1000 l	612,30	681,51	667,09	863,93	614,40	755,43	916,88	#####	946,63	883,96
Price index for light heating oil	-	1,0	1,1	1,1	1,4	1,0	1,2	1,5	1,6	1,5	1,4

¹ Database 2005 - 2007: Consumers with about 116 Mio. kWh (≈417.600 GJ), 330 d/a of use, 8.000 h/a of use. From 2008 on: All consumers with a consumption of 100.000 to 1.000.000

² Database 2005 - 2007: Annual consumption of households: around 23.000 kWh (prices inclusive all taxes). From 2008 on: All consumers with a consumption of 20 to 200 GJ/a.

³ Database 2005 - 2007: Consumers with about 2 Mio. kWh; maximum power consumption: 500 kW; annual use: 4.000 h/a. From 2008 on: All consumers with a consumption of 500 to

⁴ Database 2005 - 2007: Annual consumption of households: around 1.200 kWh. From 2008 on: All consumers with a consumption of 1.000 to 2.500 kWh/a. Price inclusive taxes and

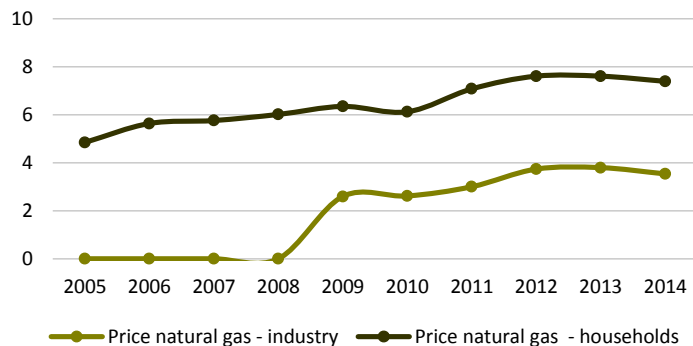
⁵ Preliminary

Resource: BMWi, 2016: Energiedaten: Gesamtausgabe

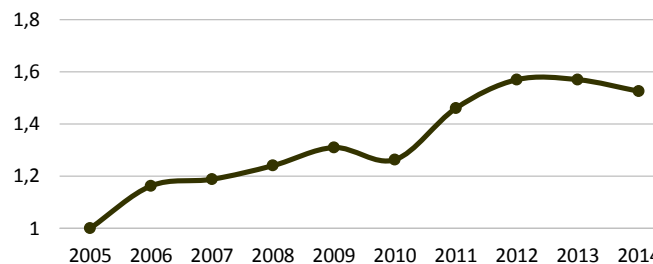
(Energy statistics see URL: <http://bmwi.de/DE/Themen/Energie/Energiedaten-und-analysen/Energiedaten/gesamtausgabe,did=476134.html>)



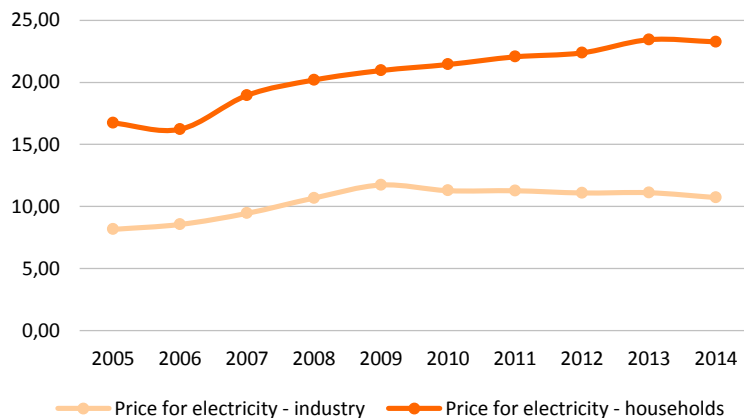
Prices for natural gas (ct/kWh), Austria



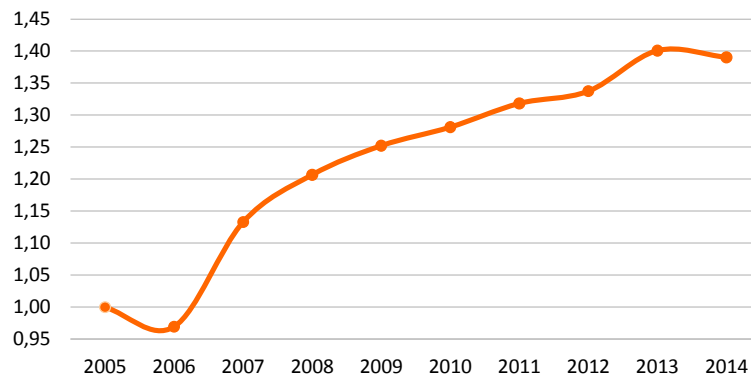
Price index for natural gas households Austria, base year 2005



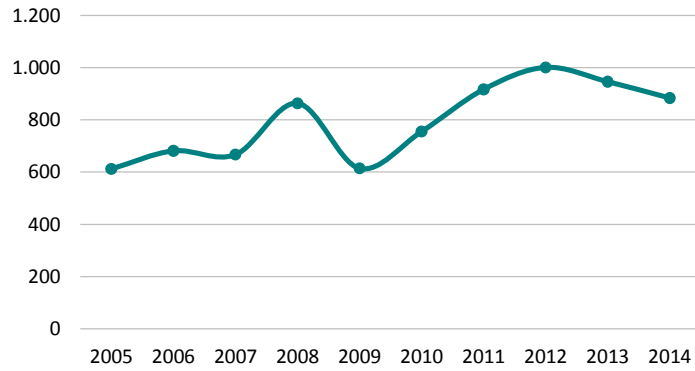
Prices for electricity (ct/kWh), Austria



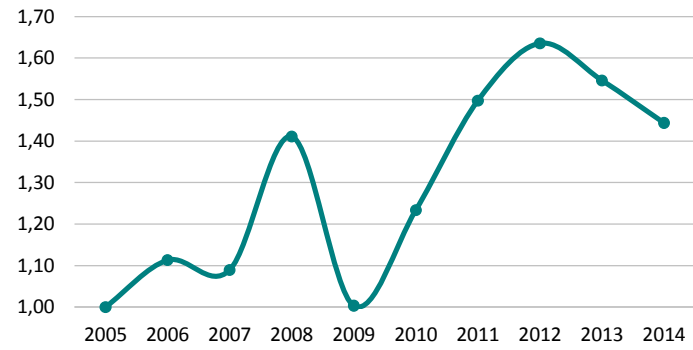
Price index for electricity households Austria, base year 2005



Prices for light heating oil (€/1000 l), Austria



Price index for light heating oil
Germany, base year 2005



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