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# REPORT

## on status quo of EPC market in the city of Antwerp

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# 1 Table of contents

<b>1</b>	Table of contents .....	2
<b>2</b>	Introduction .....	3
<b>3</b>	Conditions of EPC implementation .....	4
3.1	Potential of EPC implementation in respective city.....	4
3.2	Existing Energy Efficiency Documents for the city .....	10
3.3	Potential target groups and buildings for EPC implementation .....	10
3.4	Attitude of the local/regional authorities to EPC.....	11
3.5	Barriers in EPC implementation .....	11
<b>4</b>	Position of the EPC implementation .....	16
4.1	Existence of basic instruments for EPC .....	16
4.2	Existence of EPC (Energy Services Companies).....	16
4.3	Ability to compete .....	16
4.4	Existing of ESCO associations or other institutions.....	17
4.5	Financing and banking sector in relation to EPC projects.....	17
4.6	Existence of programmes for support of EPC .....	18
<b>5</b>	EPC projects .....	18
5.1	Realized projects .....	18
5.2	Prospective projects.....	19

## 2 Introduction

This report of the status of the EPC market was realised by Factor4 in the frame of the EESI 2020 project of the IEE-programme ([www.eesi2020.eu](http://www.eesi2020.eu)).

In Belgium, the energy policy is 'regionalised'. This means that the energy policy - including policy about EPC - is realised independently by the three regions: the Brussels, Flemish and Walloon region. In this report, we focus on the EPC situation in the Flemish region, and more particular the City of Antwerp that will realise the EPC-pilot project in the frame of EESI 2020.

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## 3 Conditions of EPC implementation

### 3.1 Potential of EPC implementation in respective city

#### 3.1.1 Substantial energy cost

##### 3.1.1.1 Energy cost of municipal activities

The City of Antwerp is with 512.000 habitants the largest Belgian City. The yearly energy cost of the **municipal buildings & public domain** (sports buildings, culture, administration,...) amounted in 2011 16,4 mio. €/year to be divided in:

- 5,4 mio €/year fuel, mainly natural gas (municipal buildings)
- 5,4 mio €/year electricity (municipal buildings)
- 4,6 mio €/year electricity ('public domain', i.e. public lighting, traffic lights,...)

The yearly fuel cost of **municipal cars, vehicles,...** is 3,3 mio. €/year in the same year. Finally we mention the substantial, yet unknown, energy cost of the following autonomous municipal units:

- The **Autonomous Company for Municipal Education** (AGSO) that includes 180 educational buildings<sup>1</sup>
- The **municipal owned buildings of the care sector** (17 rest&care homes, 40 service centres, 2486 service flats,...)<sup>1</sup>.
- The **social housing company** Woonhaven that owns 17.844 buildings at the end of 2012<sup>2</sup>.
- The **Port of Antwerp** that manages the public domain of the harbor (about 37.500.000 m<sup>2</sup>) and is owner of logistic halls etc. with a total floor surface of of more than 300.000 m<sup>2</sup><sup>3</sup>

##### 3.1.1.2 Energy cost of non-municipal services

According to the Climate plan of the City, the CO<sub>2</sub>-emission of the municipal services covers only 3,3% of the total CO<sub>2</sub>-emission (report following the standards of the Covenant of Mayors – exclusive ETS industry, aviation and maritime transport) emitted in the Antwerp territory<sup>1</sup>. So the total energy cost of the organisations and companies located on the Antwerp area is tens of times higher than the energy cost generated by the municipal activities.

#### 3.1.2 Energy saving targets of the City of Antwerp

The city of Antwerp has a very ambitious climate plan, including a CO<sub>2</sub>-reduction target of 20% by 2020 compared to 2005 for all municipal activities and a CO<sub>2</sub> reduction of 50% for the city services<sup>1</sup>: see also 3.2.1.

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<sup>1</sup> City of Antwerp (Jan 2011), Climate plan 2010-2020, approved by the town council, Antwerp

<sup>2</sup> Woonhaven Antwerpen (dec 2012), Statistical data of social houses owned by Woonhaven, Antwerp

<sup>3</sup> [http://nl.wikipedia.org/wiki/Gemeentelijk\\_Havenbedrijf\\_Antwerpen](http://nl.wikipedia.org/wiki/Gemeentelijk_Havenbedrijf_Antwerpen)

The municipal elections generated an important political shift but up to now there are no signs that the climate plan will be changed. The budget for the next governing period still has to be approved and with the current cost reductions there might be a risk involved. Officials working in the city suppose that at least a part of the energy saving targets will be maintained during the following years: see also 3.2.2..

### 3.1.3 Good organisational infrastructure

Factor4 is involved in the first two Belgian EPC-projects in public buildings: the Fedesco project (Factor4 is project coordinator) and Oostende (Factor4 is involved as EPC-expert responsible for the contracts). Out of this practical experience, Factor4 learned that the presence of a 'Good organisational infrastructure' at the client is an important, if not the most important, condition for making an EPC-project successful.

Consistent with its ambitious climate policy, the previous municipal government put in place an Energy Management Unit. This team contains senior energy experts of which some have more than 10 years of experience in the private sector. They are result oriented and have a good track record, e.g..

- The energy saving measures implemented by the team generated in the period 2009-2011 more than 5,5% (see 3.1.5) energy saving in municipal buildings & public domain.
- During the first meetings with Factor4, the team members showed being well informed about the advantages of the EPC-approach and at the same timing being aware of the challenges of the EPC-approach.

Furthermore, Factor4 received the maintenance contract used at the moment by the Maintenance Unit City of Antwerp. The quality of this document is very good and far above the average of the maintenance contract that are typically used in Belgium by public authorities. Factor didn't have a meeting yet with the responsible and expert working in the Maintenance Unit<sup>4</sup>, but the high quality is already another first good sign of the organisational quality of this separate unit that also will have to support the EPC-pilot project.

### 3.1.4 Good technical infrastructure

In 2011, the Antwerp Energy Management Unit implemented e-Sight<sup>5</sup>, a web based energy monitoring system. This energy monitoring system is according to energy monitoring experts probably one of the best systems available in the Belgian market. At the end of 2011, 108 buildings and 394 meters were already followed up with the system. About half of the meters generate detailed telemetric data that are invaluable in energy saving projects. The presence of this system will definitely facilitate the preparation of the EPC-project (e.g. collecting data for the baseline, selecting buildings,...) and reduce afterwards the cost of the M&V.

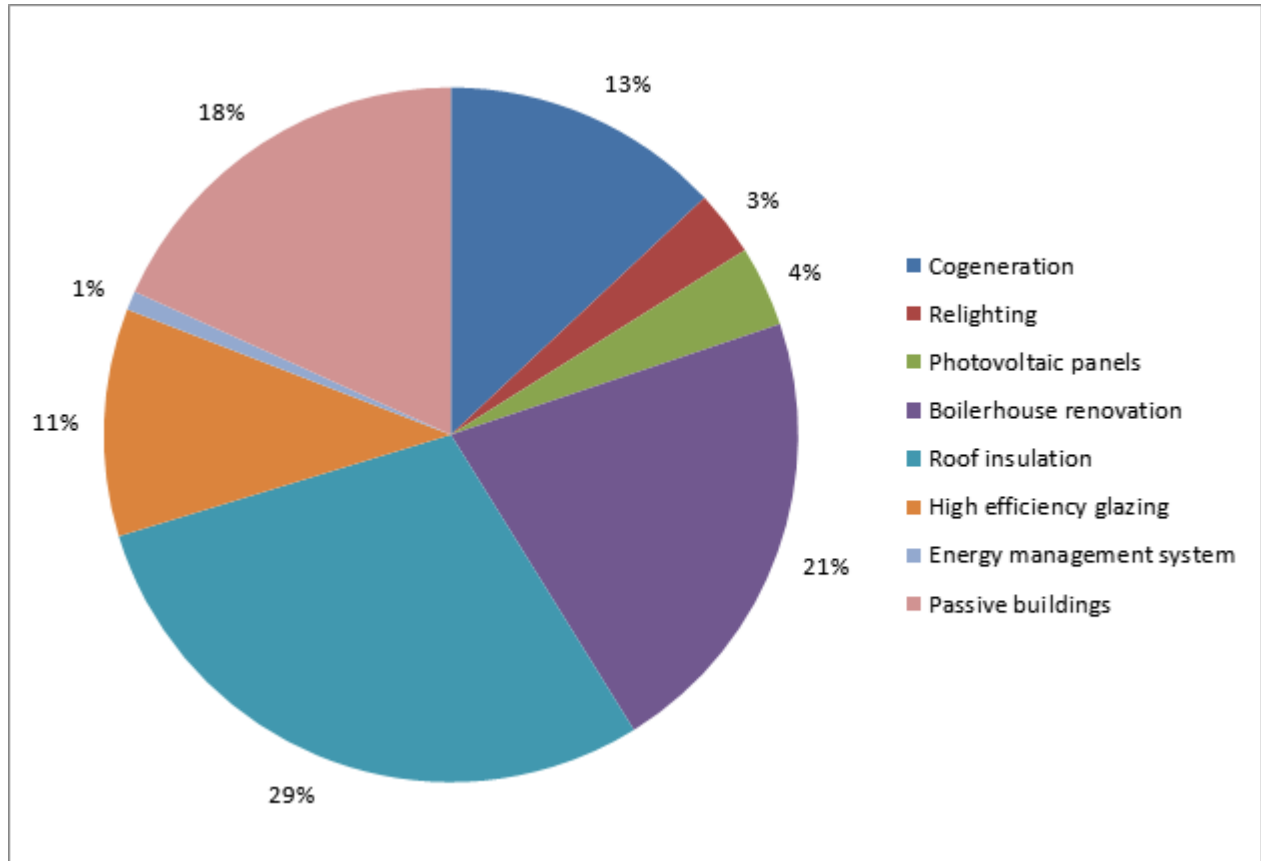
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<sup>4</sup> A meeting and EPC-training is planned for the end of august 2013

### 3.1.5 High political credibility of cost saving potential of energy saving measures/EPC

In the period 2010-2013 the city has invested **13.8 million EUR** in energy saving measures: see also Figure 1.

**Figure 1: share of different measures in total investment**

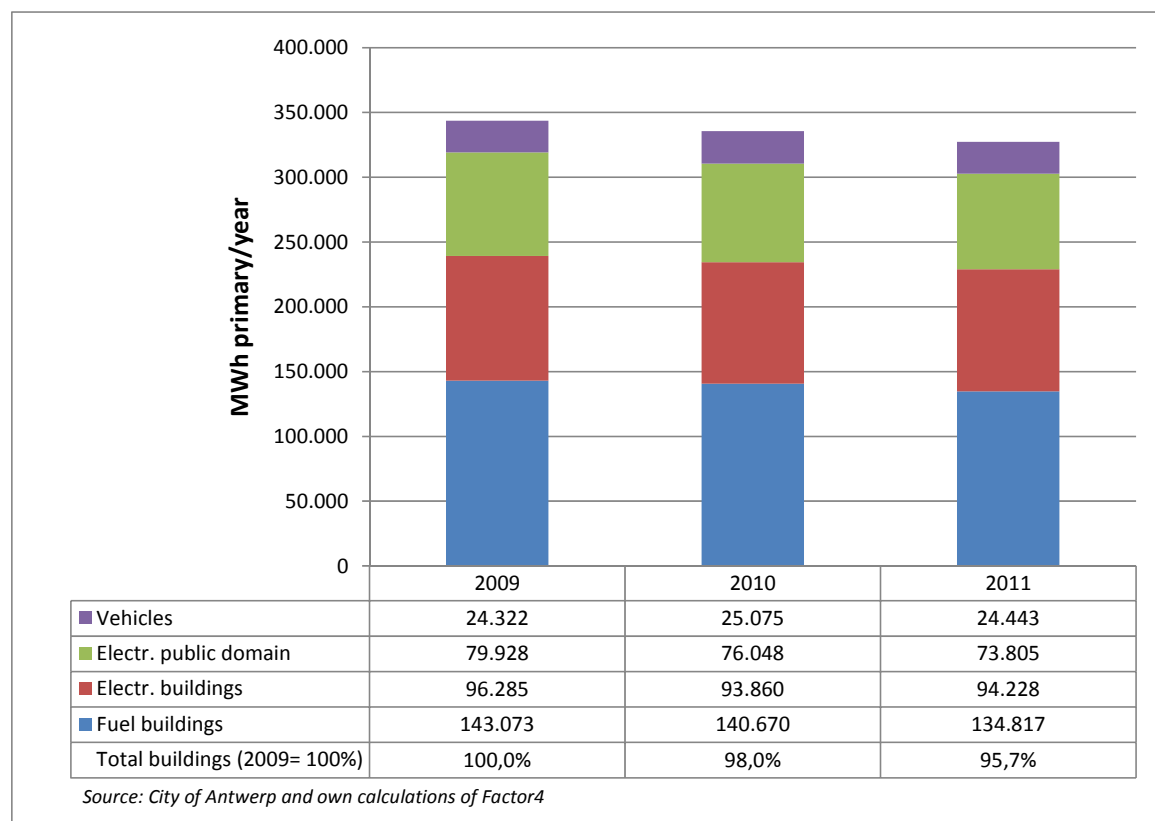


The climate corrected energy consumption of municipal buildings, public domain and vehicles dropped between 2009 and 2011 with -4,7%, from 343.608 MWh to 327.293 MWh<sup>5</sup>. The saved primary energy

- Total energy buildings: - 4,3%
  - Fuel buildings: - 5,8%
  - Electricity buildings: - 2,1%
- Electricity public domain: - 7,7%
- Vehicles: + 0,5%
- **Total:** - **4,7%**

<sup>5</sup> City of Antwerp, Energy Management Unit (nov-2012), Energy management report 2013, Antwerp

**Figure 2: climate corrected primary energy consumption of buildings, public domain and vehicles**



In 2011, the new Antwerp Museum MAS was opened and this generated an additional electricity consumption of 3,0%. Without this new museum, the saved primary energy would have been **in 2009-2011 -5,5%** (composed of total energy buildings -5,5%, fuel buildings - 5,8% and electricity buildings -5,1%). This number is a more correct estimate of the saved primary energy that is actually saved via the energy saving measures and will be used further on in the report.

The energy saving measures implemented by the energy management unit have generated a significant cost saving for the city during the last few years, and will continue doing this during the following years.

As a result of more recent investment, additional energy savings will be realised **from the year 2012** onwards.

This cost saving can be easily proven by a simple graph to non-technical politicians which increases significantly the political credibility of the argument that energy saving investment (e.g. via an EPC-project) generate cost savings. The fact that the cost saving is realised inhouse (and not somewhere abroad, e.g. Berlin) increases furthermore the credibility of the positive results of energy saving investments.

### 3.1.6 High political credibility of energy management unit

The Energy Management Unit that will have to defend the EPC-project to the political decision makers has proven to deliver (see 3.1.5). We expect/hope that the political credibility of the Energy Management Unit will further increase the approval chances for the EPC-pilot project.

### 3.1.7 Relatively good availability of investment sources for energy saving measures

The City is still paying back a loan guaranteed in the past by the higher Flemish authority. The still outstanding debt towards the Flemish government amounts in 2013 800 mio. EUR.<sup>6</sup> As a consequence of this, all investments by the City have to be formally approved by the Flemish government ("Begeleidingscommissie van de Vlaamse overheid"). Because of this ruling all expenses made by the city have to be covered by an income. The Energy Management Unit made up a financial plan which proves that the package of energy saving investments can be financed on a 20 year basis with energy savings<sup>7</sup>.

Based on this approval procedure, the Energy Management Unit succeeded in having approved its important energy saving investments during the last 4 years. The experts of the Energy management unit used a smart communication strategy. They present for each planning year (2010-2013) proposed investment in a matrix with in the X-axis the municipal buildings and in the Y-axis the proposed energy saving measures. Each measure was more over accompanied with a cost-benefit analysis and financial plan.

The same straightforward procedure is being followed for the future approval of the new investment plan for 2014-2019 and possibly the EPC-pilot project can be attached to this. Furthermore, the city is considering setting up an ELENA project and looking into ESCO services of the grid operators<sup>7</sup>.

### 3.1.8 Awareness of potential of EPC, at the level of market

#### 3.1.8.1 Demand side of the market

Since 2009, EPC was promoted on the Belgian market via a set a well-targeted dissemination actions (e.g. including a high number of presentations on conferences, initial EPC-consultations,...) in the frame of:

- Dissemination activities of the EESI- and ChangeBest project;
- EPC-promotion activities of Fedesco within the federal administration
- EPC-promotion activities of the Fedesco Knowledgecenter towards the local authorities
- Articles about EPC in specialised magazines such as EnergyMag

Because of this, decision makers of public authorities are – compared with 2009 – much better informed about the advantages EPC-concept. This increases considerably the chances for the acceptance and introduction of EPC-projects by these local authorities.

As a result of this, the demand in the market for EPC-projects starts to grow, e.g..

- The Federal Buildings Agency approved in 2011 the start of an EPC-pilot project.
- The two largest Belgian cities (i.e. the City of Antwerp and Ghent) decided in 2012 to implement in principle an EPC-pilot project, in the frame of EESI 2020 and Transparens
- Several Belgian cities expressed (e.g. Kortrijk, Geel, Etterbeek,...) their interest in starting up EPC-projects

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<sup>6</sup> DE TIJD (14 juni 2013), Metropool in moeilijkheden, <http://blogs.tijd.be/bbb/2013/06/metropool-in-moeilijkheden.html>

<sup>7</sup> FORNOVILLE, B. (30/07/2013), Interview by Johan Coolen of Boris Fornoville, energy expert at the City of Antwerp, Antwerp



- The Flemish Energy Company ('VEB', an autonomous agency of the Flemish government) plans to start EPC-projects in the buildings of the Flemish administration, most probably at the end of 2012

### 3.1.8.2 Supply-side of the market

Thanks to the dissemination efforts mentioned above, and the promotion realised by Agoria GreenBuilding Platform (energy efficiency platform of the Belgian federation of Companies) and Belesco (a federation focused on ESCO's and high level users, such as the energy distribution companies), the actors at the supply side of the market or well informed by the EPC-opportunities in the near future.

### 3.1.9 Awareness of potential of EPC, at political level

At **national political level**, Fedesco played a very important role in promoting the EPC-concept at the highest political level of the Belgian government. These promotion actions were needed also because the Belgian government finally has to approve the Fedesco EPC-projects within the buildings of the Federal ministry. The promotion actions of Fedesco were successful.

On July 17<sup>th</sup>, this Belgian Federal Council of Ministers - presided by the Belgian Prime Minister Elio Di Rupo – formally approved the launching of the procurement of the first EPC-project in a Belgian governmental/public building (the 'Fedesco EPC-project').

On **regional political level**, the level of the Flemish region, the Flemish Energy Company takes nowadays the lead in promoting EPC<sup>8</sup>.

### 3.1.10 Availability of a well-designed and innovative EPC-contract

On demand of Fedesco, a team of experts coordinated by Factor4 developed a brand new and highly innovative **Belgian EPC-contract** that meets all requirements of Fedesco, and in general the Belgian market.

The contract – branded as 'smartEPC' by Fedesco - combines the best ingredients of existing foreign EPC contracts with some innovative features. For example, the ESCO will not only be remunerated (or fined) based on the energy savings but also based on the comfort and maintenance performance:

- The comfort performance will be monitored during the project via an online comfort survey tool that the users in the building will fill out ([www.comfortmeter.eu](http://www.comfortmeter.eu)).
- The maintenance performance will be monitored via specialised software based on the Dutch standard NEN 2767.

In order to enable a large-scale implementation of the EPC-contract, an **user-friendly EPC-manual** was developed that guides client and the EPC-facilitator through the whole process of the procurement and follow-up of an EPC-project.

**Additional custom-made contracts** were also needed for solving problems generated by the complexity of the Fedesco EPC-project where not less than 9 parties were involved: 5 Ministries, the Federal Building Agency (= tendering organisation), the private building owner, Fedesco (facilitator and third party investor) and the private ESCO. One of the

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<sup>8</sup> [www.vlaamsenergiebedrijf.eu](http://www.vlaamsenergiebedrijf.eu)

developed additional contracts solved for instance successfully the well-known split incentive problem between the tenant and the owner.

## 3.2 Existing Energy Efficiency Documents for the city

### 3.2.1 Policy of the previous City Council

The previous City Council signed the Covenant of Mayors. The climate plan of the Council was very ambitious and included amongst others the following CO<sub>2</sub>-emission targets

- 50% less CO<sub>2</sub>-emission in 2020 compared to 2005 for all municipal activities (e.g. buildings of the City)<sup>1</sup>.
- 20% less CO<sub>2</sub>-emission in 2020 compared to 2005 for all other activities in the Antwerp area

### 3.2.2 Policy note of the new City Council

Amongst other things because the climate policy plan of the previous City Council was also approved by a significant part of the members of the present City Council, this plan still has some political weight. Moreover, the agreed CO<sub>2</sub>-reduction targets seems to be confirmed by the new political decision makers in a press release/article in a local newspaper in June 2013<sup>9</sup>.

In the 'policy agreement' of the new City Council, that came to power on January 1st 2013, some references are made to the need and possibilities of energy saving measures. We cite for instance<sup>10</sup>.

- "If profitable, in the long term existing school buildings will be renovated on a sustainable, ecological and energy efficient way"
- "We investigate whether, and how companies can recycle excess heat in the port area"
- "The city should give the good example, also when it concerns our environment. Therefore, the city will make its buildings more energy efficient buildings"
- "In the past Woonhaven, the social housing company of the City of Antwerp, has heavily invested in the renovation of existing houses. That effort will be continued. Woonhaven should play a pioneering role in the sustainable energy efficient remodeling and renovating of its building stock."

## 3.3 Potential target groups and buildings for EPC implementation

### 3.3.1 Public sector

The potential target groups in the public sector are mainly the following public buildings that are directly or indirectly controlled by the City:

- The municipal buildings (sports buildings, culture, administration,...)
- Public domain i.e. mainly public lighting, traffic lights
- The buildings of the care sector

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<sup>9</sup> Gazet van Antwerpen (29-06-2013), [City of Antwerp will emit less CO2 in the future](#), Antwerp  
<sup>10</sup> Governing political parties of the City of Antwerp (Dec-2012), [General policy agreement 2013-2019](#), Antwerp

- The Autonomous Company for Municipal Education (AGSO)
- The social housing company Woonhaven
- The Port of Antwerp

The mentioned target groups are described more in detail in 3.1.1.1.

### 3.3.2 Private sector

The total energy cost of the organisations and companies located on the Antwerp is tens of times higher than the energy cost generated by the municipal activities (see 3.1.1.2)..

On the **long** term, there is a very high EPC-potential in the non-municipal, mainly private sector.

On the **short** and **medium term**, this potential will be more difficult to access as there are now good EPC-contracts available for the private sector that meets the specific requirements of this sector (e.g. sufficient flexible, taking into account the faster occupancy and operational changes in private companies, etc.). For this reason, Factor4 joined an European proposal (acronym 'EPC+') towards the European Commission (IEE-programme) that has as specific objective the development of EPC in the private sector.

### 3.4 Attitude of the local/regional authorities to EPC

On the **national and regional level**, the authorities tend to understand and support EPC-projects (see 3.1.9).

On the **level of the City of Antwerp**, the administrative and operational key-persons tend to support the idea of the EPC-approach. We suppose - but unfortunately yet cannot confirm - that the new political decision makers will also support EPC-projects (see 3.2.2).

### 3.5 Barriers in EPC implementation

#### 3.5.1 Decreasing global investment resources

The investment resources of local authorities such as the City of Antwerp will significantly decrease the following years due to amongst other the following evolutions:

- In order to amongst to restore the trust of the financial markets and solve the debt crisis, the European member states agreed to decrease their debts. The resulting European austerity policy, led by Olli Rehn (European Commissioner for Economic and Monetary Affairs and the Euro) forces the member states to decrease the global Government debt. These European obligations will at their turn directly or indirectly force the municipal governments to decrease their debt.
- Another factor that will decrease the investment financial resources of the Belgian municipal governments in particular are their rapidly increasing pension expenses. Between 2016 and 2012, the pension expenses will increase from to 711 mio. EUR now to 1.000 mio. EUR in 2016<sup>11</sup>.

The implementation of an EPC-project will need the approval of the highest political decision makers in the city. During this political decision process, the investment in the preparation of the EPC-project (e.g. investment in facilitator cost) and the investment realised by the ESCO at the start of the project, will more and more have to compete with

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<sup>11</sup> INE RENSON , WIM VAN DE VELDEN EN KATRIEN VERSTRAETE (8-jun-2013), Hoe pensioenlasten slaan gemeenten plat, De Tijd (bron <http://www.tijd.be/r/t/1/id/9356610>)

other investment needs as for the resting scarce investment resources. Only investments with crystal-clear and indisputable results, preferably on the short term, will survive this competition. In spite the competitive advantage of EPC-investments in this decision process (see 3.1), the approval of EPC-projects will become more and more challenging.

### 3.5.2 Uncertainty if EPC increases municipal debt (or not)

Factor4 was informed during the course of 2012 by other international EPC-experts that due to more stringent European accounting rules, 'maybe' governmental costs related with EPC projects will have to be booked as costs that will increase at the short term the debt of the government. Our information sources mentioned two categories of governmental costs that we will discuss separately in the following paragraphs.

#### 3.5.2.1 Pre-financing by the government of the initial investment in energy saving measures

The financing of the initial investment by the government is financially the most rational as the interest rate, and thus the also the periodic payments, in case of ESCO financing is 20-29% higher compared with financing by the government: see Table 1.

**Table 1: yearly payment by the government in case of an initial investment of 1 mio. €<sup>12</sup> (€/year)**

	Interest rate (% nominal, thus including ± 2% inflation)	Yearly payment in function of length EPC- project (€/year)	
		10 years	15 years
ESCO finances initial investment of 1 mio. € (A)	9%	-155.820	-124.059
Belgian government finances initial investment of 1 mio. € (B)	5%	-129.505	-96.342
Surplus financing cost in case of ESCO financing ((A-B)/B)		20%	29%

*Source: statistics of National Bank of Belgium and calculations and estimations of Factor4 made in the frame of EESI 2020*

From a **pure economical/investor point** of view, an investment by a government that is paid back via guaranteed energy savings should not be added to the debt of the government, but

<sup>12</sup> The interest rate of ESCO is a rough and preliminary estimation by Factor4. The interest rate of ESCO's is supposed to be much higher because:

- the interest rates of private companies are by definition much higher than of governmental bodies,
- currently private companies such as ESCO's have more than in the past a lot of difficulties for getting loans
- ESCO will on top of the financing cost towards the bank add a commission and risk fee.

The interest rate of the government is the average interest rate of 3% that by economists is typically accepted as a normal real interest rate for a solvent government (as the Belgian government is at the moment) + 2% inflation target of the European Central Bank. The resulting 'rule of thumb' of 5% interest rate is roughly in line with the 4,2% financial return of the financial return on the secondary market of long term loans (>6 years) of the Belgian government between 2000 and 2012 See the table below published by the National Bank of Belgium ([www.nbb.be](http://www.nbb.be)).

Rendement van Belgische leningen op secundaire markt - geheel van de leningen Gemiddelden						
Gemiddelde werkelijke rendementspercentages (houders) van alle door het Rentenfonds gecontroleerde leningen met een resterende looptijd van:						
	1 jaar	2 jaar	3 jaar	4 jaar	5 jaar	6 jaar en meer
2012	0,34	0,79	1,12	1,50	1,83	2,96
2011	1,93	2,50	2,94	3,25	3,55	4,17
2010	0,82	1,21	1,60	2,05	2,42	3,35
2009	1,06	1,62	2,20	2,61	2,95	3,81
2008	3,81	3,80	3,91	4,01	4,07	4,40
2007	4,12	4,12	4,14	4,16	4,19	4,33
2006	3,28	3,41	3,48	3,55	3,60	3,80
2005	2,24	2,40	2,57	2,71	n.	3,36
2004	2,22	2,52	2,83	3,13	n.	4,06
2003	2,33	2,55	2,85	3,14	3,41	4,15
2002	3,50	3,82	4,04	4,25	4,44	4,89
2001	4,11	4,21	4,32	4,46	4,60	5,06
2000	4,67	4,95	5,12	5,20	5,27	5,57

<sup>1</sup> Rendement na roerende voorheffing van de leningen van 6 jaar en meer.

to the debt of the ESCO. Indeed, it is the ESCO that takes the investment risk and will anyway pay back the investment via realized energy cost savings and/or penalties for the share of the non-realized energy cost savings.

But from an administrative/juridical point of view, such a loan would - according to some international EPC-experts - may be considered a debt increasing cost.

### 3.5.2.2 Yearly payments by the government to the ESCO

The following yearly payments can be considered:

- The payments towards the ESCO as a remuneration of the pre-financing of the initial investment (only in case of financing by the ESCO)
- The payments towards the ESCO as a remuneration for the energy related maintenance costs and for the given energy savings guarantee
- The payments towards the ESCO as a remuneration of non-energy related maintenance costs. This remuneration is relevant in case the global maintenance of the building (e.g. sanitary equipment, electrical cabling, etc.) is included in the EPC-project.

In an EPC-contract, the government contractually agrees to pay during 10-15 years the mentioned yearly remuneration. European governments (mis)used in the past long term agreements with service providers as a way to invest without having to increase its debt e.g. the sale-and-lease-back of real-estate of the Federal Belgian government.

Because of these kind of financial constructions in the past, payments in the frame of long term agreements are considered more and more as 'de facto' loans by the controlling (European) financial authorities. Thus - in the worst case, according to some international EPC-experts, the (actualized value of) all payments towards an ESCO in the frame of an EPC-project could be considered as a loan... Consequently an EPC-project, certainly if the contract includes the overall non-energy related maintenance of the building, could increase on the short term significantly the debt of a government!

### 3.5.2.3 Preliminary conclusion

In the frame of the Transparens project, SEVEn generated already some helpful concrete information that gives a first clarification of the governmental accounting rules that should be considered<sup>13</sup>. The possibility that governmental costs of an EPC-project would increase

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<sup>13</sup> SEVEn (july 2013), Manual for the EPC Beginners Markets, paragraph 7.1.3 Legislative framework, Prague. We cite:

" In most of the countries, EPC projects implemented in the public sector follow usually only general legislative rules as there are often no specific rules. Thus it is often unclear how the EPC projects should be administered and process in the accounting system.

There is also an EU wide barrier coming from the Fiscal Directive (COUNCIL DIRECTIVE 2011/85/EU of 8 November 2011, on requirements for budgetary frameworks of the Member States) which lays down detailed rules concerning the characteristics of the budgetary frameworks of the Member States. As concerns national systems of public accounting, Member States shall have in place public accounting systems based on the ESA 95 standard, i.e. European System of Integrated Economic Accounts (ESA). Aggregate government deficit of the particular member is calculated based on ESA 95 standard. According to ESA 95 standards the obligation of the customer – public body to pay consideration for implementation of energy efficiency measures automatically means additional financial obligation of Member State considered as an increase of government deficit. In consequence, decision makers and legislative acts responsible for limiting the government deficits

on a short term the debt of the government concerned, will be perceived as a major disadvantage for political decision makers. It thus could become a major future barrier for EPC-projects in Belgium, and probably also the rest of Europe.

### 3.5.3 EPC is still an unproven approach in Belgium

Until now EPC is in Belgium a rather unproven approach and the procurement of EPC-projects is rather complex and new and can be perceived as risky. The best way for removing the perceived risk is the demonstration of the positive effects of EPC via pilot projects. Unfortunately the first tangible results of the few existing Belgian EPC-projects - that are still in the phase of procurement - can only be expected after some years. The fact that EPC is still an unproven approach in Belgium will unfortunately stay an important barrier in the near future.

### 3.5.4 Non-performance based energy services offered by the Distribution Grid Operators

The Distribution Grid Operators (DGO's, i.e. 'distributienetbeheerders' such as Eandis and Infrax) are mandated by the Flemish government - that is responsible for the energy saving policy on Flemish territory - to implement energy saving measures especially in buildings and infrastructure of municipalities. Although the DGO's call the provided services 'ESCO services', the supplied services are generally not performance based e.g. there are no hard energy saving guarantees. The DGO's are setting first steps in the investigation of EPC, but we suppose it will take a long time, may be several years, before they really will be capable to implement EPC-projects.

Furthermore, there are strong political and organizational connections between municipal authorities and DGO's as municipalities are shareholders in these organizations. This results in many municipalities intending to use the current non-performance based ESCO services provided by the DGO's. EPC-projects thus will have to compete with these ESCO services.

### 3.5.5 Largest energy saving potential tapped

The City of Antwerp realised in the past already successfully an important amount of energy saving measures and will continue doing that the following years. In 2009-2011, the realised energy saving amounts to 5,5% (see par 3.1.5). According to the officials of the city interviewed by Factor4, the most profitable energy saving measures, mainly 'recommissioning measures', are already implemented in the period 2010-2013. For the period 2014-2019 an investment plan has already been prepared for approval. This fact decreases the profitability of future energy saving measures and thus is also a potential barrier of EPC-projects.

### 3.5.6 Split incentive in public lighting

An important share of the **buildings** used by the City are also property of the City. The split incentive problem that could be generated by the fact that the owner differs from the tenant

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often create barriers to implementation of EPC projects, as these are contributing towards the deficit of a Member State."



will thus not occur frequently in the building sector and is expected not to be an important barrier for EPC-projects in the buildings.

On the long term, we expect an important EPC-potential in **public lighting and traffic lights** (see par. 3.3.1). In this specific domain, the split incentive problem can occur more easy as the investments in public lighting are controlled and paid by the 9 autonomous local 'districts' while the energy costs are paid by the City of Antwerp. The risk on split incentive problems is increased as in districts often other political parties are governing as on the city level.

## 4 Position of the EPC implementation

### 4.1 Existence of basic instruments for EPC

The basic instruments for implementing EPC-projects are available (see also 3.1.10):

- an EPC-contract and EPC-procurement documents
- an EPC-manual
- a set of contracts that fix the agreements and remunerations in case of different building user, owner-tenant problems, etc.

### 4.2 Existence of EPC (Energy Services Companies)

The 'typical' multinational ESCO's and maintenance companies, that are capable providing EPC-projects are present in Belgium, e.g.

- TPF Utilities
- Sophia group
- Axima Services
- Cofely Services
- Dalkia
- Cegelec
- Siemens
- Johnsons Controls
- Honeywell
- Schneider
- ABB

Furthermore, there are some local players with innovative EPC-contracts, mainly focused towards the private sector, active on the market such as REUS and Factor4.

### 4.3 Ability to compete

The demand to EPC-projects is still very low, almost zero as there are almost no EPC-projects tendered. The number of potential EPC-suppliers/ESCO's at the other hand is pretty big.

We expect a **lot of competition** for the few EPC-project that will be tendered in the following years, as the ESCO's will want to build-up reference projects.



As for the **procurement procedures**, the commonly used procedures in Belgium, following EU directives are

- **Open procedure:** An open procedure is an unrestricted selection procedure, where tenders may be submitted by anyone who wishes to submit a tender.
- **Restricted procedure:** an unrestricted number of suppliers is invited to submit an application to join a restricted procedure. Interested parties submit an application together with proof of qualification. A tender may be submitted only by parties who have demonstrated their qualifications.
- **Negotiation procedure with publication:** an unrestricted number of suppliers is invited to apply in a negotiation procedure with publication. Only selected bidders can submit bids that are then negotiated. The aim of the negotiations is to achieve the performance of public contracts under the most advantageous conditions possible. The contracting authority may gradually reduce the number of bidders with whom it is negotiating.
- **Negotiation procedure without publication:** The contracting authority directly invites one or more suppliers to negotiations. This type of procurement procedure may be used only in cases strictly defined by law (if there is only supplier capable of fulfilling the public contract, in case of an extremely urgent situation, ...)
- **Competitive dialogue:** applicants are asked to submit a request to participate in the procedure and to demonstrate their qualifications. After assessing the qualifications of the applicants the contracting authority invites these applicants to participate in the competitive dialogue with the aim of finding one or more suitable solutions for fulfilling the public contract. The contracting authority assesses the proposed solutions and decides which ones are suitable. Finally, all of the interested parties originally are invited to submit tenders for the implementation of the solution chosen by the contracting authority.

As for EPC projects in Belgium, the Negotiation procedure with publication is used, as it is concerns complex projects with budget that are difficult to estimate in advance.

#### 4.4 Existing of ESCO associations or other institutions

We consider the following ESCO associations (see 3.1.8.2):

- Belesco
- Agoria Green Building Platform

#### 4.5 Financing and banking sector in relation to EPC projects

In the past, **Dexia** took the lead in financing governmental projects. In 2009, EPC-experts of Factor4 had a meeting with them about EPC and they showed their interest in financing EPC-projects. Unfortunately, Dexia was severely hit European sovereign debt crisis in 2011 and had to be reorganised completely and split up in different companies. EPC is not on the agenda now.

**Other banks** are interested in EPC (e.g. BNP Paribas is member of Belesco) but our impression is that they wait deploying financing activities until the first EPC-projects will be tendered.

## 4.6 Existence of programmes for support of EPC

There are currently no programmes for support of EPC present.

## 5 EPC projects

### 5.1 Realized projects

Table 2 presents an overview of energy saving projects in the Flemish region that are communicated as being EPC-projects and of which some information was available at Factor4. The projects marked with a \* (2 + 21 schools) are energy saving projects of which we received enough information to confirm that they are real performance based EPC-projects. For the other projects, the situation is more unclear as we don't have enough information.

**Table 2: overview of energy savings projects , that are communicated as being EPC-projects, in the Flemish region**

Project	ESCO	Sector	Period	Quantitative parameters
Alost Hospital	Siemens	Hospital	2004-...	n/a
EHSAL school	Honeywell	Education	n/a	n/a
Henri Wintermans	Honeywell	Industry, cigars	n/a	n/a
OCAS, R&D-centre*	Siemens	Industry, R&D metal	2009-...	Conditioned space: ± 15.000 m <sup>2</sup> Results: oil saving of 21%
Samsonite	Honeywell	Industry, travel bags	n/a	n/a
Sint-Vincentius Hospital	Honeywell	Hospital	n/a	n/a
Uitgeverij Averbode*	Factor4	Office and logistics	2013-...	Size of project: <ul style="list-style-type: none"> <li>• 5.800 m<sup>2</sup> floor surface</li> <li>• Energy cost: 70.000 €/year</li> </ul> Expected results with 'no cure no pay guarantee': <ul style="list-style-type: none"> <li>• 10% energy savings, mainly via recommissioning measures</li> <li>• Increase of thermal comfort performance with 10% (as will be verified via Comfortmeter)</li> <li>• IRR (=financial return): 40%</li> </ul>
21 schools*	REUS	Education	2005-2010	Size of the projects <ul style="list-style-type: none"> <li>• 21 School Buildings in the Flemish region</li> <li>• 90 Boiler Rooms</li> <li>• 16 circuits max per building</li> <li>• Investment &lt; 60.000 EUR/building</li> </ul> Results <ul style="list-style-type: none"> <li>• Payback Time &lt; 2 years</li> <li>• Average fuel saving 21% (maximum obtained = 65%)</li> </ul>

## 5.2 Prospective projects

Table 3 presents the EPC projects are expected to be tendered during the following few years. They will be procured via a smartEPC contract of Fedesco (see 3.1.10).

**Table 3: overview of new EPC-projects in the Flemish and Brussels region**

Project	Expected start of contract	Comment
Fedesco 1 (Fedimmo)	2014	
Fedesco 2	2015	
Ostend	2014	
Ghent	2015	In the frame of Transparens
Antwerp	2015	In the frame of EESI 2020