

## Partner Questionnaire

Region: Berlin / Brandenburg

Partner: Berlin Energy Agency (BEA)

### 1. How can EPC affect local level (SEAPs and other energy plans) and National level energy efficiency targets?

#### Answer: Berlin Example

On the federal level, Germany has adopted with its Energy Concept<sup>1</sup> the following national energy and climate targets:

	until 2020	until 2050
Reduction of GHG Emissions (base 1990) by	40%	80%
Primary energy savings (base 2008) by	20%	50%
Reduction of power consumption (base 2008) by	10%	25%
Reduction of heat demand in buildings (base 2008) by	20%	80%
Doubling of modernization rate (up to 2% p.a.) to achieve nearly carbon-neutral building stock by 2050		

To achieve the 20% reduction in primary energy consumption by 2020 and halve it by 2050, the German Federal Government launched a comprehensive strategy in December 2014: the National Action Plan on Energy Efficiency (NAPE). Within the NAPE chapter "Energy conservation: a business and earnings model", a number of short- and medium-term measures are being introduced. Two measures are directly aimed at promoting the energy performance contracting model in Germany:

- Promoting contracting with deficiency guarantees: programme of bank guarantees for SME EPC providers (to be started in 2016)
- Project developers for energy savings contracting: Funding scheme for SMEs and municipalities to pay for EPC facilitation services

This underlines the relevance and the role which is being attributed to energy services in German energy policies. Although Germany has a growing market for Energy Services and is one of the pioneers for developing the European market for Energy Performance Contracting (EPC), the market growth in recent years has remained below expectations.

Reasons for this are that the national energy legislative framework in Germany is still incomplete and only limitedly supportive for EPC. Existing relevant legal frameworks, e.g. regulating public

<sup>1</sup> "Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung", September 2010, [www.bundesregierung.de](http://www.bundesregierung.de)

procurement are not directly addressing EPC projects, causing different interpretations and therefore imposing barriers to straightforward implementation of these projects.

Still, there is an immense economic usable potential with about 1.4 million buildings or objects for Contracting (EPC and ESC) in Germany.

The Federal State of Berlin has adopted even slightly higher climate targets than Germany:

	until 2020	until 2050
Reduction of GHG Emissions (base 1990) by	40%	85%

With the "Energy Concept 2020"<sup>2</sup>, which is also the Sustainable Energy Action Plan (SEAP) of Berlin in the context of the Covenant of Mayors, possible scenarios were described for the development of energy supply and energy demand in Berlin until 2020. To reduce the final energy demand from almost 70 TWh (2005) down to less than 63 TWh (2020), the largest part of the reductions has to take place in the heating demand (from 40 TWh down to 36 TWh).

Among a large number of measures described, energy services and especially the successful regional EPC programme of the Berlin Energy Saving Partnerships (ESP) received special attention in the document.

Within the ESP, 27 building pools with a total of 545 facilities with more than 1,600 buildings have been modernised with the EPC model since 1996. The average savings guaranteed are at 25.5%. The budget relief for Berlin has reached 2.8 Mio € per year. Overall investments of almost 55 Mio € have been realized by the involved ESCOs since the start of the programme. The CO<sub>2</sub> savings today add up to 73.000 t/a.

In 2014/15, Berlin developed in an integrated process involving also relevant stakeholders the "Berlin Energy Concept (BEK)"<sup>3</sup>, lining out a large number of measures to be followed in the upcoming years. Formal adoption of the concept is expected in early 2016.

The BEK describes a regional energy saving potential through EPC of more than 250.000 MWh/a in 2020 and more than 360.000 MWh/a in 2030 (up from 200.000 MWh/a in 2005). In 2015, the savings level already achieved was at 228.000 MWh/a within the Berlin Energy Saving Partnerships (ESP).

In Berlin, the ESP programme, which focuses completely on public buildings, accounts for ca. 3,5 % of the overall energy savings envisaged for the complete city (all sectors included).

<sup>2</sup> iÖW & BEA: "Energiekonzept 2020", Berlin, April 2011

<sup>3</sup> Für ein klimaneutrales Berlin: Entwurf für ein Berliner Energie- und Klimaschutzprogramm (BEK), Berlin, 2015.

As of today, a similar percentage cannot be expected for the federal level. EPC is working well only in 8 of the 16 German federal states, with Berlin as the most successful region.

In the German public sector, the annual saving potential through EPC is estimated at €300 million. This figure is based on expected average savings of 30 % energy costs in around 20,000 public buildings which are actually well-suited for EPC (regarding building size, age, property conditions etc)<sup>4</sup>. However, to reap this potential, the market development of EPC would have to increase much stronger in the future compared with current levels.

## 2. Discuss the most prevalent barriers you have experienced whilst implementing EPC in your region/city, organising your answers under the following headings:

### • Financial Barriers

Financial barriers – here understood as difficulties of ESCOs to finance EPC projects – are not a major issue for the mainly large EPC providers active on the German market. In Berlin and many other regions in Germany, public clients agree to allow the use of forfaiting for the financing of EPC projects, which is also the preferred financing option among the ESCOs.

### • Administrative Barriers

Pooling of buildings:

- While the size of the Pool 27 project with ca. 60 buildings improves the project's economics, the large number of buildings also poses a challenge for the measurement & verification process. Also the survey of the property data is very time-consuming.
- As some buildings were renovated in earlier pools before, identifying economically sound measures was difficult in some of the buildings.

In the Potsdam project, the examination of the standard contract by the clients law office and the subsequent specific adjustments were very time-consuming (first EPC of this client).

### • Policy/regulation Barriers

Policy as tenant/user of the buildings could have had objections against EPC and stop the project (which fortunately was not the case). But the contract review through in house council of the client took a very long time (1 month delay in project procedure)

Among the many EPC projects realised, there have of course been cases of disagreements between client and ESCO. While most of these conflicts could be resolved, these cases do get known among

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<sup>4</sup> Deutsche Energieagentur: Contracting-Potenzial in öffentlichen Liegenschaften. Marktstudie zur Potenzialbewertung in Liegenschaften des Bundes, der Länder und Kommunen (2007)

relevant stakeholders and public building owners. Sometimes these cases are being used in discussions by some stakeholders to discredit the idea of EPC.

The political issue behind it is the question whether a public authority should principally allow to outsource parts of the responsibility for the public buildings to external private agents, who are making a business with these services. Wherever or whenever this political position is (too) strong, it will be very hard to initiate concerted EPC programs.

- **Knowledge Barriers**

EPC procurement procedures, contracts, public budget financing legislation and accounting are perceived very sophisticated. Many decision makers can hardly grasp what EPC entails, and hence are not in a position to judge the benefits of outsourcing energy efficiency services for their institutions/enterprises specifically. On the other hand, some potential customers have unrealistic expectations of energy and cost savings potentials and are disappointed when they face ESCO proposals not meeting these expectations. Not all clients originally selected buildings are actually suitable for an EPC project.

- **Other Barriers**

In the project "Pool 27" the majority of the buildings is already in their second EPC project. This made the tender much more challenging for the bidding ESCOs. And it is the reason that with 20% the energy savings guaranteed are clearly below the average of 25.5 % among all the other 26 building pools of Berlin.

Another challenge in "Pool 27" is the large size of the project with 59 buildings. The bidding ESCOs naturally focused in their offers on measures in the larger facilities. At the same time, district representatives had the expectation that in most of the 59 buildings measures (e.g. boiler replacement) would be included in the EPC. For some of the smaller buildings, the ESCOs offered only minor or no measures, which resulted in disappointments on the side of the building users.

In Berlin in general, the further development of the ESP programme has slowed down in recent years. Only a few new projects were added to the existing building pools. An important factor is here, that already a considerable share of those public buildings which are well-suited for EPC have been integrated in the programme. Furthermore, due to less strained public budgets and favorable loan conditions, EPC compared to self-modernization has become less attractive.

### **3. In relation to the barriers outlined, please suggest your preferred solution or policy recommendation.**

#### **Answer:**

In the region of Berlin / Brandenburg, the potential of EPC is well-proven in many successful examples. While a large part of the public building stock has already been through at least one EPC project, the challenge today is how to address the remaining public buildings with EPC.

As the responsible stakeholders (mainly on the level of the Berlin districts) are today – supported by improved public budgets and very low interest rates – less inclined to opt for EPC, it is recommended to address especially the demand side, e.g. by

- Making it mandatory for every public building of a certain minimum size to assess in an audit (EPC check) the suitability for EPC.
- A similar check should also be mandatory for buildings from completed EPC projects to encourage follow-up EPC projects (as with Pool 27).
- To allow for combinations of EPC with building refurbishment measures (EPC plus), regulations to allow for providing subsidies of the building owner to EPC projects should be provided for

#### **4. Discuss the most prevalent success factors you have experienced whilst implementing EPC in your region/city, organising your answers under the following headings:**

- **Financial success factors**

In the case of the two EPC pilot projects in the Berlin/Brandenburg region, forfeiting was used in both of them. A subsidy from the building owner was not necessary in either project.

- **Administrative success factors**

In Berlin, the working group of the public energy managers (from Berlin and its districts) meets regularly to discuss various topics concerning energy efficiency issues among public authorities of the region. This working group, which is also the EPC task force within EESI 2020, is a good forum for the exchange of regional experiences and for discussing new EPC projects.

Another success factor in Berlin must be seen in the extensive experience with EPC among institutions (regional and district administrations) and decision makers. In the case of "Pool 27", this was already the 4<sup>th</sup> EPC project implemented in the Berlin district of Steglitz-Zehlendorf.

- **Policy/regulation success factors**

In Berlin, the ESP programme and its further development, which is running successfully since almost 20 years, is explicitly referred to in the two most important energy policy documents of Berlin, the "Energy Concept 2020" of 2011 and the "Berlin Energy Concept (BEK)" of 2015.

An important advantage for EPC in Berlin is the fact that in the ESCO rates are being treated as operating costs (OPEX) in the City's books. So contrary to most other regions in Germany, EPC can be realised as off-balance projects in Berlin.

With the federal funding scheme "Project developers for energy savings contracting", there is now financial support for project facilitation available in municipalities throughout Germany. Although

similar subsidies had been granted on municipal level in case-to-case decisions, the existence of the federal programme improves the frameworks clearly.

In both pilot projects, regional climate and RE policies encouraged the clients to also include RE measures in the EPC projects (as mandatory measures), even though they were not sufficiently economic. Fortunately, the measures could be included without problems, as the projects offered sufficient saving potentials in other areas to compensate for this.

- **Knowledge success factors**

Client's experience from previous EPC project is enormously helpful in the preparation phase and also reduces the general efforts.

The long track-record of successful EPC projects in Berlin ensures, that there is a fairly good understanding among public institutions about how EPC works and that it really delivers savings. At the same time, this does not completely prevent that especially on the level of individual building users (e.g. school directors) there can be massive opposition towards EPC.

The integration of experienced consultants and project developers (such as BEA) as neutral EPC project facilitators can help to avoid misunderstandings about EPC and lead the parties through the complex process.

- **Other success factors**

In the pilot project "Potsdam Eiche", the level of guaranteed savings of 52.8 % is very high, as a very economic CHP system could be included. This allowed to also implement a 80 kWp PV system (which on its own would not have been economic), so that very attractive energy cost savings could be achieved.

## **5. In relation to the success factors outlined, please elaborate on why these factors were of particular importance.**

### **Answer:**

Every EPC project has the challenge to convince several stakeholders to significantly change the way they work with their buildings, which often results in resistance against the EPC model. Having proven models of success with almost 30 projects implemented successfully in the region is the best possible argument and support to advocate EPC also among other building owners.