TRUST EPC SOUTH

D4.7 EXECUTIVE SUMMARY OF NATIONAL ROADMAP - FRANCE

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PROJECT SUMMARY

Achieving the European Union's 2020 **energy efficiency** targets and at the same time reducing its dependency on energy imports is a huge task that requires **innovative approaches and tools** – such as the ones Trust-EPC-South wants to provide.

The **Trust-EPC-South** project aims to **unleash the market's potential** for private **Energy Efficiency Investments (EEI)** in **Southern Europe** by developing new financial instruments which are backed by an established rating methodology. These instruments shall not only allow tearing down barriers in energy efficiency investments through a standardized methodology, further they shall support energy service companies (EPC Providers) and link to the financial markets.

Trust-EPC-South, a project **financed by the European Union's Horizon 2020 programme**, poses itself the ambitious objective to support companies that operate in the energy services sector in **Portugal, Spain, France, Italy, Croatia** and **Greece**. The project consortium, led by the Spanish firm CREARA, is composed by interdisciplinary experts representing the participating countries and by the international non-profit organization "Green Rating Alliance"; the partners are united by the common intent to **stimulate investments in the target markets**, which are offering great opportunities for energy efficiency as well as energy performance contracting.

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ACCRONYMS

ADEME: Agence de l'Environnement et de la Maitrise de l'Energie – Agency of the Environment and Energy Conservation

AICVF: Association des Ingénieurs en Climatique, Ventilation et Froid (Association of Engineers in Heating, Ventilation and Air-Conditioning)

CEE: Certificats d'Economies d'énergie (Energy savings Certificates)

COP: Conference of Parties to the United Nations Framework Convention on Climate Change

EE: Energy Efficiency

EPC: Energy Performance Contracting

ESCO: Energy Service Companies

EU: European Union

GREPCon: Green Rating for Energy Performance Contracting

LTECV: Loi sur la transition énergétique pour une croissance verte (Law on the Energy Transition for a Green Growth)

MWh: MegaWatt hour

ROI: Return on Investment

SEIN: Société d'Encouragement pour l'Industrie Nationale (Society for national industry support)

SERCE: Syndicat des entreprises de génie électrique et climatique (Union of electrical et climatic engineering companies)

SME : Small and Merdium Enterprises

TWh: Terawatt hour

SCOPE

This roadmap is targeted to a large audience, which includes in particular decision makers and regulatory bodies, EPC providers and facilitators, as well as financial institutions and asset owners interested in investing/engaging in energy efficiency. It has been designed using a collaborative approach, drawing on the findings of various activities and especially the following:

- **Pilot projects**: within the scope of Trust EPC South, 9 pilot projects were selected in France and benefitted from an energy efficiency audit and financial assessment, using the GREPCon tool. These assessments led to concrete recommendations, focusing especially on the scope for EPC implementation and the potential mechanisms for funding energy efficiency in buildings of various sizes and use (education, hospitality, commerce, leisure, logistics).

- **Interviews with stakeholders**: over 100 national stakeholders of the EPC and EE sector in France were consulted and their feedbacks and experience collected in various documents, such as the market analysis and other reports produced within the frame of the project Trust EPC South (these reports can be consulted on Trust EPC South website).

- **Consultations with stakeholders** through meetings of the national discussion platform set within the project, which gathers EPC providers, EPC facilitators, asset owners, funding institutions, etc. Three meetings were held in Villeneuve Loubet, Nice and Sophia Antipolis (Alpes Maritimes) in March 2016, April 2017 and February 2018, within the premises of ENERGIES 2050 and of the Chamber of Commerce Nice Côte d'Azur (*2), respectively.

- **Organisation of side events** at the occasion of international and national events related to energy efficiency, such as COP21 in Paris, COP23 in Bonn, energy related events across France and Europe, etc.

- **Capacity building workshops:** three workshops were organised with relevant stakeholders in Lille (October 2016, in collaboration with AICVF and ADEME) and Paris (*2: October 2017, in cooperation with GEO PLC and SEIN, and May 2018, with GEO PLC and SERCE). Feedbacks from participants were collected, and these feedbacks were used for drawing this roadmap.

- **Numerous bilateral meetings** organised between ENERGIES 2050 and key stakeholders during the whole duration of the project.

- **Desk based research** on EPC and EE in the tertiary sector.

EPC MARKET ANALYSIS

Key characteristics

The energy efficiency market is potentially high in the tertiary sector. Based on some studies, the scope for energy consumption reduction in tertiary buildings was estimated at 37.5%, (81.4 TWh) through active solutions, representing an investment of €7 billion a year[1] and an average return on investment period of 7 years. Budget for thermal refurbishment of buildings in the tertiary sector was estimated at €1745 billion[2]. For EPC specifically, some studies evaluated the EPC's market potential (all sectors) for France at €75-100 million per year[3].

Estimated potential energy savings generated in tertiary sector buildings through active solutions[4]

Segment	Percentage of total consumption	Estimated savings in TWh	% of total savings	Cost per MWh saved	Average ROI period (y)
Commerce	30%	13.9	17%	27€	6
Offices	55%	27.9	35%	14€	3
Education	60%	12.8	16%	31€	7
Health	40%	9.3	12%	25€	6
Sports-culture-leisure	30%	16.3	20%	32€	7
Hotels-Restaurants	40%			24€	6
Community housing	35%			44€	11
Transport	30%			20€	4
Total	37.%	80.2	100%	-	-

Estimated annual investments necessary for buildings' thermal refurbishment (horizon 2050)[5]

	Surface (Million m²)	Annual budget for global refurbishment, over a period of 35 years, in billion €/m²	Total annual budget (billion €)	% total budget
Individual houses (built before 1975)	830	3.87	3212	31.3%
Individual houses (after 1975)	886	4.13	3659	35.6%
Collective housing (bef. 1975)	530	2.12	1124	11%
Collective housing (aft. 1975)	345	1.38	476	4.6%
Tertiary public (State)	65	0.22	14	0.1%
Tertiary public (local authorities)	111	0.37	41	0.4%
Tertiary private	724	2.41	1745	17%
Total	3491	2.94	10271	100%

[1] Merit Order de la filière éco-électrique, 2014
[2] Legrand et al., 2014
[3] Bertholdi et al., 2014, from various sources
[4] Merit Order de la filière éco-électrique, 2014
[5] Legrand et al.,2014

The EPC market, however, seems to meet numerous roadblocks. These types of contracts are often applicable to a specific market, for asset owners with very large energy consumption (over 200 thousand €, according to feedbacks) and high investments capabilities. This is due in particular to the inherent complexity and costs of EPCs (compared to turnkey projects).

Still, best practices already exist in the tertiary sector (e.g. in the commerce segment) from which lessons can be learnt. EPC can also be found in the public sector or the industry, where energy consumption is high. The national legal framework can be complex for EPC contracts, and national regulations could be more supportive, but these do not seem to act as a significant barrier to the development of EPCs, at least for large scale projects and for major EPC providers.

Market challenges

Roadblock identified	Stakeholder concerned	Comments
Financial		
Lack of financial capacities	Asset owners and EPC providers	Energy efficiency is not a priority objective in a difficult economic context and the means to invest in such projects are usually low, both in terms of financial capacities and time.
Return on investment is too long / Low energy price	All	It remains difficult to invest in energy efficiency projects, especially as the price of energy remains too low and act as a desincentive for EE investments.
Costs of EPCs	Asset owner, all	Compared to a turnkey projects, and for similar measures, the cost of an EPC is often superior. This additional cost is especially linked to the management of risk from the EPC providers, and the service it offers in terms of follow up and monitoring. It makes the implementation of EPC in medium scale project more unlikely, and is often an incentive to move towards turnkey projects for asset owners, even if there are no guarantees on savings.
Split incentives	Asset owner	In the case of a building under tenancy, there is a lack of incentives to invest as benefits will go to the tenant (reduction of charges) and costs will incurred to the owner. This is true for office buildings which are often rented to a range of companies, which also make the decision process more complex.
Regulatory		
Lack of support from national legislation	EPC providers	Some EPC providers mentioned a lack of support from national authorities, compared to other solutions such as renewable energy

		or compared to the numerous support mechanisms for EE in the domestic sector.
Risk management	EPC providers	EPC contracts involve financial but also legal and technical risks for EPC providers, especially in the case where it funds the investment and guarantees the efficiency of measures implemented.
Technical		
Complex contracts drive asset owners away and costs up	Asset owners and financial institutions	EPCs have an inherent complexity that may be hard to apprehend for asset owners and financial institutions, but also for inexperienced EPC providers.
Difficulties to anticipate future energy savings	EPC providers	Anticipating future energy savings, and guaranteeing these savings, can be a complex task especially as it also relies on buildings' users behaviours.
Knowledge		
Need confidence in the assessement of savings	All	Real savings depend on several factors including external climate, building owners' behaviours, etc. These savings are assessed by EPC providers using formulaes that may not be clearly understood by other involved stakeholders. A strong communication and trust between parties is here necessary, along with a pedagogical approach from the EPC provider.
Preference for turnkey projects	Asset owners	This preference is not only driven by the additional cost of EPC but also by the lack of willing to engage in a long term contract with another Party and fear of potential lock-in effects. It is also due to the apparent/real complexity of EPCs.
Lack of knowledge in energy efficiency	Asset owners and financial institutions	This lack of technical knowledge can impede the development and funding of energy efficiency project in general and in particular of EPC that are more complex than traditional turnkey projects.
Other		
Lack of visibility over the future of companies	All	Some clients are reluctant to engage themselves in a contract of a few years or more, as they do not have enough visibility on their future.
Lack of trust between parties	All	EPC contracts require a good level of collaboration and trust between parties involved.

TRUST-EPC-SOUTH RECOMMENDATIONS

Through the dialogue with market stakeholders, especially debates within national discussion platforms, etc., several measures have been defined and formulated, as shown in the following table. Alongside the list of measures, barriers are presented that are at least partially addressed by the defined measures.

Identified measure	(Partly) addressed barriers
Training and capacity building	Lack of knowledge in EPC and trust between Parties High transaction costs Lack of trained staff Lack of knowledge in energy efficiency and related opportunities
Transparency of information	Lack of knowledge in EPC and trust between Parties Lack of clear regulatory and contractual rules Preference for Turnkey projects Lack of knowledge in energy efficiency and related opportunities
Standardisation and risk management	Availability of financing Lack of knowledge and trust EPC is not interesting for companies who do not own their building Lack of trained staff High transaction costs
Guarantee fund and incentives	Availability of financing Lack of knowledge and trust High transaction costs Lack of guarantees Lack of clear regulatory and contractual rules ROI too long

NATIONAL CONTEXT FOR THE ROADMAP

The observatory of EPC recently launched by ADEME, Cerema and the CSTB (Centre Scientifique et technique du Bâtiment – Technical and Scientific centre for buildings), already list more than 250 EPC. These are mostly implemented in the public sector (86%), the private sector facing important roadblocks as mentioned in this paper[6]. Data for the latter is also more difficult to gather.

Within the next couple of years, some changes in the regulatory framework may enhance the use of EPCs in private tertiary buildings. France has, in conformity with the article 3 of the European Directive 2012/27/UE related to energy efficiency, set a double objectives: reduce its primary energy consumption at 219,9 Mtoe by 2020 and its final energy consumption at 131,4Mtoe. In the building sector it plans to reduce by 38% its energy consumption for existing buildings by 2020 compared to baseline.

The tertiary and residential sector represented in 2015 close to 45% of France's final energy consumption and is therefore a key area of focus for national policies. Building codes (RT2012) focus both on new and existing buildings to improve their global energy efficiency.

The article 17 of the LTECV (Loi sur la transition énergétique pour une croissance verte – Law on the Energy Transition for a Green Growth) applies to the tertiary buildings with the objective of reducing by at least 60% their final energy consumption by 2050 compared to 2010. A chart for the energy efficiency of tertiary buildings was launched to this extent in 2013[7].

The 10th of May 2017, the decree *n° 2017-918 du 9 mai 2017* on renovation of tertiary buildings, was published on the "Journal Officiel", making mandatory the implementation of energy renovation measures by 2020[8]. Large buildings over 2000m² will especially need to implement refurbishment activities (with objectives to reduce energy consumption by 40% in 2030 and 60% by 2050), and this will be monitored by ADEME.

These could enable further developments of EPCs, building on their advantages and especially the fact that:

- With an EPC all Parties have the same interest in obtaining energy savings, unlike a turnkey project where it only benefits the client (assest owner);
- The collaborative approach, along with the close monitoring of energy performances, has the potential to further increase the level of energy savings;
- EPC provider or third part can provide the initial investments, which is often one of the main barrier to energy efficiency projects, despite high potential for savings and reasonable ROI;
- The risk of energy efficiency investment is beared by professionals (the EPC provider) and not the client, which can often be put off by this risk.

In the meantime, the observatory for sustainable buildings (OID – Observatoire du Développement Durable), in its barometer 2017, monitored a sample of 7000 tertiary buildings representing 24.7 million m². Their survey shows that consumptions could be subsequently reduced in the retail sector (78% have a G Band in terms of energy performance certificate rating, i.e. the lowest rating), the logistic

[6] Lemoniteur website : https://www.lemoniteur.fr/article/les-contrats-de-performance-energetique-montent-en-puissance-34598798
[7] French Government : https://www.ecologique-solidaire.gouv.fr/sites/default/files/PNAEE%202017.pdf
[8] French Government : https://www.legifrance.gouv.fr/eli/decret/2016/5/30/LHAX1613394D/jo

sector (50% of buildings having a band of E or lower) and offices (only 6% with an EPC band C, 66% with E or lower). The potential is therefore strong to improve energy efficiency in these various segments[9].

In this context, the following action plan builds on the main findings from Trust EPC activities to propose a set of measures, associated with clear objectives. These objectives are especially by 2020:

- Have 10 pilot projects implemented in office buildings, hotels and medium size retails.
- 50 new EPC projects in the health and education's sectors (for buildings larger than 2000m²).
- 75 new projects in commercial centres and leisure centres (for buildings larger than 2000m²).

In addition, and as EPCs in their current states are not well adapted to SMEs, it is critical to enhance other energy efficiency solutions, eg. with simplified process, standardised approaches that reduces transaction costs, etc.

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[9]Plan Bâtiment Durable, access via http://www.planbatimentdurable.fr/IMG/pdf/le_barometre_version_pdf.pdf

ACTION PLAN

Measure	Activity	Implementing Organization	Priority level	Financing mechanisms	Timeline					
					S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
Training and capacity building	Tailor made training and awareness raising programmes to strengthen knowledge and awareness on EPC	Ministry of energy and the environment ADEME Specialised training institutions All relevant stakeholders	+++	Self-financing National Funding EU funds						
	Develop energy renovation modules for asset owners to build capacities and offer basic understanding on key aspects of energy management	Specialised body for professional training All relevant stakeholders	++	Self-financing National Funding EU funds						
	Increase joint information efforts with representatives of ESCO and federation of the tertiary sector with co-organisation of trainings/webinars,	Relevant associations Building/Energy renovation experts ESCOs	+	National						

Measure	Activity	Implementing Organization	Priority level	Financing mechanisms	Timeline					
					S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
	dissemination of materials									
	Incentives (grants, tax reductions, etc.) for asset owners and financial institutions to use the materials developed and follow specific training	National/regional policy makers EPC providers ADEME	+++	Public funds Tax reductions EPC providers						
Information sharing	Dissemination of best practices already implemented in various segments	ADEME Chambers of Commerce	++	Self financing ADEME						
	Create communication materials around these best practices, their mechanisms, main results	ADEME EPC Providers Chambers of commerce	+	ADEME EPC Providers Chambers of commerce						

Measure	Activity	Implementing Organization	Priority level	Financing mechanisms	Timeline					
					S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
	Creation of national and European open-source databases with EPC implemented	National authorities- Energy Agencies EPC providers (to share experience)	+++	National funds EU funds ESCOs associations						
	Creation of a one stop shop dedicated to energy efficiency in the tertiary sector, building on the “espace info energie” experience in the domestic sector	National authority ADEME	+++	ADEME National funds						
Standardisation and risk management	Implement a more supportive regulatory framework, with incentives for EPC implementation in large infrastructures such as tax incentives, grants…	National authorities	++	National						

Measure	Activity	Implementing Organization	Priority level	Financing mechanisms	Timeline					
					S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
	Benchmarking and standardisation programme for EPC and other EE funding mechanisms – setting up of clear guidance and common framework	National authorities ESCOs associations	++	National/European						
	Create a guarantee fund to reduce the risks taken by EPC providers, enabling a reduction of associated costs.	National authorities ADEME	+	National and European						
	Create a self-evaluation platform for companies to check if they might benefit from an EPC, with criteria defined by EPC providers and other stakeholders (e.g.: level of energy consumption, size	EPC providers ADEME Chambers of commerce	+	National						

Measure	Activity	Implementing Organization	Priority level	Financing mechanisms	Timeline					
					S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
	of the building, etc.)									
Others	Adapt leasing contracts so that the owners can benefit from energy savings, e.g. through adapting the level of rent with energy performances, through capturing part of the savings generated, etc.	National regulators Buildings associations Real estate companies	++	Self funded						
	Provision of incentives for asset owners to move towards EPCs rather than small scale turnkey projects with less potential (e.g. coupling EPC with CEE funding, other incentives, preferential loans)	National/regional policy makers EPC providers ADEME	+++	National/European						

Measure	Activity	Implementing Organization	Priority level	Financing mechanisms	Timeline					
					S1 2018	S2 2018	S1 2019	S2 2019	S1 2020	S2 2020
	Enhance EPC as a key policy instrument in European, National and Local energy and Climate policies	National authorities	++	Self-funded						
	Create an investment fund for EPCs, managed by an independent bodies, national authorities or ESCO associations	National authorities ESCO associations Chambers of commerce	+++	National/European						
	Links with other EU initiatives	EU policy makers, coordinators and partners	+++	National/European						

CONCLUSION

The various activities carried out under the framework of Trust EPC project highlighted important roadblocks to the development of EPCs in the French tertiary sector. Still, an important potential exists for improving the energy efficiency of tertiary buildings in the country, with bankable investments. The national regulation is pushing towards this direction with new obligations for tertiary buildings of a certain size. EPCs could to this extent play a significant role for unlocking EE investments in these buildings.

Recommendations made within this roadmap are mostly in line with current evolutions of national regulations and previous studies and researches on the subject. The action plan proposed aim to make sure that the opportunities offered by energy performance contracting, in terms of investments capacities, guarantees of savings, continual improvements in energy management, etc. are fully exploited when relevant (large buildings with important energy consumption), supporting compliance with the objectives set in terms of energy efficiency and energy consumption reduction at national and European levels.

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