JRC SCIENCE FOR POLICY REPORT

Energy Performance Contracting in the Public Sector of the EU – 2020

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Background

- JRC regular review of the status and development of the energy service markets of the EU Member States since 2005
- EnPC markets in the public sector 2014-2016
  - status, barriers, driving factors, best practices, and recommendations for EU support and policymaking
  - methodology based on expert input and documental review

Changing context

- SFSB initiative (2016)
- ESA 2010, Eurostat and EIB guidance (2017, 2018)
- Amended EPBD (2018)
  - Recognizes EnPC capacity to deliver thermal performance (Art. 14 and Art. 15)
  - LTRS (Art. 2a)
  - Energy saving goal, measurement and verification (Art. 10)
  - Information. Recommended One-stop-shops (Art. 20)
- New targets. Green Deal, Renovation Wave, Climate Target Plan 2030
- New financial needs: €275b/ year for building renovation
- Diverse and complex local conditions, degree of commitment (JRC 2017)

Focus (vs other energy services)

EnPC involves the transfer of technical and financial risks to the private sector, i.e. the remuneration of the provider is directly linked to delivery

- (+) The provider is incentivised to maximise projected and delivered savings
- (+) Performance guarantees create new financing possibilities
- (+) Potential for engaging private investment
- (-) The need for verification and monitoring increases the cost of intervention
- (-) Performance guarantees make providers conservative in their choice of solutions and contracts.
- (-) Complex mechanism and transition costs

Data collection

- Adapted from previous JRC reports
  - Expert survey (25') & interviews (n=74)
  - Document review
  - Expert feedback (n=18)
  - Validation
- Type of data
  - Qualitative data (barriers, drivers, best practices, opportunities, recommendations)
  - Quantitative data (contract size, duration, savings, number, and market size)
  - Semi-quantitative data (trends, commitment of administrations – EnPC & EED Art. 5 - impact of support and policy instruments – Eurostat guidelines, EEFIG, DEEP, PDA)

Affiliation (multiple responses possible)	Answers
ESCO / EnPC provider (a company whose core activity is providing ESCO services)	11
A company which offers ESCO solutions among other services (e.g. installer, engineering, energy agency, etc.)	10
ESCO / EnPC facilitator	12
Association	15
Utility	1
Government Organisation	13
Intergovernmental Organisation	3
Financial Institution	6
Consultant	16
Academic/research	9
Total responses (65 respondents online)	96

Market status

	2017	2019
AT	Unsure, probably slight decrease, but large regional differences. Public sector is the main client	Mature, but stagnating
BE	Pilot project phase, continuous growth. Private and public.	Developing (Mature in Wallonia)
BG	Very small market, slowly increasing trend. Public sector leads.	Small, slowly developing
HR	Relatively small, growing continuously. Public sector leads	Mature, developing (esp. lighting)
CY	Underdeveloped, maybe two pilots can start	Non-existent. Some hope for take off
CZ	Well developed, growing. Public sector leads.	Mature, developing
DK	Young, stable market, slowing down. Only public sector.	Mature, stagnant
EE	No projects	First project (local) being initiated.
FI	Young, moderately developed. Municipalities lead	Small, not developing
FR	Stable and growing. Public and private sectors	Developing – vague conception of EnPC with performance guarantees in the public sector
DE	Stable, large market, still growing, large regional differences exist. Public and private sectors	Mature: after a stagnant period, the market is stabilizing, with growth expectations
GR	Negligible, pilot status. Only public sector	Significant activity in public lighting (CRES), but vague use of EnPC concept
HU	Huge fluctuations, currently weak. Private only	Very small or non-existent
IE	Still preliminary. Public sector pilots.	Developing
IT	Rather underdeveloped. Public and private sectors	Developed
LV	Preliminary and fully dependent on subsidies. Pilots in public sector.	Preliminary and fully dependent on subsidies. Pilots in four municipalities started in 2017
LT	Preliminary	Small, emerging market (first project ongoing)
LU	Preliminary. Public sector reluctant	Non-existent
MT	Not yet deployed	Not yet deployed
NL	Boom during recent years. Public and private actors.	Active. Fragmented market and lack of consolidated information.
PL	EnPC is not common, struggling to take-off. Public and private sectors.	Small, emerging
PT	Emerging now. Mostly public sector	Developing (public lighting)
RO	Stagnant and has not grown recently. Public sector, but hindered by debt barriers	EnPC in the public sector not in use
SK	Considerable growth until 2015 (public sector), now totally halted.	Developing (mature)
SI	Steady growth. Mainly public sector.	Developing (mature)
ES	Slowly emerging. Private sector lead, public projects available.	Active, developing (esp. lighting)
SE	Market has been decreasing, and now at a rather minimal level. Public sector leads.	Small, stagnant

Implementation of EED Art. 18: Contracts

- Standardization wave, contributed by new guidance on ESA 2010
- Public sector leading the adoption of model contracts
- Models available in 17 MSs in 2018 → 21 MSs in 2019
- Successful in 8 MSs 2018 → 11 MSs in 2019 (still “unsatisfactory”, “outdated” or “not used” in 10 MSs)
- Availability vs. widespread use –need more “consistent” and tailored implementation of Art. 18

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Member State	Impact (0-4)	Resulting change
AT	1.0	None (no relevance for Statistik Austria).
BE	3.0	Transparency in writing off process; Since savings have to be higher or equal to EnPC price, solutions are limited, excluding structural insulation works
BG	0.0	Demand more passive, not implemented; Compatibility issues with ESIF have been overcome; Pursuing off-balance template which includes non-efficiency measures (longer contracts)
HR	4.0	The previous Energy Efficiency Law treated the EnPC as non-public debt, tenders in public lighting are clearer, and banks understand the model better. Not working for public buildings (performance not measured). Trials of combining of ESIF with EnPC for guarantee fund[75]
CY	0.0	Not implemented yet.
CZ	3.5	Treatment not important but Eurostat rules distort a functioning, balanced system, Finalization of off-balance contracts will make projects more acceptable to the administration. Combined use of EnPC + structural funds is taking off
DK	0.0	No change at all
FI		Consulted national experts claimed not to be acquainted with Eurostat rules
FR	0.0	No change at all
DE	1.0	Eurostat guidance is mostly disregarded. EnPC is considered to be similar to third party financing; comparison between EnPC and own investment is required and is widely standardized process
GR	1.0	Not widely known by authorities. A contract model in use involves limited provider liability
HU		Consulted national experts claimed not to be acquainted with Eurostat rules
IE	1.0	Ongoing exploration of the off-balance model, but pioneering individuals were burned out in the past (before Eurostat clarification)
IT	4.0	Less investment but more economically focused; increased awareness and focus (Guide used as check list); confusion about application
LV	2.0	Mobilizing already motivated sector. No contracts.
LT	4.0	Provides structure and standardization capacity lacking in the country (EnPCs as PPP)
NL	0.0	Not an issue
PL	1.0	Not much
PT	1.0	No sensible changes
RO	0.0	No effect
SK	3.0	Better awareness, clearer regulation and facilitation mechanisms, simpler projects and increased confidence (but projects restricted by Eurostat Guide, i.e. market disruption)
SI	0.0	Requirements adopted at national level, no further changes
ES	3.4	Better understanding; Adapted procurement law and contract models; Conservative and slow interpretation of Eurostat and EIB Guide (slowing regional adoption). ESCO with EU funds (IDAE, lighting)
SE	-	Consulted national experts were not acquainted with Eurostat rules
EU	4.00	

Country colour code: off-balance sheet (green), on-balance sheet (orange) or a combination of both treatments (blue).
Impact colour ranges from dark red (0) to dark green (4).

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Implementation of EED Art. 18: Other

Definitions

- Transposed in 22 MS
- Transposition of EU Definition (e.g. Hungary) VS. flexible and goal-oriented definition (e.g. Denmark – fully paid by savings)

Guidelines

- Available in 18 MSs –some need update (continuous process, e.g. the Netherlands)

Lists of qualified providers, signatories of CoCs

- Verified for 15 MSs –often lack update, and specialization (on EnPC, on working with Public sector)

Information

- Widely available, diverse quality –often outdated, or just websites of ministries (e.g. Croatia)

Demonstration

- Widespread mechanism (reported in 15 MSs)
- Need more dissemination and demonstration of contracts (as updated), financing possibilities (e.g. Netherlands 5 white papers)

Facilitators and One-stop-shops

- Diverse understandings and names for the role of facilitators.
- Facilitators and One-Stop-Shops increase trust and reduce transaction costs along with a commitment to scale-up EnPC

Market trends

MS	EC JRC 2017 Report Expected development 2017-2019	EC JRC 2020 Database	
		2017-2019	2020-2023
AT	Big projects are to continue, but smaller projects are problematic	-0.75	**0**
BE	Growth expectations mainly in the public sector	0.75	0.75
BG	Very vulnerable to problems	-1.00	**0.25**
HR	The EnPC market indicates a growing trend, but ESA 2010 is a problem	1.00	0.70
CY	Recent policy improvement can create a favourable environment	0.00	0.50
CZ	The public sector is seen as a seeding source for EnPC in other sectors	0.50	1.00
DK	Unclear, because application to public buildings is saturated	0.00	0.75
EE	Very unclear, some positive signs combined with negative expectations	0.50	0.75
FI	Continuous growth is expected in the public sector	0.00	1.00
FR	Continued growth is expected	0.00	0.00
DE	Growth of the EPC sector is expected	0.20	0.70
GR	There is a high level of uncertainty related to the economy, albeit interest in EnPC	0.00	0.50[37]
HU	Unsure due to policy instability	0.00	0.25
IE	Unsure because of lack of information	0.75	1.00
IT	Market hindered by a few key barriers; limited growth expectations	1.00	1.00
LV	No optimistic forecasts	0.00	0.25
LT	Uncertain development of EnPC (other energy services are more popular)	0.00	0.50
LU	Not enough information	0.00	-
MT	No take-off is expected	0.00	-
NL	Continued growth is expected	-0.50	0.50
PL	With the current market conditions, development is not foreseen	0.25	0.50
PT	Unclear; there is commitment, but the market is limited by major barriers	1.00	0.50
RO	Under current market conditions, development is not foreseen	0.00	0.00
SK	Under current market conditions and barriers, development is uncertain	0.75	1.00
SI	Further market growth is expected	1.00	0.00
ES	A few key barriers hinder the expected level of development	**0.25**	**0.75**
SE	Depending on market conditions, momentum may be regained	-1.00	0.00
EU	Expert assessment 2019	0.00	0.00
EU	Average Member State assessments 2019	0.19	0.46

Scale: Upward (1, in green), Stable (0), Downward (-1, in red). Expert estimates in EC JRC Survey 2020 are averaged. Bold values: highly divergent set of responses.

Commitment of authorities, overall and EED Art. 5

MS	Understanding, interest and willingness of authorities towards EnPC in the public sector		Use of EnPC in the public sector in implementation of EED Art. 5	
AT	Very good. Nationally supported, awareness but limited knowledge. Default option in Central Gov buildings. Decision makers often block initiatives.	1.0	Used by central government, limited use at other levels	0.9
BE	No willingness.	0.0	Very limited	0.2
BG	Low interest, willingness and understanding (esp. from local governments). Uncoordinated ministries.	0.2	Low - Very limited	0.1
HR	High interest and motivation subject to availability of competing financing (investment grants). Variable understanding.	0.8	Not in the reported period. Halted progress in renovation of large hospitals and national real estate company	0.1
CY	Good level of understanding, interest, and willingness	1.0	Non-existing, exemplary role is needed	0
CZ	Variable in central administration. Municipalities prefer procurement	0.3	Diversity of responses: being vetoed by MoF, some respondents claim that EnPC is in use in a diversity of Government buildings	0.5
DK	Positive attitude at national (passive) and regional levels (active implementation). Municipality reluctance	0.5	Not relevant (exemplary nor EnPC action). Calls to regional and local authorities to use EnPC not framed as exemplary	0.1
EE	Nd	Nd	Nd	Nd
FI	Interest and willingness of local authorities	0.5	Very low	0.1
FR	Medium understanding, low interest and willingness	0.2	Marginal	0.1
DE	Inertial, variable attitude. Ranging from lack of understanding and mistrust to a good understanding, at federal and national levels (Dept of Energy is developing business conditions)	0.3	Ranging responses: Not known -Yes, in use	0.5
GR	No willingness since 2014. Expectations on adequate enforcement of National Energy Action Plan to foster efficiency. Reluctance to administrative burden	0.1	Not used. Conventional contracts with Structural funds are preferred. Expectations for upcoming period	0.0
HU	Lack of understanding and willingness. New interest with promises of a public ESCO. Renewed interest from municipalities but blocked by central government	0.3	Non-existent	0.0
IE	Unclear support from Central Gov't (concerns about inflation, officials worn out). Besides Dublin, local authorities awaiting forerunners	0.2	Slow uptake ("Climate Action Plan'). Promotion amongst regional and local authorities (Art. 5.7)	0.2
IT	Low understanding and willingness to change, but fiscally motivated; fragmented market	0.2	Absence of reference to Art 5. Low use (only 5% of interventions)	0.2
LV	Low understanding and willingness	0.1	None	0
LT	Encouragement and financing conditions (Ministry of Energy). Absence of additional assistance	0.5	Small use, procurement is preferred.	0.2
LU	The Governments expects the real estate sector to lead	0	Expectation that private sector leads the market	0
MT	Nd	Nd	Nd	Nd
NL	Resistance, mistrust towards ESCOs and EnPC	0.1	Difficult connection. Local authorities do not assume their role	0.3
PL	Rising awareness (deficient finance and technical support environment)	0.2	None. Small scale contracts	0.1
PT	Regulatory commitment; low understanding besides low risk options (lighting)	0.6	Required as the main financing related to Art. 5 but not functioning in practice (no building market)	0.2
RO	Unwillingness and incapacity at all government levels	0	don't know/no reply	0.0
SK	Interest of authorities (esp. national and regional)	0.7	Small- Marginal	0.1
SI	General unwillingness of central government bodies but leadership of some bodies (finance, infrastructure ministries). Overall good understanding and widespread use. Highly motivated City Council of Ljubljana	0.7	Medium (3 out of 6 comprehensive renovations in central government buildings). (raise the rating)	0.7
ES	Renewed interest from the Government unsupported with renovation plans: diverse awareness and attitude of building owners. Leading regions (e.g. Catalonia, Extremadura); municipalities in outdoor lighting	0.6	Alternative measures implemented through other contracts. Increasing awareness and fulfilment of Art 5, especially in Catalonia	0.3
SE	Individual but no general interest.	0.2	Some activity (2/5)	0.4
EU	Big lack of awareness among MEPs	-	Need financial resources for the uptake of the EnPC business model	-

Narrative responses were interpreted and graded from 0 (no willingness/ not addressed in implementation of EED Art. 5 –in red) to 1 (Very good/ EnPC is commonly used to fulfil Art 5 EED – in green).

Impact of EU support instruments

Member State	ELENA	PDA H2020	DEEP	EEFIG
AT	0.0	1.0	-	-
BE	2.0	1.0	0.0	0.0
BG	0.3	2.0	1.0	1.0
HR	4.0	2.7	1.3	1.3
CZ	4.0	1.0	1.0	2.0
DK[177]	3.0	-	-	-
DE	3.3[178]	1.5	0.5	0.5
GR	1.5	2.0	1.0	1.0
HU	2.0	2.0	1.0	1.0
IE	3.0	2.0	1.0	1.0
IT	**2.0**	1.0	1.0	1.0
LV	-	**2.0**	0.0	0.0
LT	2.0	3.0	1.0	0.0
NL	0.0	0.0	0.0	0.0
PL	4.0	4.0	-	-
PT	**1.3**	2.0	1.0	**1.0**
RO	0.0	0.0	-	-
SK	3.0	0.0	0.0	0.0
SI	4.0	0.0	0.0	0.0
ES	3.0	**2.3**	2.3	2.5
SE	2.4	1.5	0.8	0.1
avg	2.4	1.5	0.8	0.8

The colour shading ranges from nil impact (0, in dark red) to major impact (4, in dark green). Bold values indicate high variability between responses (>2).

Barriers and Recommendations

1. **Conceptual confusion about the advantages of EnPC regarding the provision of performance guarantees and quality assurance**
2. **Structural and regulatory barriers, procurement incompatibilities** – low energy prices (Lithuania, Germany, and Latvia); public sector access to low interest rates (Germany, Denmark, and Sweden)
3. **Insufficient trust in the system and access to information** (need quality assurance, measurement and verification, up-to-date demonstration examples, local assistance capacities – facilitation and One-stop-shops
4. **Complexity, transaction and administrative costs (actual and perceived)** adds to existing procurement complexity, problematic for fostering aggregation (e.g. ELENA)
5. **Limited commitment of Member States –** towards EnPC and, overall, the improving the performance of the public sector
6. **Insufficient access to competitive financing for ESCOs and especially for EnPC providers - M**aastricht-neutral contracts, advantageous financing for the public sector (Germany, Austria, Czechia, Slovakia)
7. **Remaining uncertainty about the Maastricht neutrality of contracts, especially in combination with public grants and forfaiting**.

1. **Increase emphasis on guaranteed performance (in terms of kWh or tCO_2) in definitions, support, and communications ***
2. **Follow up on Member States' reporting and transposition + additional guidance and requirements** – evaluation of action related to remaining barriers (EED Art. 18), advise on LTRSs, new guidance and requirements (with EED & EPBD 2021)
3. **Develop and require measurement and verification and, overall quality assurance capacities** – EnPC as a learning ground for mandatory measurement and verification in (EU funded) public sector interventions
4. **Further foster national capacity and knowledge to reduce administrative costs and financing risks** – standardization of procurement and tendering; advisory services for project set up (e.g. NEFF); risk comparability (DEEP, EEFIG-Toolkit) *(R.1)
5. **Furthering the impact of EU funds** – compatibility and conditionality of EU support (NECPs, LTRS, enforcement of quality assurance, assessment of suitability/ EnPC as default)
6. **Promote specific financing to leverage private investment – expectations on** Renovation Wave, InvestEU, NEEFs
7. **Continue to clarify and communicate Eurostat treatment and fund allocation rules (EU and MS level)** – ultimately, transferring costs and risks to the private sector

Final thoughts

- Remaining conceptual and data comparability issues
- Progress in the adoption of EnPC in the public sector
- Keep sight of ultimate goals (saving energy and private risks)
- Keep costs and complexity in perspective
- Need continued adjustment:
  - Technical capacity, information, demonstration, standardization, one-stop-shops
  - Financial support & Regulatory framework (compatibility and competition vs conditionality)

Thank you for your attention

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