EnPCs: Key for delivering on Europe's climate targets

Alex Geers

CURRENT STATE & FINDINGS

- **Extreme high Energy prices** for 2023-24 and trending to remain high after.
- **Energy Efficiency** in buildings is **lagging RES** despite being the “first fuel”
- **Green Deal & RRP funding** is unlocking **a large market potential** to be addressed in a relatively short window
- **Smart Buildings** are key to achieving the Commission's ambition to make this the “**Europe's digital decade**”
- **Upcoming enforcement of key objectives** to mobilize larger EnPC’s in the public sector despite EPBD and EED updates
- Limited **contractual & quality standardization** allowing for sufficient flexibility to close EnPC’s faster

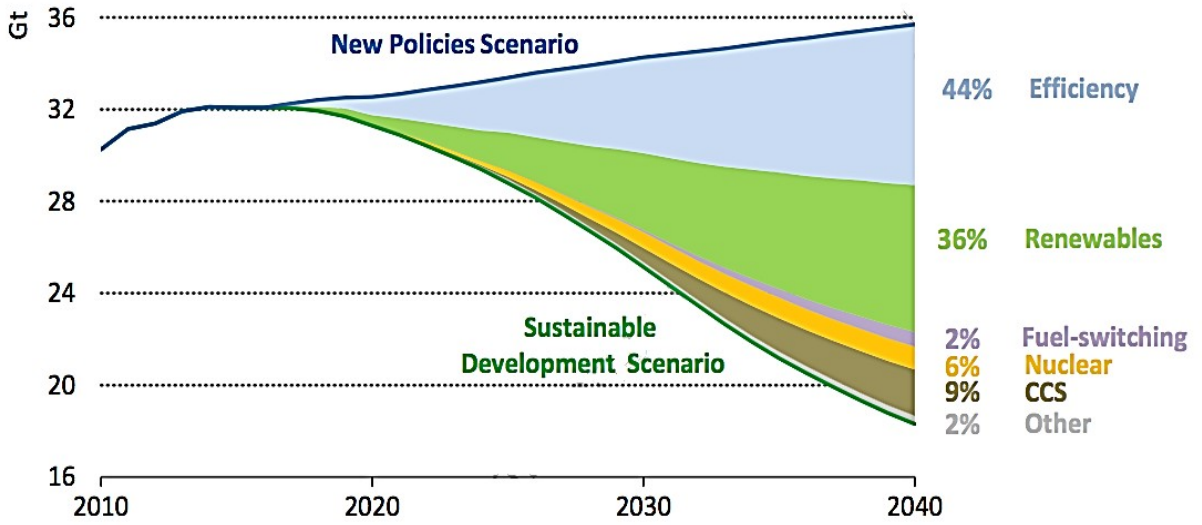


Figure 3.15 from the IEA’s 2017 World Energy Outlook, Drivers of the reduction in CO2 emissions (in gigatons CO2)

Renewable Energy Sources (wind / solar) well progressed with “Guaranteed Efficiency “still lagging behind

Why EnPC is key to deliver on climate targets ?

- **Do more – Go Faster** : Need for holistic and resilient approach on Energy Efficiency improvement programs to meet Zero-carbon road map objectives of Companies and Authorities

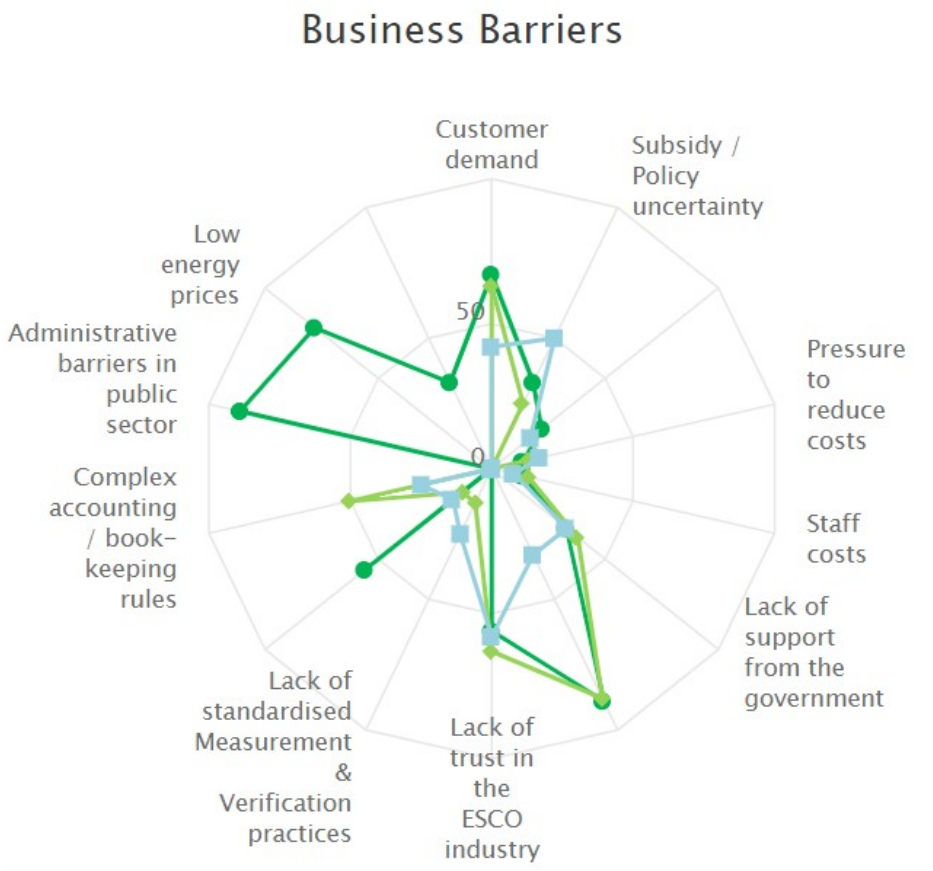
- **One chance to get it right** : Hence Performance Guarantees are a must to assure meeting objectives. EnPC's are an "Insurance" to reach these.

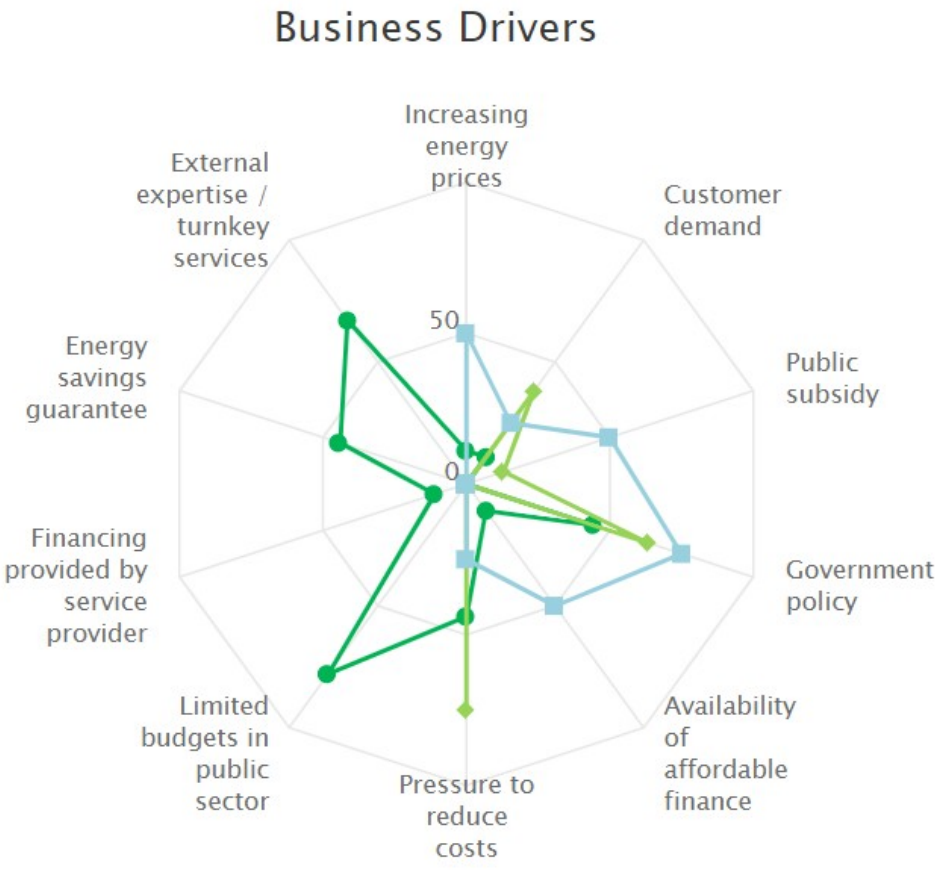
- **EC becoming a strong enabler**: EED and EBPD directives are adjusted to strongly drive performance and outcome guarantees on investment funds and grant released to member-states

- **EnPCs allow for larger programs and asset bundling** resulting to leverage cost synergies while involving smaller and medium sized local subcontractors

- Energy Efficiency **investments without performance guarantees** are **unlikely** to receive **favorable funding or financial conditions**

BUSINESS DRIVERS VS BARRIERS (IEA)





Note: The Belgian case is representative of most EU member states

Improving Awareness, Trust, Process Simplification, Bundling and Expertise
=crucial for EnPC market growth

POLICIES ENABLING BINDING OUTCOMES

Residential & Local/ regional Goverments

- EnPCs more and more looked at as **"Insurance" to meet Climate objectives**
- Market facilitators & authorities being more receptive for working according to a best practice tendering process
- Initiatives developing in the public sector to use **bundled EnPCs based on pre-qualified ESCOs**
- **Clear strategic asset management plan** obligation for grants & financing
- Introducing of **carbon taxonomy to speed up the decarbonization** of the building stock
- **Easier accessible grants** in the residential sector to comply with min. energy efficiency requirements/labels

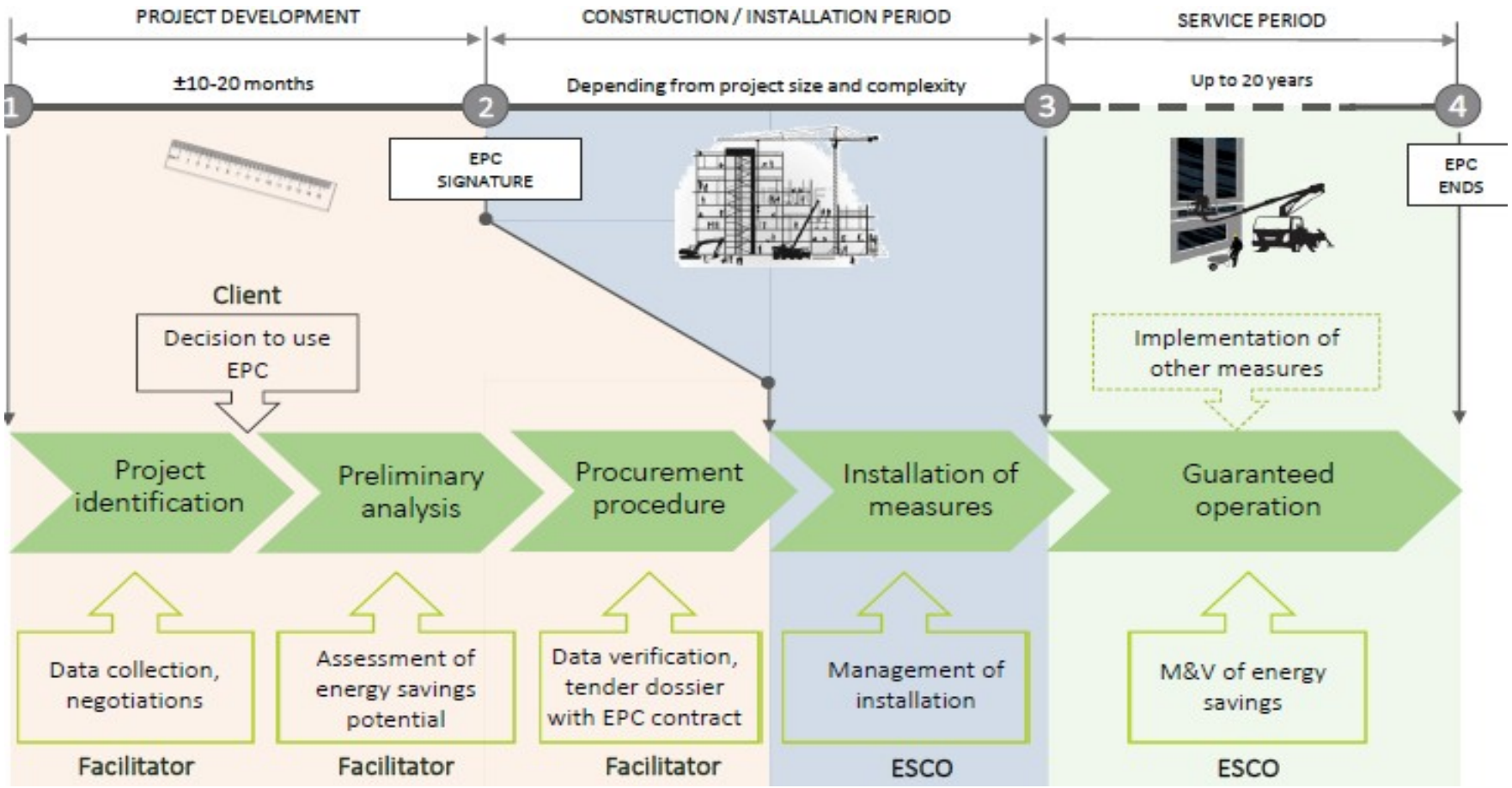
Private Sector & Industry

- Larger corporations defining **Zero-Carbon Road Map** and **Master Programs to minimize energy consumption and emissions** in large industry, setting adequate thresholds, KPI's and objectives
- Upcoming regulation requiring **private sector** building stock to **meet minimum Energy and Smart building certification levels**
- Requirement for **Energy Monitoring system for compliance** to certified energy labels and tax avoidance

New Innovative technologies

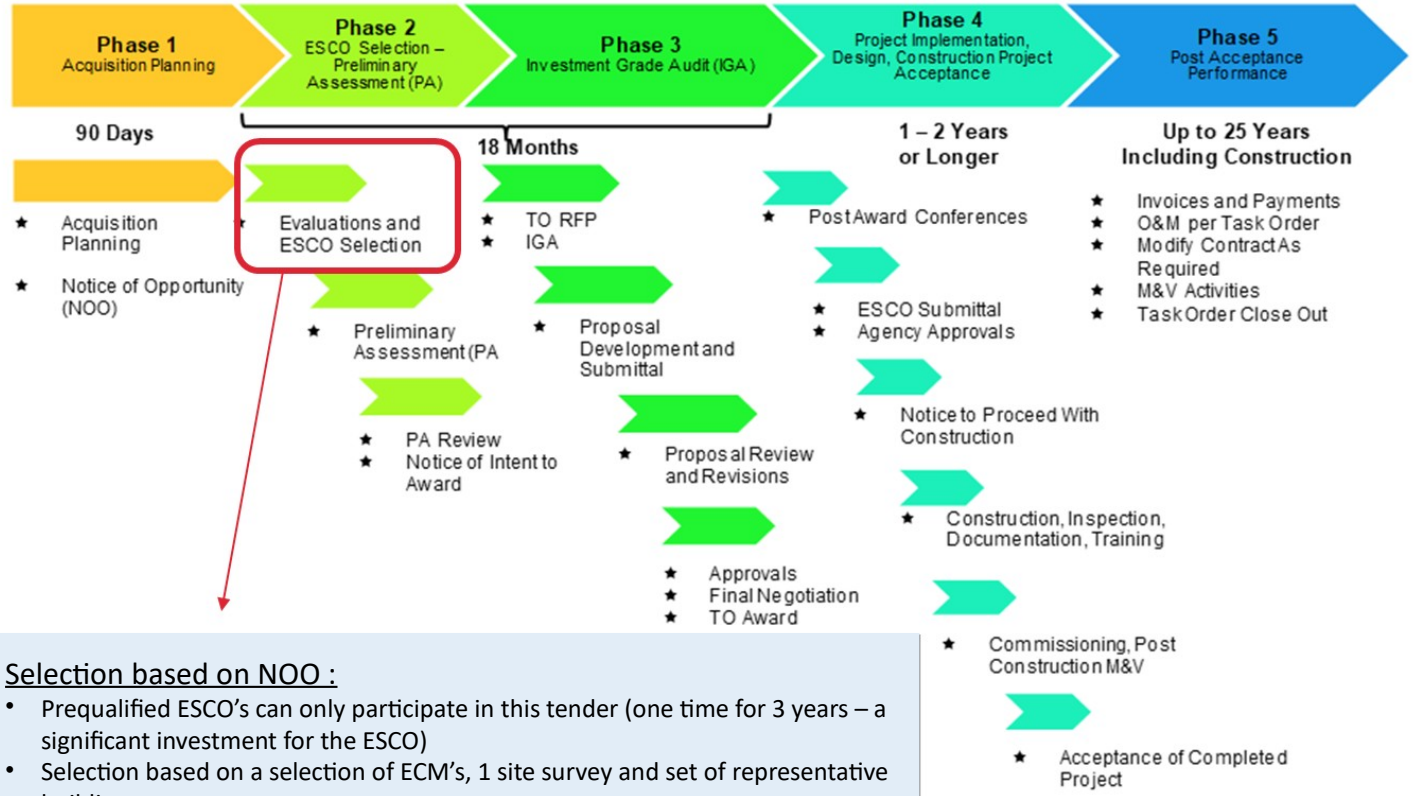
- Fast track **sufficient finance** for joint university/industry programs resulting in new technologies unfolding
- Optimized **Smart Demand – Supply** technologies and software with local resilience developing fast
- More participation and pilot deployment through **PPP schemes**

CURRENT ENPC TENDER PROCESS



Considered too slow, too small, too complex, too expensive
Not adequate to meet the 2030 and 2050 objectives

BEST PRACTICE EnPC TENDERING



Selection based on NOO :

- Prequalified ESCO's can only participate in this tender (one time for 3 years – a significant investment for the ESCO)
- Selection based on a selection of ECM's, 1 site survey and set of representative buildings
- IPMVP standard (Option C) mostly used seen the size of the contracts
- Complete building stock of the client considered avoiding sub-optimizations

https://www.energy.gov/eere/femp/energy-savings-performance-contracts-federal-agencies

- 5 Phases – compliant with public tendering rules
- Early selection of the ESCO
- Incremental award assurance to selected ESCO
- Therefore, willingness to invest in substantial pre-award / sales costs
- Faster project start and ECM implementation - faster savings
- No need for a long facilitation effort before tendering that is usually subsidized
- Allows ESCOs to be qualified / re-qualified based on straights in certain market segments
- Social obligations and use of small & medium-sized businesses can be imbedded

Faster, more effective, allows larger bundling especially for public infrastructure and building stock
= path to meet climate objectives

EXAMPLE EnPC:
Thinker Airforce Base , USA

- 60 large aircraft facilities
- Residential, sport and cultural facilities
- Logistical infrastructure

CHALLENGES
- Spread of 60 large facilities to service and repair aircrafts
- Improve energy and operation efficiency on 75 years old infrastructure & largest AFB energy consumer in US
- Resource constraints to address complex issues

SOLUTION
- Modernization of Manufacturing lines to eliminate wasted ventilation energy and increase worker safety
- Smart metering system supporting investment decisions
- 60,000+ efficient LED lights with wireless controls
- Updated wastewater treatment with enhanced control and alarm monitoring.
- Integrated BMS systems across the base connected to industrial plant equipment and systems

RESULT
- Enhanced production reliability in critical steam-fired processes, compressed air systems, and painting facilities.
- High-efficiency infrastructure, including lighting, heating, ventilation, and air conditioning.
- Upgraded building controls provide a more holistic view of facility-wide operations.
- Improved work environment.

400+ Mio $
Investment

5 Years
Modernization completed

25 Year
contract period

23%
Energy Consumption Reduction

20.5 Mio $
Annual Energy savings

EXAMPLE EnPC: 87 SCHOOLS SOSNOWIEC, POLAND

SOSNOWIEC

- 87 Pre-schools and schools
- Continuous optimization with transparent costs and efficiency

CHALLENGES

- Improving the learning environment
- Reducing energy costs
- Increasing student's performance

SOLUTION

- Modernization of heating systems and substations
- Lighting modernization
- Installation of a remote room temperature control system
- Implementation of a web-based service platform

RESULT

- 10 months, all 87 schools and pre-schools technically modernized
- A single remote monitoring and control system provide full energy data transparency across all schools

4 Mio €
Investment

10 months
School modernization complete

10 Year
contract period

31%
Heating cost savings

21%
Electricity savings

5220 t
Reduction of CO2 emissions