UNLOCKING BUILDING EFFICIENCY

THE SCALABLE AND STANDARDIZED TOOLKIT FOR ENERGY PERFORMANCE CONTRACT (EnPC) MANAGEMENT

ZERO-EMISSION BUILDINGS ACADEMY

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Start-up, ICT solutions aiming at improving energy efficiency and reducing GHG overall

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helexia

ESCo helping customers confronting the energy transition thanks to equipment cost decrease and digitalization

What is BIGG ?

Funded under the H2020 program, BIGG aims at demonstrating the application of big data technologies and data analytic techniques for the complete buildings life-cycle of more than 4000 buildings in 6 large-scale pilot test-beds.

Project started December 2020 and we have delivered recently the final version of the AI Toolbox.

inetum Positive digital flow
World-wide IT services and solutions, Digital Energy Practice. Project coordinator

CIMNE International Centre for Numerical Methods in Engineering
Buildings Energy and Environment (BEE) Group, applied research

CSTB le futur en construction
CSTB public research centre in the construction sector, in building science and ICT

Generalitat de Catalunya Institut Català d'Energia
ICAEN, developing and carrying out the Catalan energy policy (EE and RE)

domX
DomX innovative startup focused on energy management for residential setups

imec
IDLab of imec: applied research in health & care, transport & logistics, media, energy, etc.

helexia
ESCo helping customers confronting the energy transition thanks to equipment cost decrease and digitalization

intuicy Energis
Start-up, ICT solutions aiming at improving energy efficiency and reducing GHG overall: Energis.Cloud platform

infraestructures.cat
Project, build, conserve, maintain, modernize and exploit infrastructures and buildings of the Catalan Government

ENGIE
ENGIE Hellas, leading provider of energy services, technical maintenance and facility management services

HERON
Group of companies engaging in the production, supply and trading of electricity

ECTP INNOVATIVE BUILT ENVIRONMENT
European Construction, Built Environment and Energy Efficient Buildings Technology Platform. Industry-led stakeholder forum

The business case in which Helexia & Energis focuses is the EnPC Contract Management optimization.
Let's dive into it !

Securing the energy gain through EnPC* and AI

AZ ltd. is an industrial company that operates an outdated production facility.

AZ ltd. needs to invest in energy-efficient equipment to reduce operating costs and comply with environmental regulations

lack the necessary funds and technical expertise

management team is unsure about which specific upgrades would yield the highest energy savings.

AZ ltd. engage discussions with an Energy Service Company (ESCO), which offers turnkey EnPC package with financing and performance guarantees, allowing to proceed with energy efficiency upgrades without upfront costs. An AI tool continuously monitors and optimizes equipment performance, maximizing efficiency gains.

This partnership overcome financial and technical barriers while gaining cutting-edge technology and expertise, transforming them into an energy-efficient and competitive organization.

** Energy Performance Contract*

Securing the energy gain through EnPC and AI

What is an EnPC?

The EnPC is a contract between **a project owner** (private or public, who carries the project - AZ ltd. here) and an **operator specialized in energy services,** such as Helexia, which includes **measurable** energy performance commitments.

It **contractually guarantees** a reduction in the energy consumption of a building or a facility.

Throughout the contract, consumption is **quantified**, **measured** and **verified**.

The financial and technical risk is therefore transferred from AZ ltd. to the ESCo

Several types of EnPCs

The "services" EnPC

This covers investments in **systems** and their **maintenance works** : building management systems, control systems, high-performance lighting, office equipment, elevators, and energy supply.

Gains of 10 to 20% *

The "works and services" EnPC

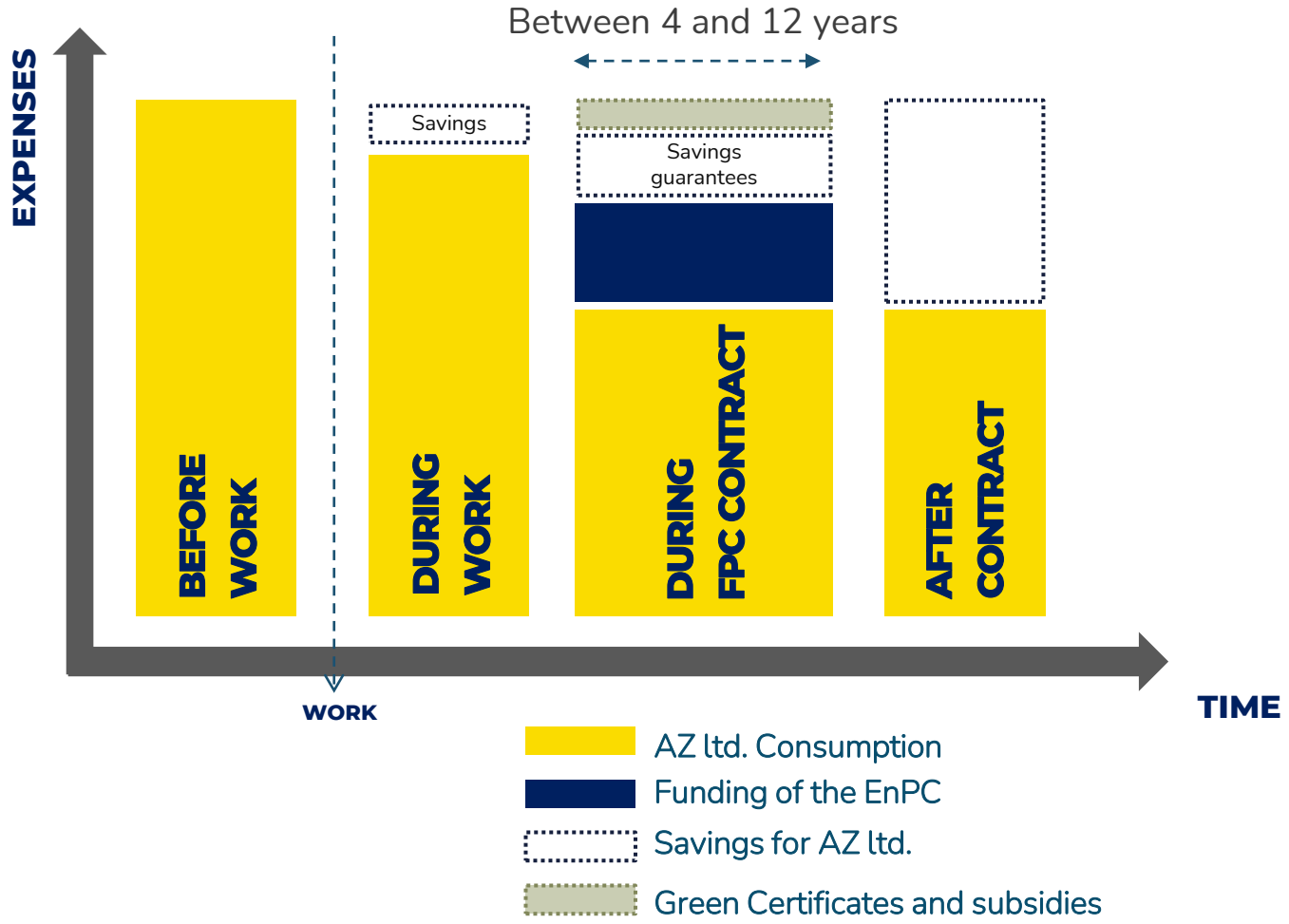
Is dedicated to investments in **technical equipment** and the target **building**, such as thermal insulation, the envelope or the structure itself.

Gains of 20 to 60% *

EnPC to enpower energy effiency work without CAPEX

Financing of a EnPC

- The ESCo finances **studies** and **investments** to improve energy efficiency and **recovers its investment** through the **savings** generated.
- It is committed to **reducing the energy costs** of the building or equipment being renovated
- It receives a **bonus** if performance exceeds expectations, or **pays penalties** if energy savings are not achieved

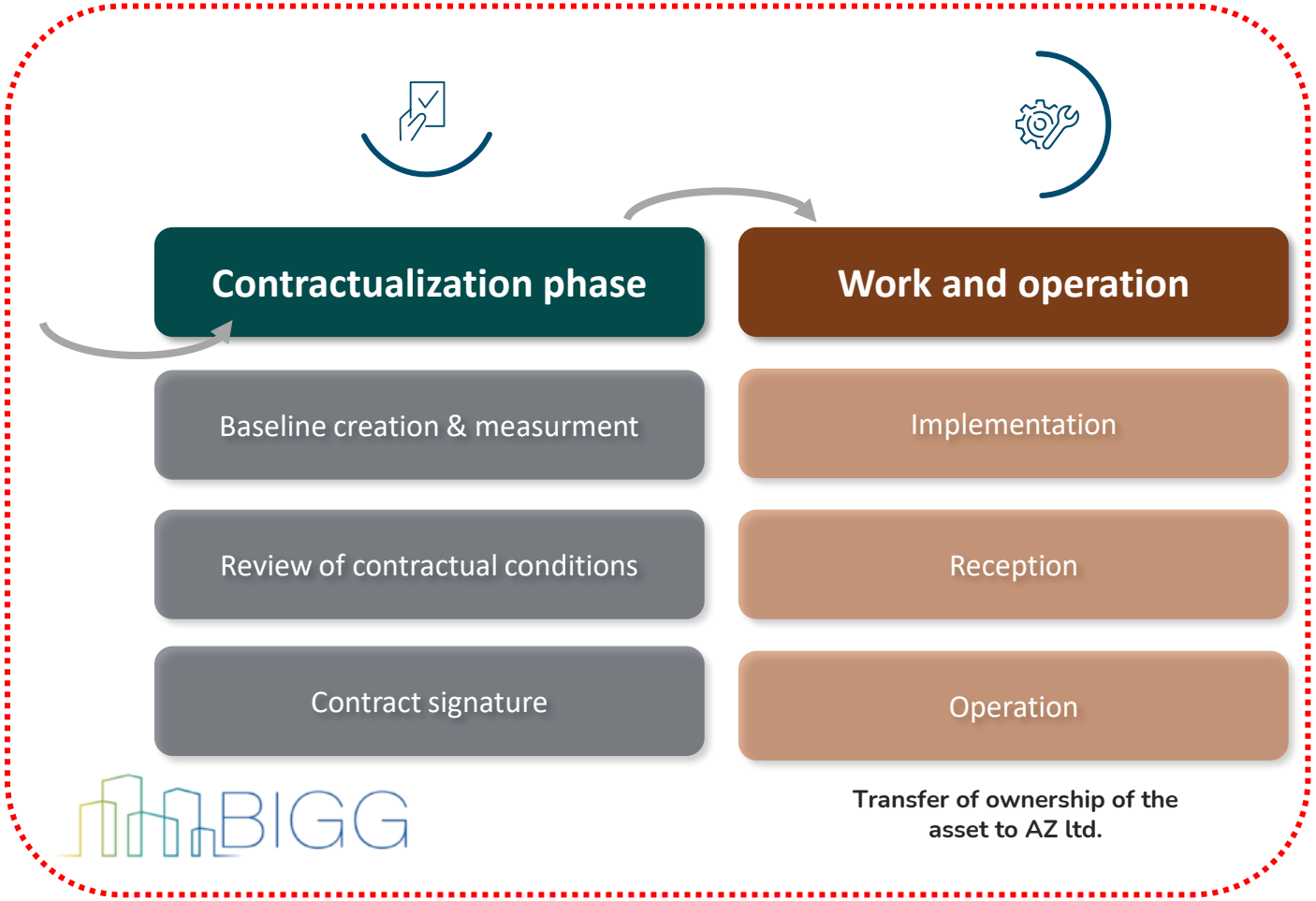


Conduct of an EnPC

Identification phase	Feasibility study	Contractualization phase	Work and operation
Initial energy audit	Technical solution	Baseline creation & measurment	Implementation
Identification of eligible work packages	Financial feasibility	Review of contractual conditions	Reception
Letter of Interest	Financing plan	Contract signature	Operation

Transfer of ownership of the asset to AZ ltd.

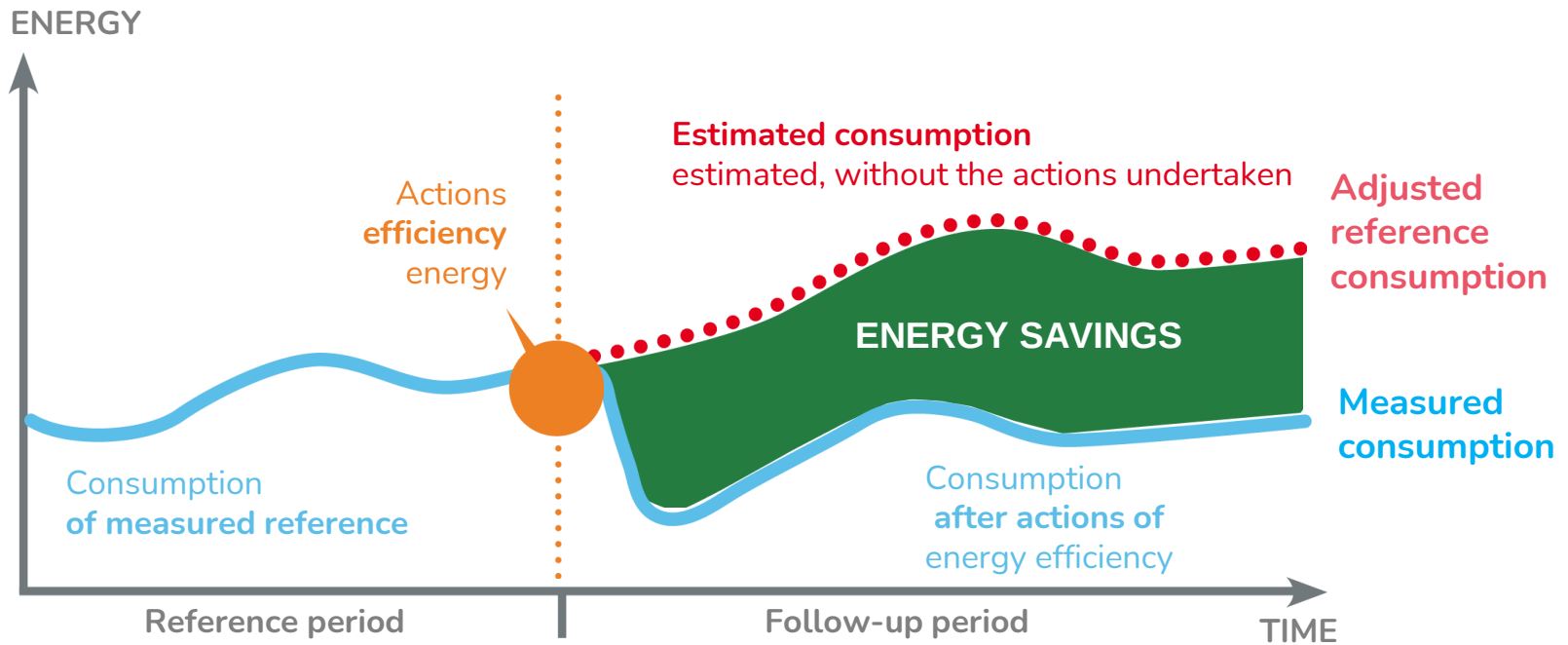
How does the BIGG Project integrates within this methodology



How BIGG AI Toolbox adresses EnPC for a clear, robust and neutral contract

Create a reference (baseline consumption)

This is the **starting point** for the pre-investment reference. It allows, during the measurements carried out throughout the duration of the contract, to **verify the efficiency of the investments**. The reference situation can be **adjusted according to the conditions of** use (surface, density, climatic evolutions...).



How BIGG AI Toolbox adresses EnPC for a clear, robust and neutral contract

Collection & standardisation of client data

It is essential to be able to **collect**, **analyze** and **highlight** all the data of different kinds, both in the context of the EnPC and in the day-to-day life of the building.

ESCo knowledge into **metering equipment** installation is combined with the Energy Management system to monitor **energy consumption** and **influential factors** (weather data, production, occupancy ...).

Monitoring and performance measurement plan

The guaranteed energy performance improvement target must be **measured and verified during the** term of the contract.

The energy performance guarantee must therefore be based on **measurable** data, as part of a contractual protocol. This measurement and verification protocol provides for **cases of adjustment of** the energy performance improvement target to take into account, and **changes in the conditions** set in the reference situation (for example, in the event of changes in **climatic conditions** or the **volume of activity** in the building).

AZ Ltd. should work with a CMVP company

Real-time demo

BIGG

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Thanks for your attention !

Any questions ?

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Thanks for your attention

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