

An aerial, high-angle photograph of a dense urban environment, likely a city center, with numerous high-rise buildings and a complex network of streets. The entire image is overlaid with a solid blue color. In the center, there is a white logo consisting of a stylized 'a' followed by three horizontal lines, and the word 'ambience' in a lowercase, sans-serif font.

a≡ ambience

The AEPC Concept & Business Model

Joint BELSCO and AmBIENCE Webinar

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Outline

- Active building EPC Concept
- The value chain of Active building EPC
- Active building EPC Business Model
- Implementation of Active Building EPC

An aerial, high-angle photograph of a city street at night. The scene is dominated by a large, modern building with a flat roof and a grid-like facade of windows, which is the central focus. The building is illuminated from within, and its reflection is visible on the wet pavement. To the left of the building, there is a curved road with a median and some greenery. To the right, there are more buildings and a parking lot. The foreground shows a wide road with multiple lanes, a crosswalk, and some trees. The overall atmosphere is urban and modern, with a strong emphasis on the central building.

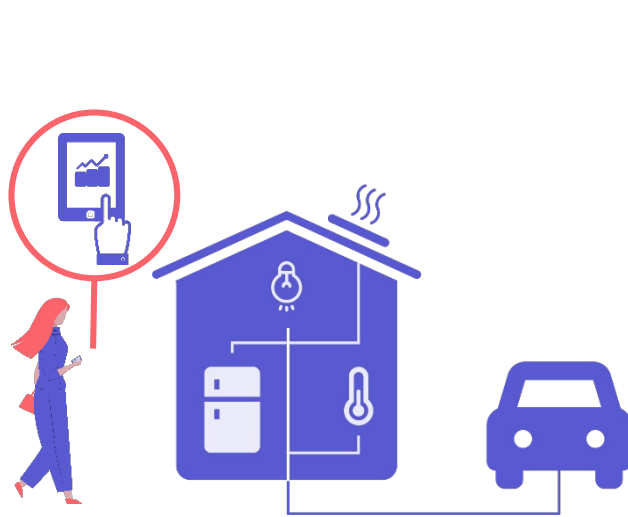
Active Building EPC Concept

Identified barriers to the market uptake of EPC



- ☐ Evaluation and measurement of savings
- ☐ Lack of integration of Energy and Non-Energy services
- ☐ Tenancy in commercial properties (tenants vs owner)
- ☐ Behaviour of users in buildings influences the energy demand drastically
- ☐ Complexity and cost of EPC contracts
- ☐ Lack of pilots / flagships / reference projects
- ☐ Lack of trained personnel

New Opportunity: Buildings will become more digital and smarter



Smarter: Active control based on data and measurements.
Active management enables significant emission savings in a cost-effective way.



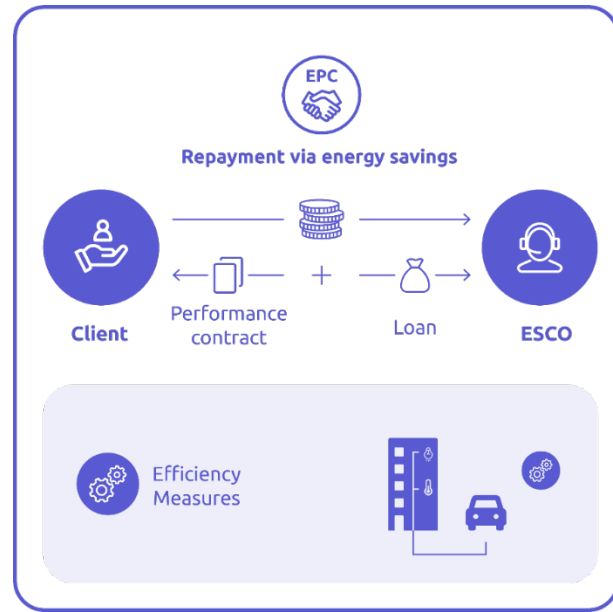
Smarter: Active control leveraging machine learning (e.g. smart thermostats)



More digital: adding sensors, meters, ICT, ...
- to improve comfort, security, (non-energy)
- to support M&V (e.g. but not exclusively in the context of EPC)

New Concept

The AmBIENCE concept extends the traditional EPC concept in **3 dimensions**:



Traditional EPC



Active Building EPC

Extending energy performance guarantees related to energy efficiency to include the valorisation of flexibility through Demand Response (DR) services

Tailor EPCs to a broad scope of building types: residential, hospitals, education, offices, commerce, etc

Extending the scope of EPCs to groups/clusters of buildings under the concept of (local) energy communities.

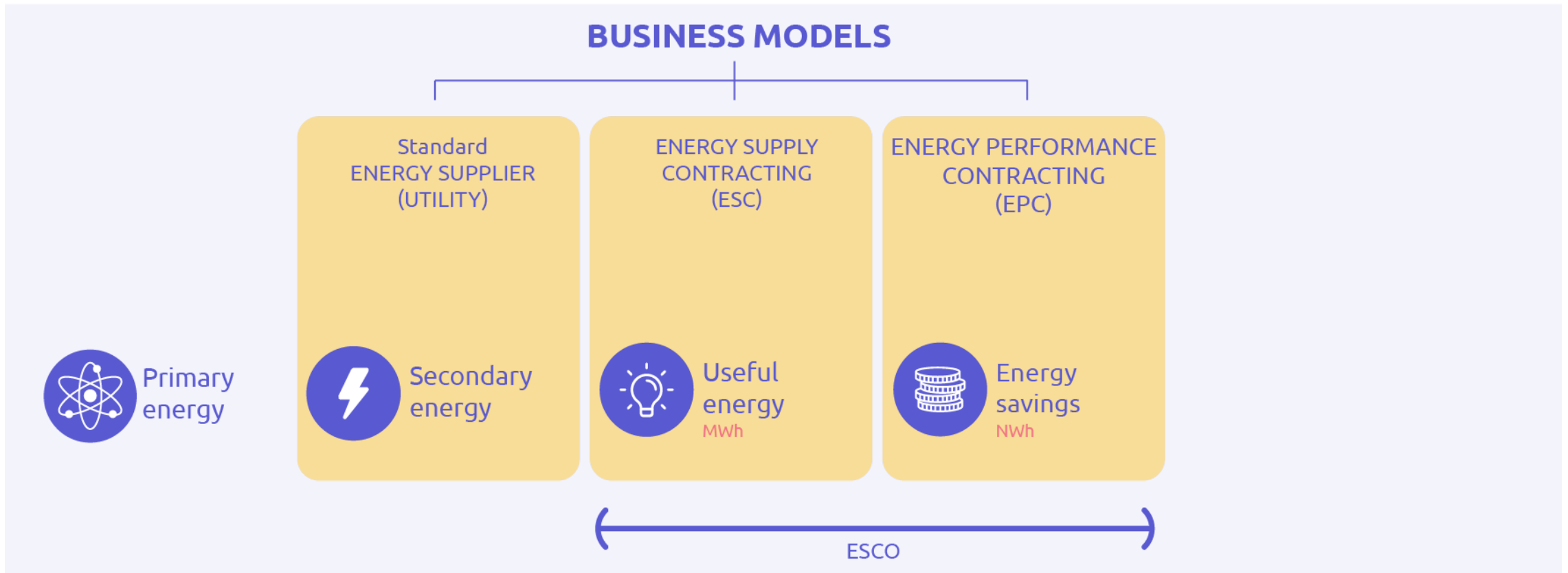
Definition of Active building EPC

The Active building EPC Concept is an enhanced modular and **performance-based delivery** and financing for the energetic renovation and optimisation of existing and new buildings, tapping into all **passive and active energy and cost saving measures**, while leveraging a comprehensive set of technical, operational, usage, behavioural and dynamic energy or CO2 pricing parameters. The Active building EPC concept is an **enhancement of the basic EPC concept**, through a strong focus on the **electrification** of the local heat supply and the addition of **Active Control measures**.

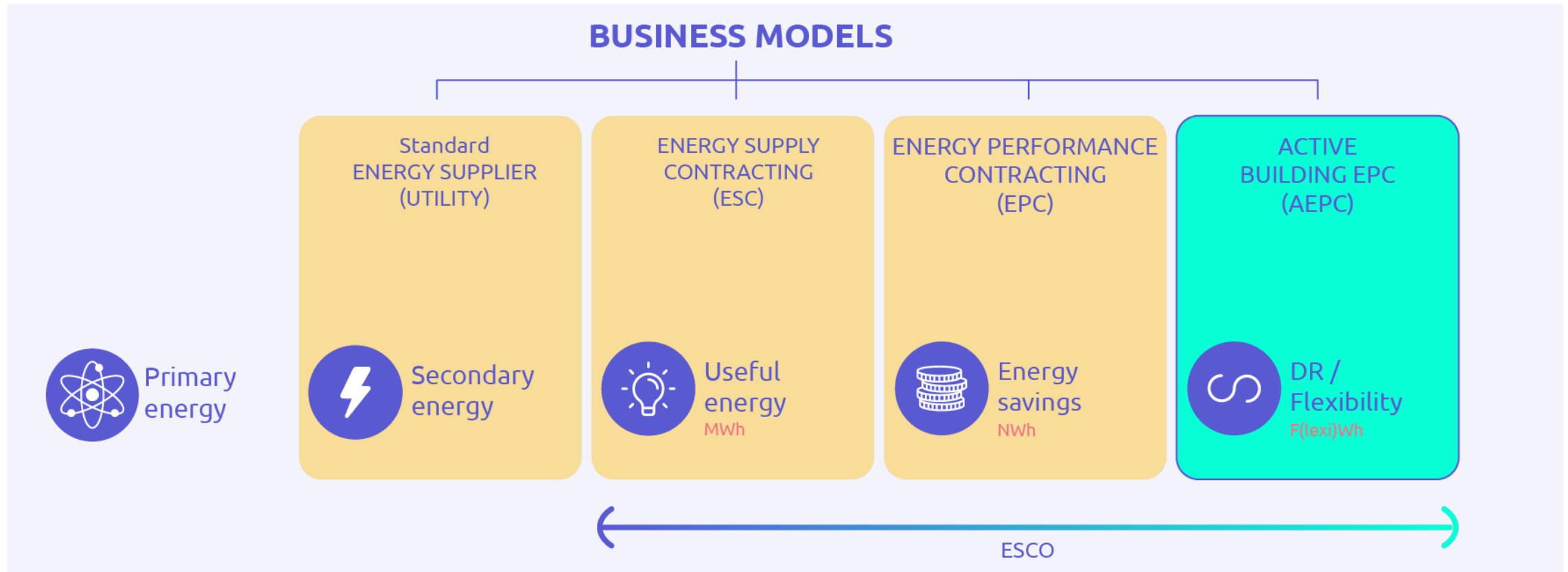
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The Value Chain of Active Building EPC

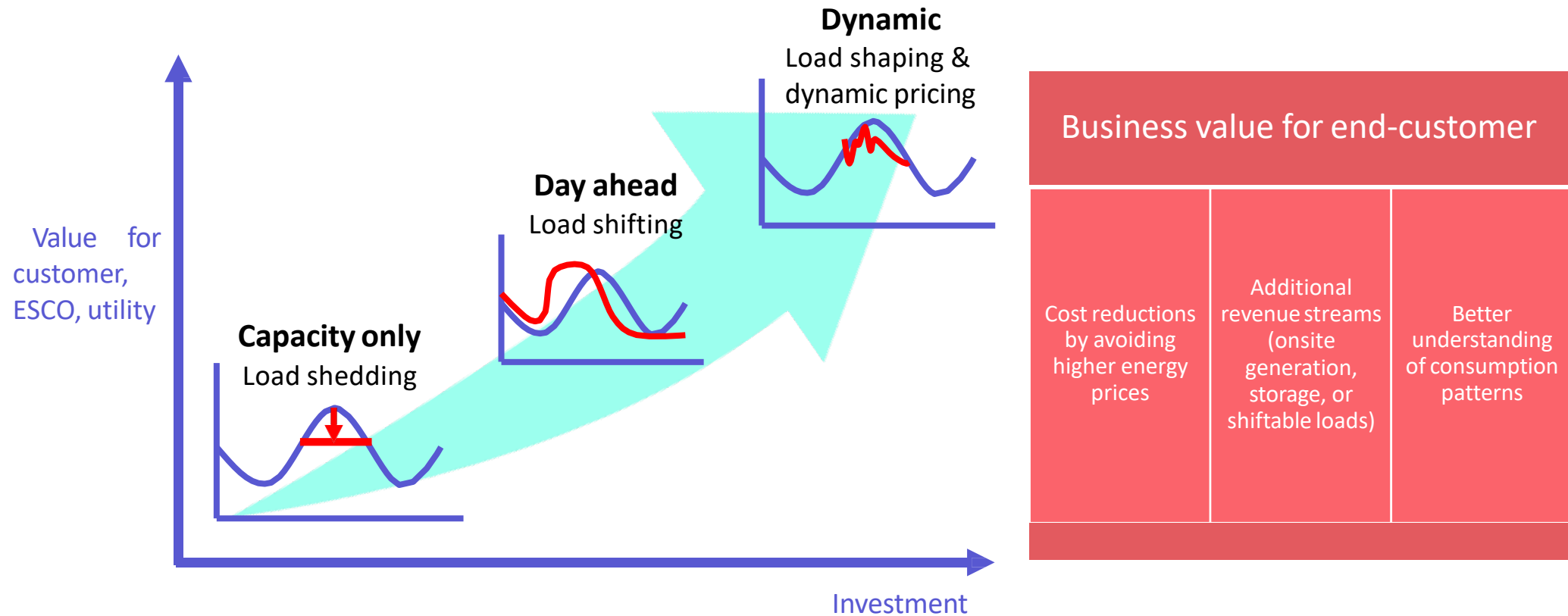
THE EXISTING ENERGY SERVICES VALUE CHAIN



A NEW ACTIVE ENERGY SERVICES VALUE CHAIN



The business value of DR in active building EPC



ACTIVE ENERGY SERVICES “ACTORS” VALUE CHAIN



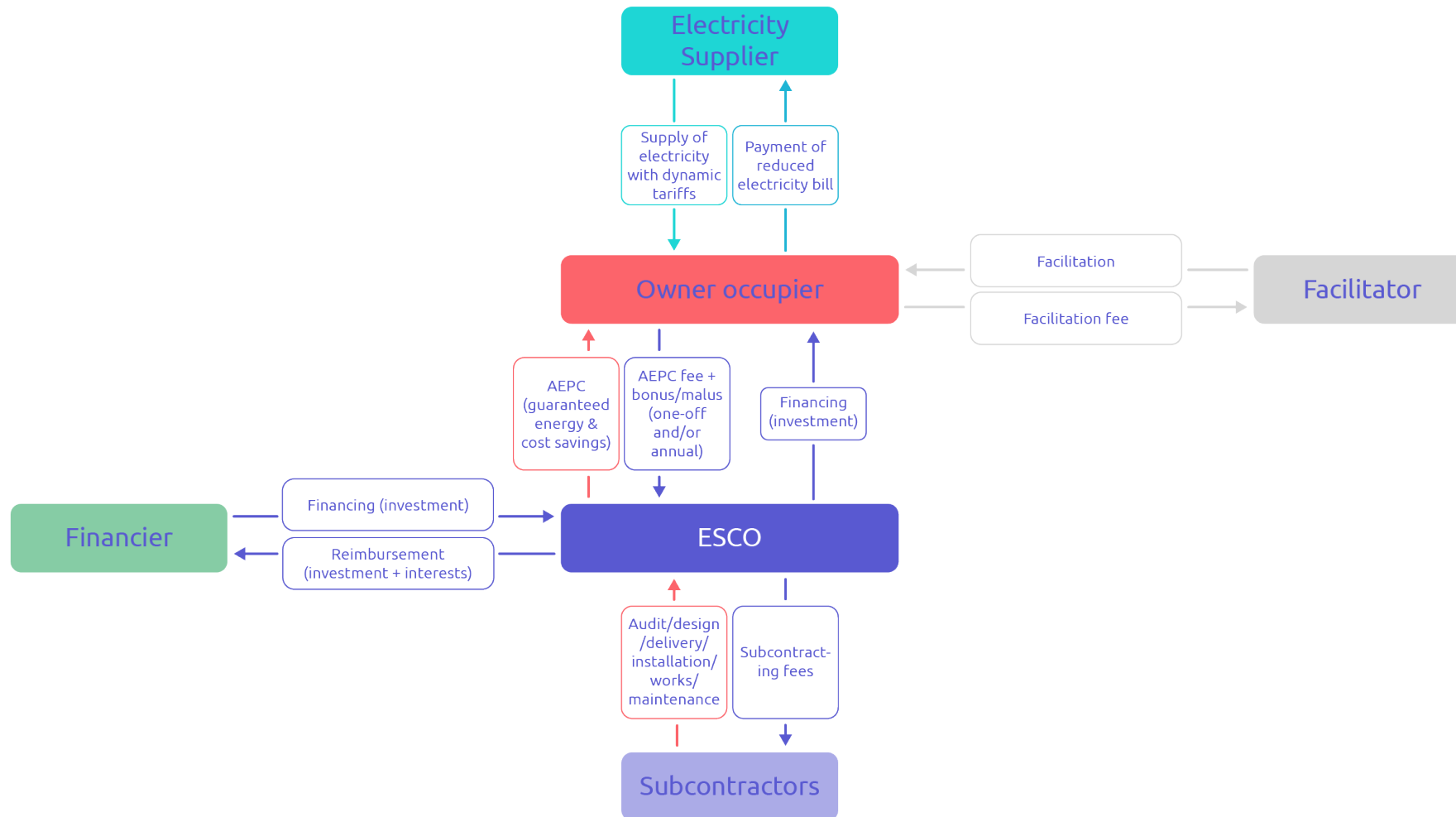
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Active Building EPC Business Model

Business Model Variation Parameters

Building type	Occupation model	Type of DR	Owner/Tenant relation	Financing
Commercial building	Individual	Implicit Explicit	Owner occupier Owner lessor & tenant (lessee)	ESCO financing FI Financing
Public building				
Residential building	Individual Collective (ACO)	Implicit	Owner lessor & Social Tenant	ESCO financing Umbrella Organization Financing
Social housing	Individual Collective			

Generic Business Model

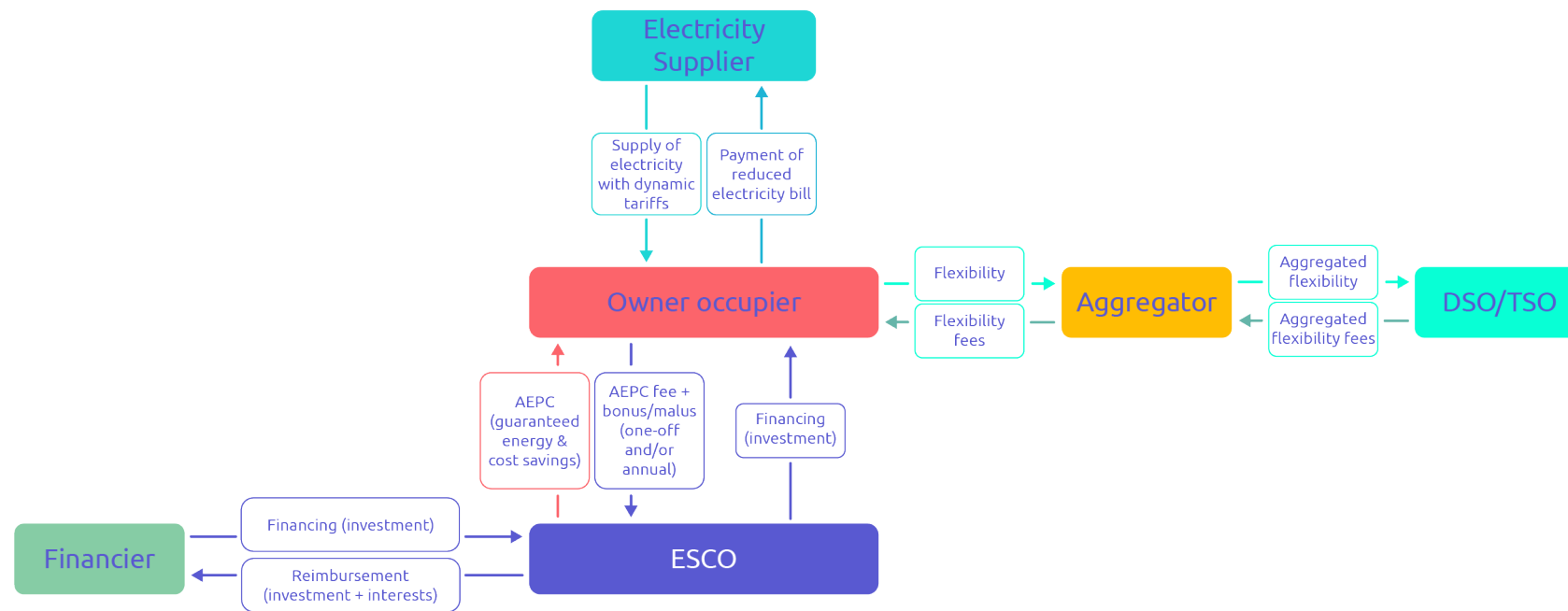


Business Model variations

Building type	Occupation model	Type of DR	Owner/Tenant relation	Financing	Business Model Variations
Commercial building Public building Residential building	Individual	Implicit	Owner occupier	ESCO Financing	A.1
		Explicit (variations 1 to 5)			B.1
					B.2
					B.3
					B.4
Residential building	Collective (ACO)	Implicit	Owner lessor & Tenant	FI Financing	A.2
				ESCO financing	C.1
					C.2
				FI Financing	C.3
Social housing	Individual Collective		Owner lessor & Social Tenant	FI Financing to co-owners	C.4
				ESCO Financing	D.1
				Umbrella Organisation Financing	D.2

Variation B.1

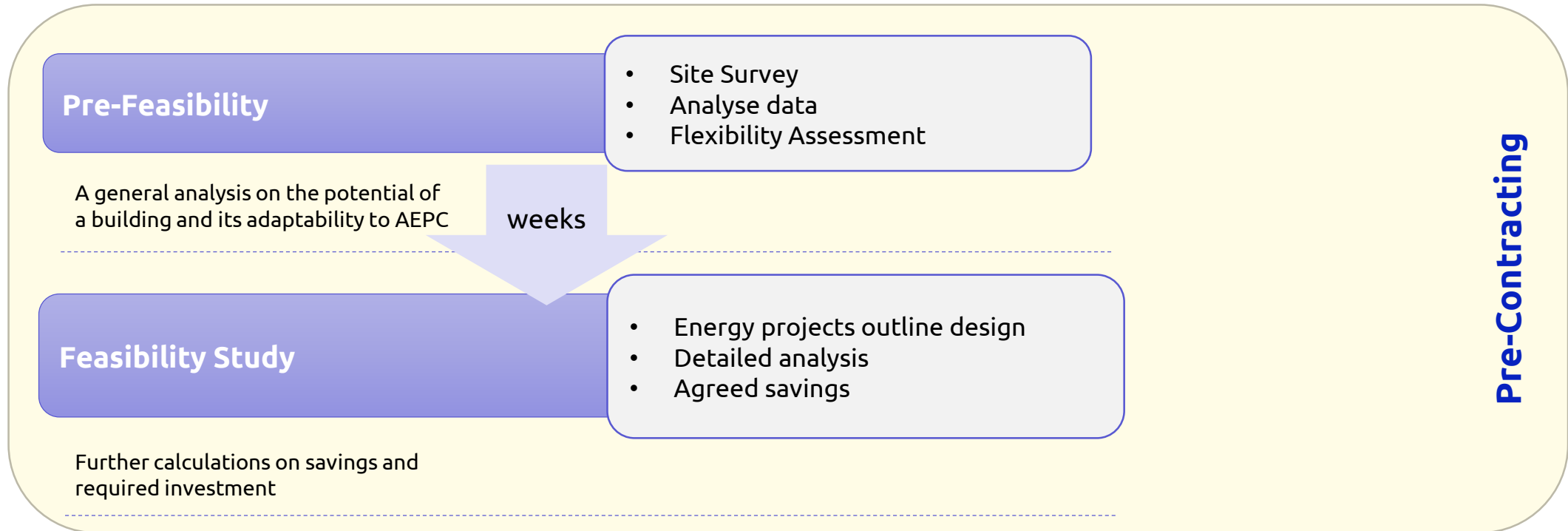
AEPC BUSINESS MODEL WITH EXPLICIT DR DELIVERED VIA AN AGGREGATOR TO THE CUSTOMER



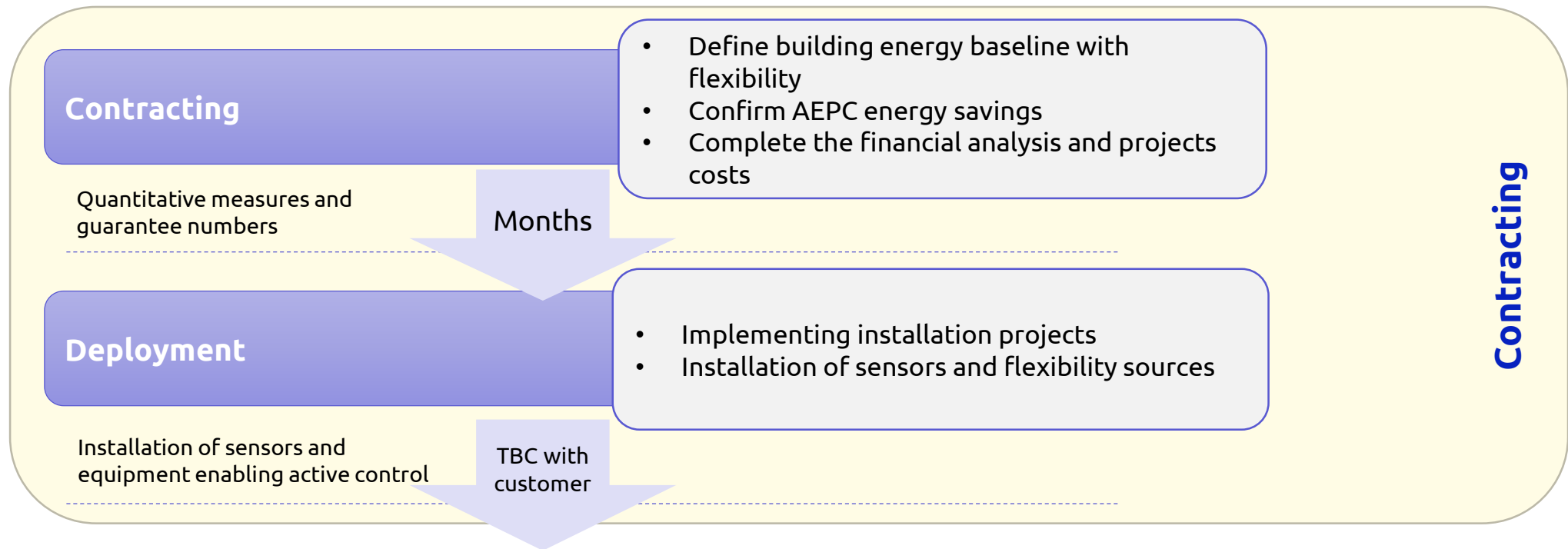
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Implementation of Active Building EPC

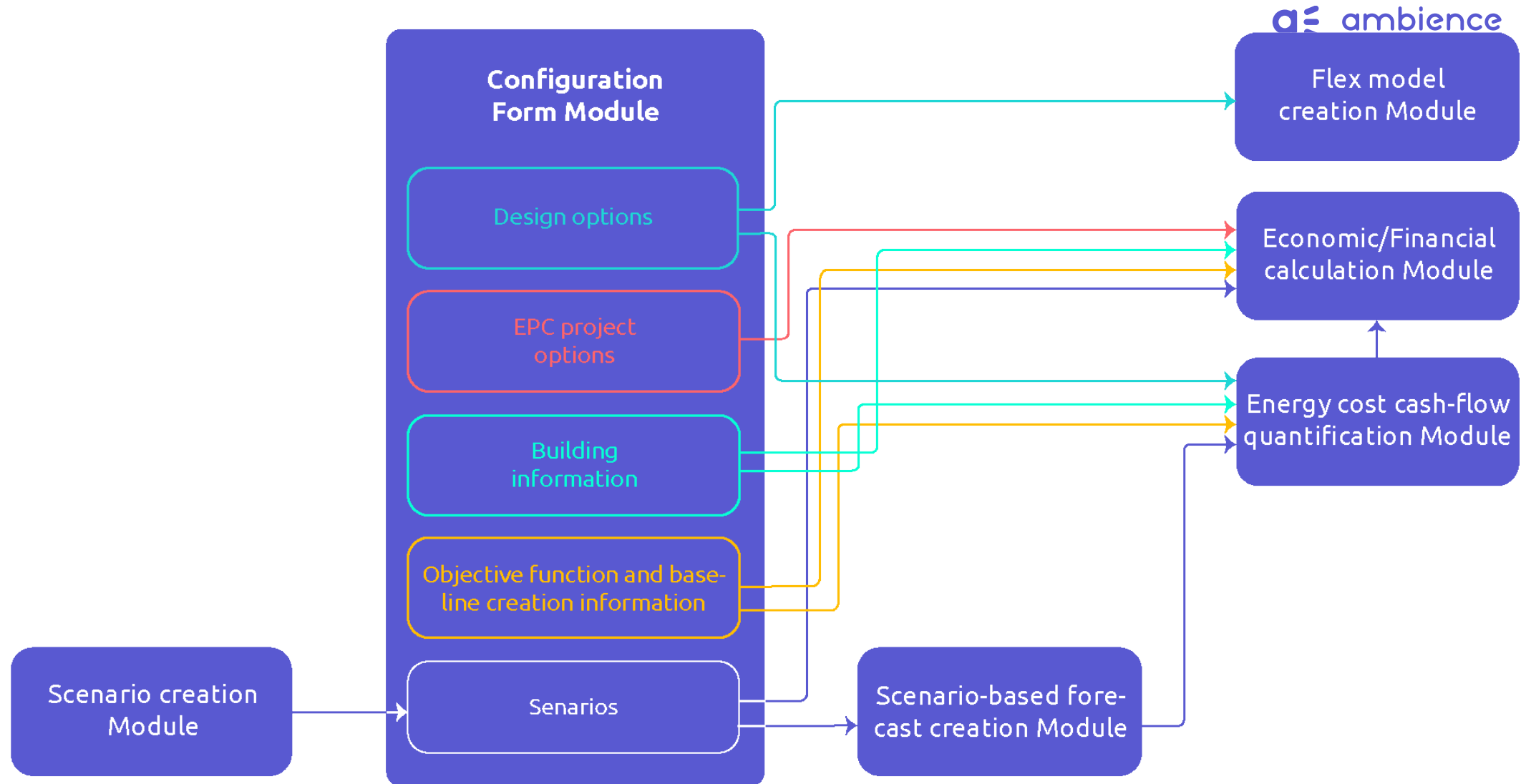
Pre-Contracting phase



Contracting Phase

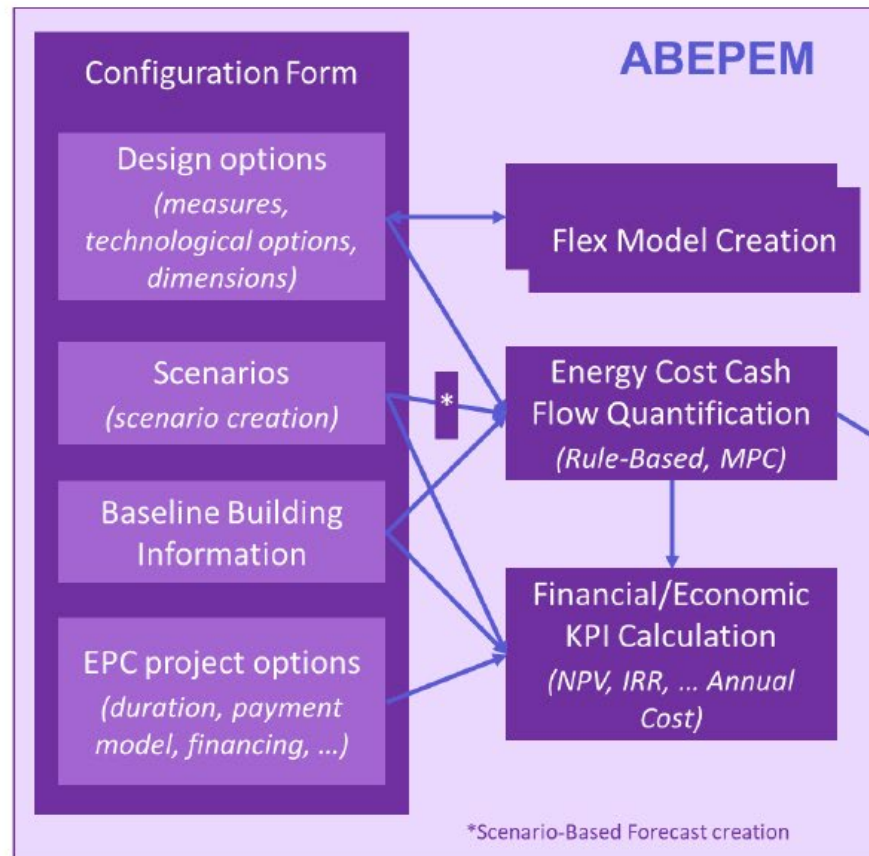


ABEPeM Platform



ABEPeM Platform in AEPC

Contracting



Operation & Monitoring



Operational Measurements
(Actual Performance)

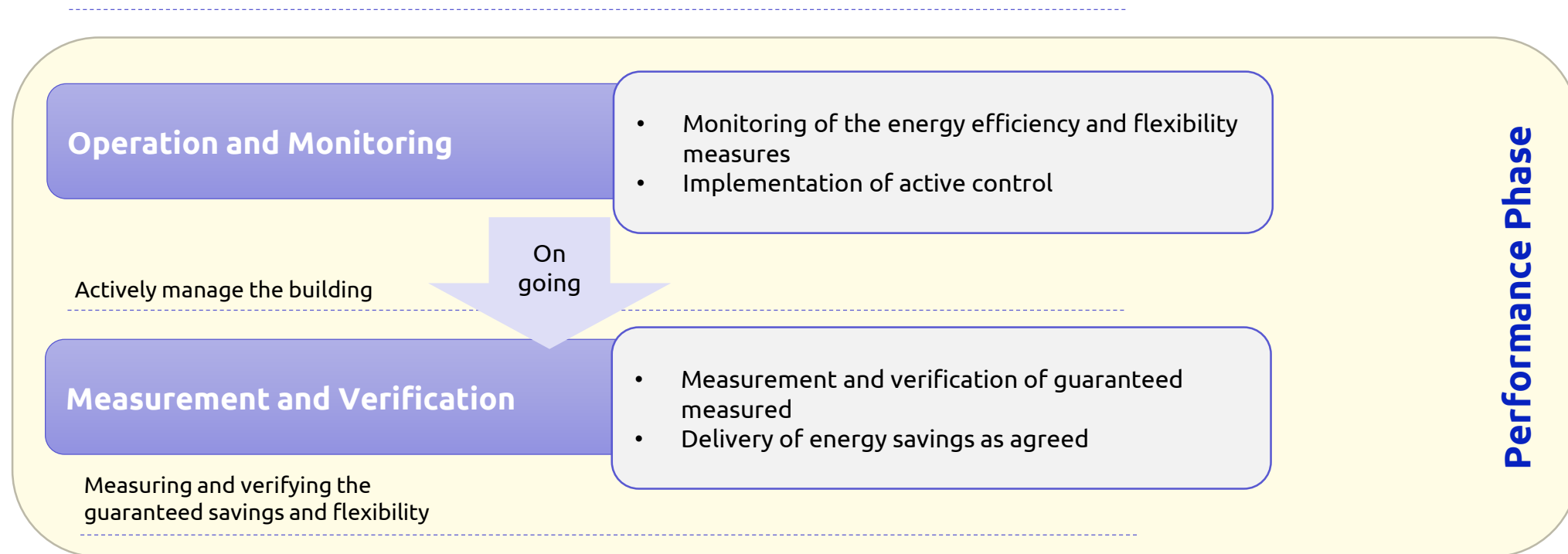
Reference – Guaranteed - Performance



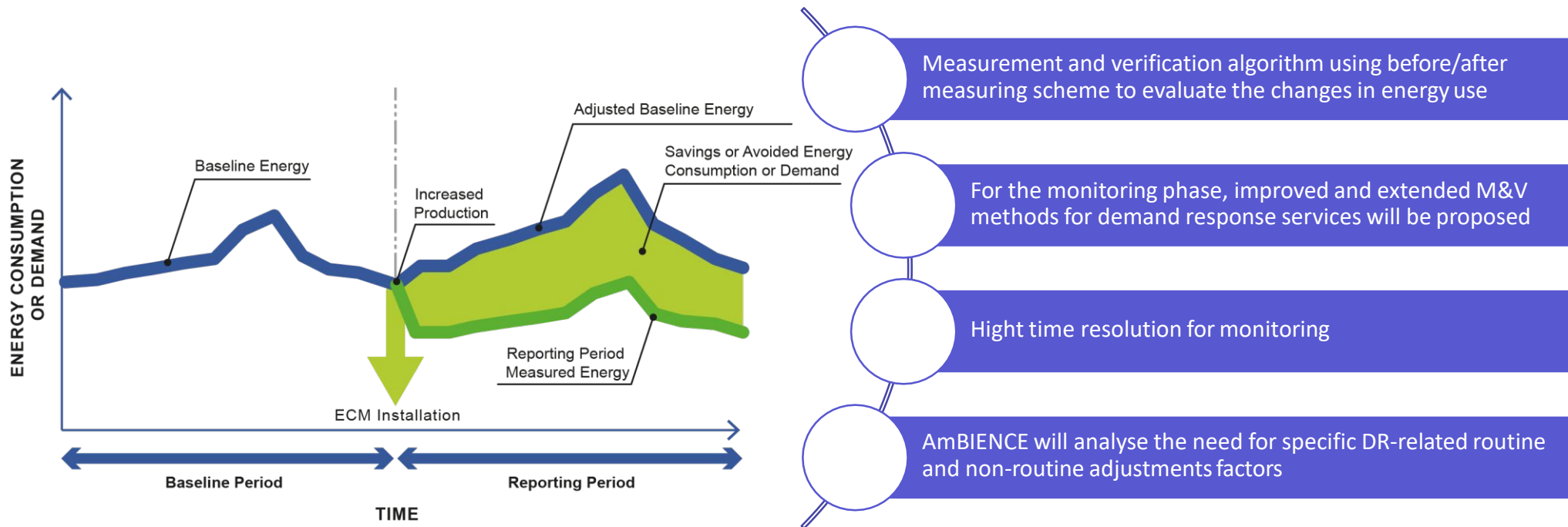
Performance - Guarantee - Verification

Performance Guarantee Assessment

Performance Phase



Tailored M&V towards flexibility



Source: evo-world.org

Thank you

www.ambience-project.eu

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