



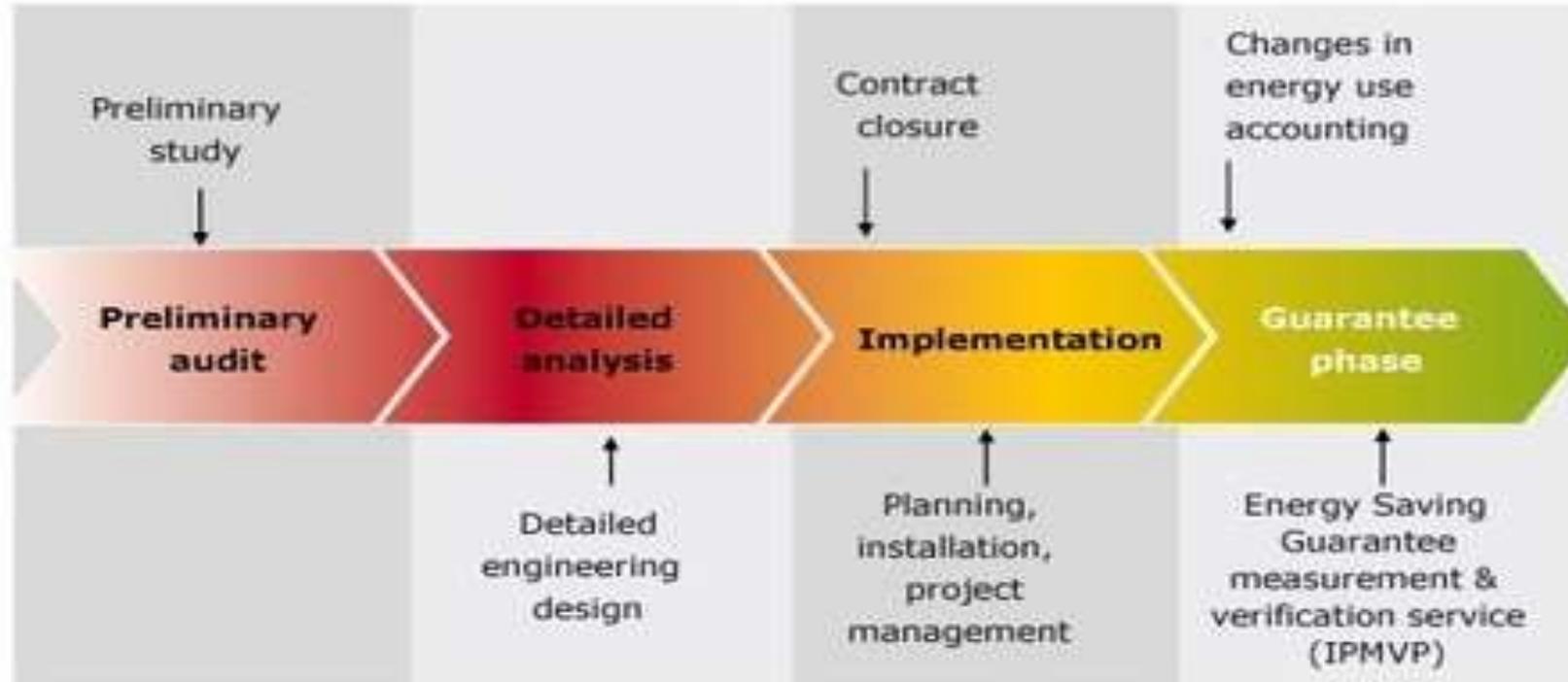
# STEPPING

*Supporting The EPC Public Procurement IN Going-beyond*

## Module 2 – Preliminary Phase of an EPC



# The 4 basic steps to the EPC development process



Source: European Association of energy services companies



# The choice of «priority» buildings

The first check which buildings are suitable for an EPC project can be made relatively easy.

Some qualities that might make a building a good EPC candidate include:

- Excessive or higher than market annual utility costs with savings opportunities;
- Equipment/systems are outdated or near the end of their useful life;
- Relatively consistent energy-use patterns over several years – relatively consistent facility use (i.e. office, bank, etc.) and stabilized occupancy;
- Access to several years of utility records;
- Assets identified for strategic repositioning (such as desire i.e. for LEED certification) or reported in the SEAP or other policy plans/documents to undergo a major renovation;
- Assets that are already planned to undergo a major capital improvement;
- Larger facilities with complex building systems and
- Larger facilities with high energy consumption to hot water (For example: public sport centres where there is a swimming pool).



# The choice of «priority» buildings

## VALUATION OF BUILDINGS SUITABLE FOR EPC AND POOLING OF BUILDINGS

<b>must haves</b>	<b>building 1</b>	<b>building 2</b>
the building		
...was not constructed or renovated during the last 3 years	✓	✓
...is owned by the client	✓	✓
...will be used in current way for the next about 10 years (no change in using planning)	✓	✓
...is constantly used and conditioned	✓	✓
a baseline can be defined (last 3 years)	✓	✓
<b>valuation of energy efficiency measures possible:</b>		
specific energy consumption is higher than standard of comparable buildings	++	+
absolute energy costs (in relation)	++	-
change of energy source	++	+
replacement of boiler	X	X

Source: EESI2020 project



## The preliminary phase: screening and check on consumption, existing contract and general conditions of buildings

Often activities such as check on historical building consumption, existing contracts (either on supply of energy or on O&M), general conditions of the buildings, check on saving potential and estimation of the volume of investment are carried out by an **EPC Facilitator** (i.e. energy agency or similar) along with the Energy Manager of the Public Body.

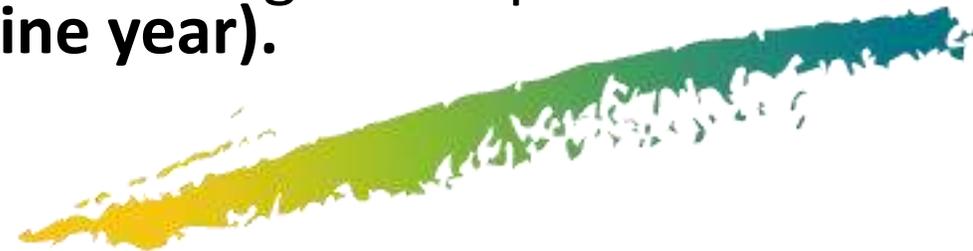
The basis of the **energy costs baseline** is the energy consumption in a reference year (e.g. past year before implementation of EPC) in connection with the energy supply prices applicable to the client at a certain key date (e.g. 31/12 of the reference year).



## The preliminary phase: screening and check on consumption, existing contract and general conditions of buildings

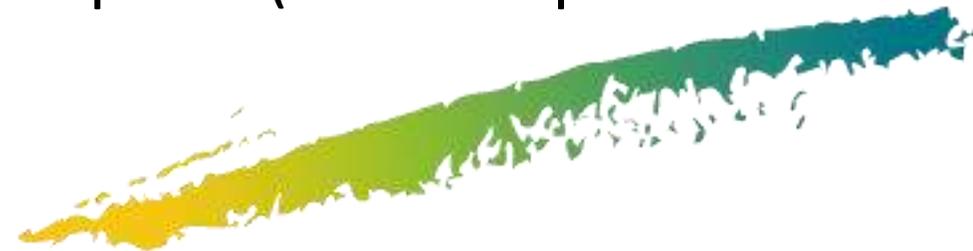
### Determination of the energy costs baseline:

- Higher energy prices are a better refinancing basis for efficiency measures.
- Maintenance costs are usually not included in the baseline and, accordingly, any maintenance cost saving (which may well be achieved) will not be rated as a cost saving within the meaning of the saving guarantee.
- All consumption units should be stated in kWh (if applicable with the appropriate factors/calorific values) to take account of possible changes of the energy sources (e.g. from oil to gas). For the calculation of CO<sub>2</sub> emission savings, the current CO<sub>2</sub> emissions and factors have to be shown in the baseline as well.
- The consumption of the respective energy demand types of the most recent completed calendar year preceding the EPC project will be used as the basis for the ESCO's saving guarantee and the annual proof of savings to be provided later on. That year is called **reference year (baseline year)**.



## The preliminary phase: screening and check on consumption, existing contract and general conditions of buildings

- To ensure that the selected year is representative, the underlying energy consumption figures should be compared to those of the two preceding years. As an alternative, an average consumption value of the three previous years may be defined as baseline. The calculation methodology has to be defined in the EPC contract. As specific energy prices for each metering point, if applicable broken down by price components such as kilowatt hour rate and basic price, these prices should be shown explicitly as reference energy prices in the EPC contract prior to the start of EPC.
- As soon as possible in the process, it is recommended to install **sub meters** to have a more detailed knowledge of the consumption (for example in relation to hot water or to lighting).



# The preliminary phase: screening and check on consumption, existing contract and general conditions of buildings

## Check List: Taking Stock of Your Building(s)

**Objective:** To collect data to determine if an energy performance contract process and project is worthwhile for your building(s).

### 1. Basic building information

- Facility description
- Number, size and type of building(s)
- Occupancy (How is the building being used? e.g. offices: 9 hours/day, barracks: 24 hours/day)
- Ownership (tenant, owned, leased, etc.)
- Building management structure (Who maintains and operates the buildings?)
- Critical processes and activities (Is energy use predictable and consistent?)

### 2. Baseline information

- By source and by building (where applicable): energy consumption and costs for
  - Electricity
  - Natural gas
  - Refined petroleum products or "fuel oil" (Remember, natural gas is a fossil fuel.)
  - Water
  - Other (biomass, wind power, solar)
- Electrical demand, costs and peaks
- Brief description of utilities' rate structures

### 3. Retrofit opportunities

- State of the existing energy equipment (service life, efficiency, performance issues)
- Potential retrofits on existing equipment
- Energy efficiency or maintenance savings opportunities
- Estimated savings
- Greenhouse gas reduction opportunities
- Renewable energy, cogeneration and geothermal opportunities, where applicable

### 4. Recommendations

- Identification of major areas that require more analysis
- Identify actions that can be taken immediately and longer-term actions
- Recommissioning to ensure the persistence of the energy efficiency improvements
- Suitability for an energy performance contract



**End of Module 2**

