

Examples of Energy Performance Contracts in building renovation



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About eu.esco



eu.bac is the European Building Automation and Controls Association. It represents the major European manufacturers of products and systems for home and building automation.



eu.bac has founded the European Association of Energy Services Companies (eu.esco) for promoting Energy Performance Contracting as the economically sustainable solution for improving the energy performance of existing buildings using the guaranteed energy savings to pay for the installation.

European Code of Conduct for EPC

- eu.esco is, together with EFIEES, the European administrators of the European Code of Conduct for EPC (former EU Transparency Project)

CURRENT STATUS (235 signatories):

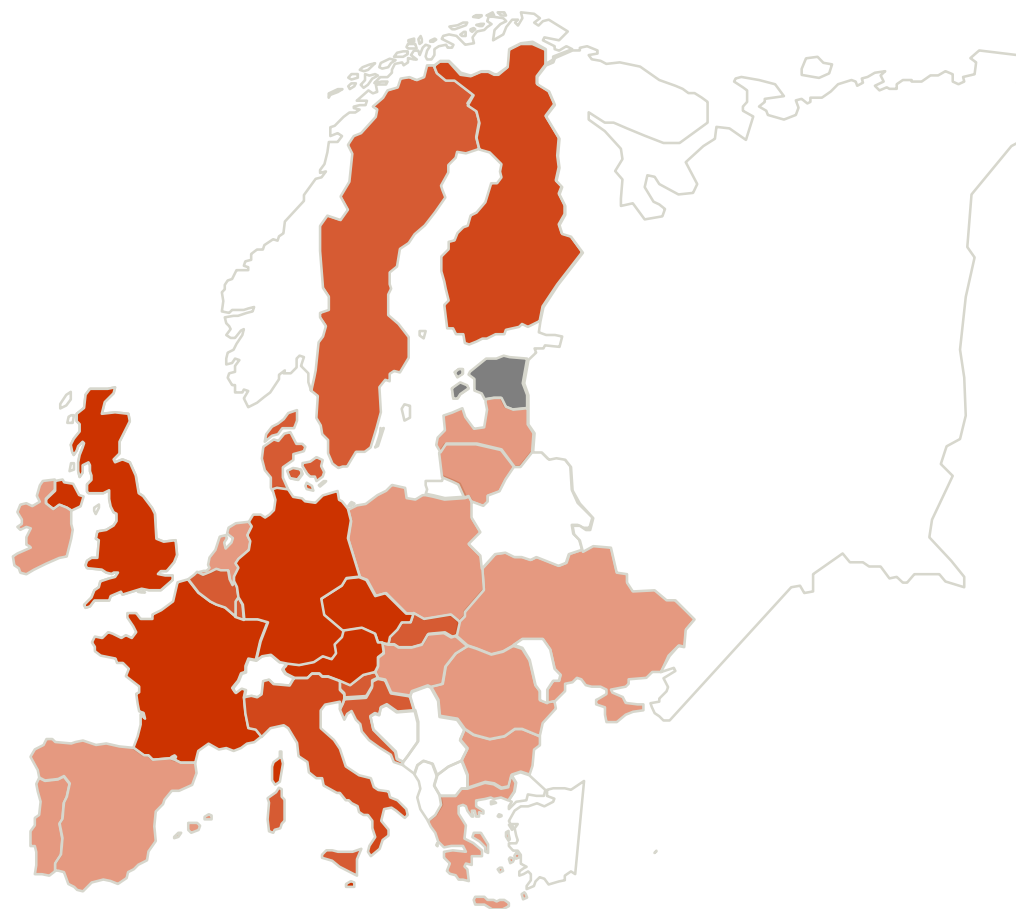
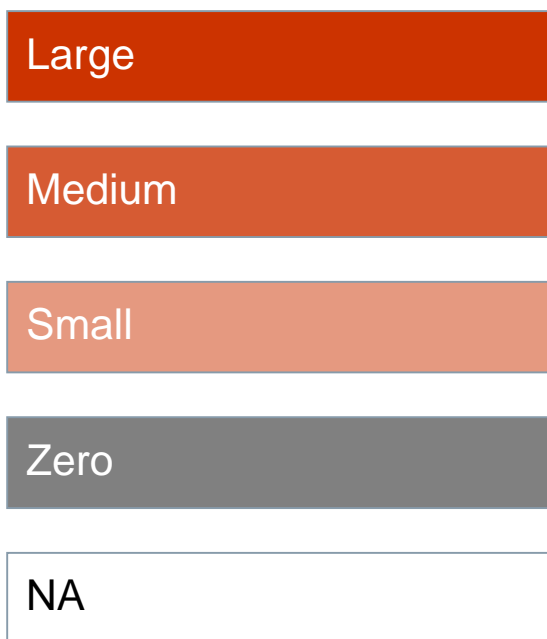
- EPC Provider 149
 - EPC Facilitator 70
 - Association of EPC 15
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- More signatories in The Netherlands (41), Spain (19), Czech Republic (17) and UK (17)



ESCO market across EU

Navigant: from \$2.7 billion to \$3.1 billion, EU DG JRC: 2.7 \$ billion

The Economist: 56\$ billion



New measures in revised EPBD

- **RECITAL 16: FINANCIAL MECHANISMS AT THE CENTER OF NATIONAL LONG-TERM RENOVATION STRATEGIES**

Financial mechanisms, incentives and the mobilisation of financial institutions for energy efficiency renovations in buildings should have a central role in **national long-term renovation strategies** and be actively promoted by Member States. Such measures should include encouraging energy efficient mortgages for certified energy efficient building renovations, **promoting investments for public authorities in an energy efficient building stock, for example by public-private partnerships or optional energy performance contracts**, reducing the perceived risk of the investments, providing accessible and transparent advisory tools and assistance instruments such as one-stop-shops that provide integrated energy renovation services, as well as implementing other measures and initiatives such as those referred to in the Commission's Smart Finance for Smart Buildings Initiative.

New measures in revised EPBD

- **ART. 14 BUILDINGS COVERED BY EPCs EXEMPTED FROM REGULAR PHYSICAL INSPECTIONS OF HEATING AND AIR COND. SYSTEMS:**

Technical building systems that are explicitly covered by an agreed energy performance criterion or a contractual arrangement specifying an agreed level of energy efficiency improvement, such as **energy performance contracting**, or that are operated by a utility or network operator and therefore subject to performance monitoring measures on the system side, shall be exempt from the requirements laid down in paragraph 1, provided that the overall impact of such an approach is equivalent to that resulting from paragraph 1.

Various stakeholders have different interests



Show personal commitment and have a long term perspective

The path forward → The customer rules the game

Clear Goals

Define clear financial, performance, savings or other goals and any other metrics of success



Whole-Building Approach

Consider / approach all potential opportunities



Transparent Baseline

Baseline developed in collaboration with building staff, understood and agreed upon by all parties involved



Lifecycle Cost Analysis

Consider energy, operational, and maintenance savings as well as revenue streams from incentives and compliance risks



Gain optimal balance of innovation and cost-effectiveness and be prepared for the future

The path forward → The customer rules the game

Sound Investment Proposal

Cost overview and guaranteed savings allows to make investment decisions with confidence



Guaranteed Performance

Provide certainty that the installation will perform over periods → up to 15 years



In-dept commissioning

Realize the full efficiency gain from new and existing systems



Monitoring, measurement, verification

Ongoing monitoring-based commissioning should also be considered



Project will be executed and perform as designed;
operations, maintenance, repair and replacement are secured

City of Berlin, 164 municipal Buildings (research centers, day-care, sport facilities)



Duration of the EPC contract: 12 years

Technical solution(s):

- Development and realization of an energy efficiency concept
- Regulation of heat generation/distribution
- Renewal of air conditioning and ventilation technology
- Replacement of lighting systems
- Installation of water technology
- Controlling, monitoring and maintenance measures

Results and benefit(s)

- € 1.14 million immediate budgetary reduction for Berlin
- € 5.30 million guaranteed energy cost savings annually
- € 47.7 – € 63.6 million guaranteed savings for Berlin over contract period
- 29.000 tones/p.a. reduction in CO₂ emissions annually (25%)

Federal Schools in Lower Austria



Results and benefit(s)

- Reduction of the energy costs, cut of the high maintenance efforts
- Annual energy costs before modernisation of €3,12 m
- Guaranteed annual cost savings of €722.330 (23.15%)
- Reduction of annual CO2 emissions of 2.880 tonnes

Technical solution(s):

- New regulation and control systems
- Single room control
- Application of reference detectors and thermostats
- Hydraulic equipment
- Damping and insulation of the windows
- Condensing boiler and exhaust chiller
- Heating pumps and solar plants
- Heat recovery at ventilation systems
- Optimising of the ventilation systems
- Energy saving lamps
- Time switch towards stand-by

Non Technical solution(s):

- Project "user motivation for energy-conscious behaviour"

Amstetten (Austria), complex of 27 buildings



Result(s) and benefit(s)

- Energy costs before modernisation: €355.000
- Guaranteed energy costs savings: €75.000 p.a.
- Reduction of CO2 emissions: 25% p.a.
- Investment: €735.000

Duration of the EPC contract: 10 years

Technical solution(s):

- Boiler upgrade
- Solar collectors for domestic hot water at the stadium
- Upgrade control technology
- Rebuild hydraulic systems (distributors, pumps, etc.)
- Window insulation, replacement
- Partial upgrade of lighting systems
- Adding meters and energy management

Non technical solution(s):

- Environmental awareness trough User motivation in schools and kindergarten