



# Digital monitoring, inspection and the role of BACS in the new EPBD



# Revision of the EPBD

## A STRENGTHENED DIRECTIVE

✓ Entered into force on **9 July** – **Transposition** by March 2020

✓ **Stronger long term renovation strategies**

- Decarbonisation by 2050,
- Solid financial component.

✓ **Promotion of smart technologies**

- Requirements on automation and control (e.g. BACS),
- Smart readiness indicator,
- Requirements on electromobility recharging infrastructure.

✓ Enhanced transparency of **energy performance calculation** and requirements.

✓ New provisions on **Inspections**

✓ Commission will **support** Member States in the transposition



## Revision of the EPBD

### INSPECTIONS

#### Inspection: aims and objectives

- Evaluate the performance of the system
- Identify issues or problems
- Propose solutions or improvement measures
- Log in results for future use

#### Provisions on inspections

- Article 14 – Heating systems
- Article 15 – Air-conditioning systems

## Revision of the EPBD

### INSPECTIONS

#### Inspections – main changes under the revised EPBD

##### Article 14-15 (1)

- New thresholds – from 20 kW to 70 kW
- Combined heating / air-conditioning and ventilation systems
- Performance under typical or average operating conditions

##### Article 14-15 (2)

- Exemptions for systems covered by energy performance criterion or contract

- Article 14-15 (3)

- Alternative measures

## Revision of the EPBD

### INSPECTIONS

#### Inspections – main changes under the revised EPBD

##### Article 14-15 (4)

- Non-residential buildings over 290 kW
- Must be equipped with Building Automation and Control Systems\*
- By 2025

##### Article 14-15 (5)

- Continuous electronic monitoring
- Effective control functionalities

##### • Article 14-15 (6)

- Exemptions for buildings complying with (4) and (5)

## Revision of the EPBD

### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 1 – Different understanding

Ex 1 - "Building automation is the automatic centralized control of a building's heating, ventilation and air conditioning, lighting and other systems through a building management system (BMS) or building automation system (BAS). The objectives of building automation are improved occupant comfort, efficient operation of building systems, reduction in **energy** consumption and operating costs, and improved life cycle of utilities."

Ex 2 - "XXX is a building automation and control system for small and medium-size buildings. It offers all the products and tools for complete system solutions:

- Primary plant control
- Room automation (both HVAC and electrical)
- Multi-site, remote operation and management
- Remote **energy** monitoring and billing"

## Revision of the EPBD

### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 1 – Different understanding

Ex 3 - "Building Automation Systems (BAS) are centralized, interlinked, networks of hardware and software, which monitor and control the environment in commercial, industrial, and institutional facilities. While managing various building systems, the automation system ensures the operational performance of the facility as well as the comfort and safety of building occupants.

Typically, such control systems are installed in new buildings or as part of a renovation where they replace an outdated control system."

Ex 4 - "Building Automation (BA) can refer to Building Automated Control Systems (BACS), Building Automation Technologies (BAT) as well as Home and Building Energy Management Systems (HEMS/BEMS) solutions."

## Revision of the EPBD

### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 1 – Different understanding

##### Revised EPBD - Article 2 (3a)

- *'building automation and control system' means a system comprising all products, software and engineering services that can support energy efficient, economical and safe operation of technical building systems through automatic controls and by facilitating the manual management of those technical building systems*



## Revision of the EPBD

### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 1 – Different understanding

##### Revised EPBD - Article 14-15 (4)

- *continuously monitor, log, analyse and allow for adjusting energy use;*
- *benchmark the building's energy efficiency, detect losses in efficiency of technical building systems, and inform the person responsible for the facilities or technical building management about opportunities for energy efficiency improvement;*
- *allow communication with connected technical building systems and other appliances inside the building, and be interoperable with technical building systems across different types of proprietary technologies, devices and manufacturers."*

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### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 1 – Different understanding

##### Revised EPBD - Article 14-15 (4)

- *continuously monitor, log, **analyse** and allow for adjusting energy use;*
- ***benchmark** the building's energy efficiency, **detect** losses in efficiency of technical building systems, and **inform** the person responsible for the facilities or technical building management about opportunities for energy efficiency improvement;*
- *allow **communication** with connected technical building systems and other appliances inside the building, and be **interoperable** with technical building systems across different types of proprietary technologies, devices and manufacturers."*

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### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 2 – Identifying buildings with BACS

- Identify those buildings over 290 kW
- Identify which BACS are BACS\*
- Identify those buildings with BACS\*

#### Issue 3 – Install BACS\*

- >150 000 buildings
- By 2025
- Across 28 Member States
- Subject to technical and economic feasibility

## Revision of the EPBD

### ARTICLES 14 and 15 - BUILDING AUTOMATION AND CONTROL SYSTEMS

#### Issue 4 – Energy savings

- System must "analyse, detect, inform"
- Building owner must act
- Low hanging fruit
  - Avoid saturation
- Measures requiring investment
  - Trigger the next step
  - Support business case

## Revision of the EPBD

### ARTICLES 14 and 15 – Residential buildings

#### **Member States may lay down requirements to ensure that residential buildings are equipped with**

- Continuous electronic monitoring
  - Measuring energy efficiency
  - Informs building owners and managers when it has fallen or when service is necessary
- Effective control functionalities to ensure optimum generation, distribution, storage and use of energy
  - Buildings or building units with individual systems
  - Buildings with centralised systems



# ENERGY UNION

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## Thank you

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<https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>