13 November 2018 REHVA BRUSSELS SUMMIT

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

1117

European Commission

Pau Garcia Buildings team - Unit Energy Efficiency DG ENERGY, European Commission

A STRENGTHENED DIRECTIVE

Entered into force on 9 July – Transposition by March 2020



- 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



European Commission



- The totics is committed to developing a naturable, temperature, nonver and docabonied mergy cyrom. The topery tokino and the foregr and Grane the Refer structures distribution. Unice commitments to reduce gramshous gas anniants further by at later 40 % by 2003 as compared with 1990, to increase the properties on Smore-Mole subsequences and the structure of the
- To such those objectives, the 2016 writer of the Lineari nerge efficiency legislation acts combine a reastements of the Distribution energy difficurity type for 2000 are reported by the Dayness Council comductors of 1004.4 series of the core protocols of Distribution 2012/2016 of the European Parlament and of the Council (%) and Distribution 2010/1016 of the European Hindeense and of the Council (%) and a sufficience of the Fastistican European Distribution and Distribution 2010/1016 of the European Fastistic European European
- (3) Directive 2016/31/EU required the Commission to carry out a service by 1 January 2017 in the light of the experience gained and programs made during the application of that Dentive, and, if necessary, to make proposal.
- (ii) To prepare for that review, the Commission took a series of steps to gather evidence on how Directive 2010/31/EU had been implemented in the Member States, focusing on what worked and what could be improved.
- 1) The outcome of the review and the Commission's impact assument indicated that a series of amendments ar required to strengthen the current provisions of Directive 2010/31/EU and to approximate of the series of an experimental series of a se
- The Union is committed to developing a notationble, competitive, secone an To near that good. Monther States and investors need remains that and emissions (in a Union, by 2000) Monihol States who does a controlling emission (in a Union, by 2000) Monihol States whold need a controlling energy supplies and reducing final energy communition. To that end, Me



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



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



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)



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"



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."



European Commission

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



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."



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."



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



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



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





Thank you

Sylvain Robert Pau Garcia Unit Energy Efficiency DG ENERGY, European Commission

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

14 #EnergyUnion