



The new EPBD on green buildings

Let's not allow any watering down

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CLEAN ENERGY FOR ALL EUROPEANS



Energy Union Governance:

The regulatory framework for post-2020 to unblock the green growth potential inside EU (2018/1999)



Energy Efficiency
(*EED* 2018/2002,
EPBD 2018/844)



Renewables
Revised *RED*
(2018/2001)



**New electricity
market design**



**Energy prices
and costs report**

Energy Performance of Buildings Directive

The goal of 2018 revision

- **Renovation of national stock** of residential and non-residential buildings, both public and private
- into a highly energy efficient and decarbonized building stock **by 2050**
- facilitating the **cost-effective transformation** of existing buildings
- **into nearly-zero energy buildings.**

EPBD Recast 3

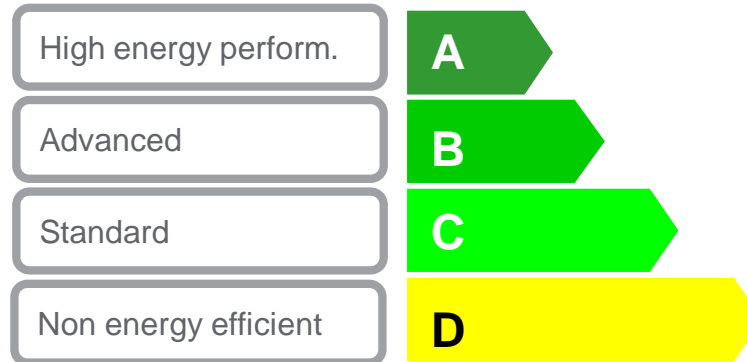
Key provisions

- **Long-term strategy** for mobilizing investment in the renovation of national stock of buildings
- **Active Energy Efficiency (Building Automation) as integral part of the methodology** to assess the energy performance of buildings
- **Mandatory deployment of BACS in large non-residential buildings:** non-residential buildings (also already existing) with an effective rated output of over 290 kW for heating or air-conditioning should be equipped with building automation & controls (where technically and economically feasible) by 2025.
- **Possibility** for Member States to set requirements for **residential buildings:** electronic monitoring of systems efficiency and control to ensure optimum generation, distribution, storage and use of energy
- **New Smart Readiness Indicator**

UNI EN 15232

BACS rating

- The European standard EN 15232 «Energy performance of buildings – Impact of Building Automation, Controls and Building Management» has been around since 2007
- It *determines the impact of BACS* on the energy efficiency of buildings, classifying building automation and control systems of technological and electrical plants according to *four classes (A, B, C e D)* depending on their *energy performance*



Control functions and energy efficiency classes

- For each **control function** several **performance levels** are given
- For each class there are **minimum performance levels** that must be ensured for each automation function

		Performance class							
		Definition of classes							
		Residential				Non residential			
		D	C	B	A	D	C	B	A
AUTOMATIC CONTROL									
1	HEATING CONTROL								
1.1	Emission control	<i>The control system is installed at the emitter or room level, for case 1 one system can control several rooms</i>							
	0 No automatic control								
	1 Central automatic control								
	2 Individual room control								
	3 Individual room control with communication								
	4 Individual room control with communication and presence control								
1.2	Emission control for TABS								
	0 No automatic control								
	1 Central automatic control								
	2 Advanced central automatic control								
	3 Advanced central automatic control with intermittent operation and/or room temperature feedback control								
1.3	Control of distribution network hot water temperature (supply or return)								

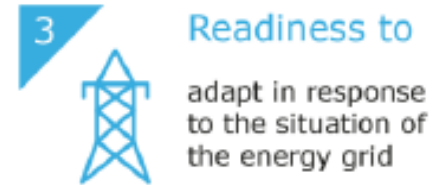
Benefits of BACS

- BACS enable energy savings from 30% to 50% on average in non-residential buildings
- They facilitate the integration of RES and building connection with the grid
- They prevent technical building systems from coming into conflict
- **Low-capital investment (30€/m2), payback 2-3 years**

Smart Readiness Indicator (SRI)

- It is a voluntary European scheme (which in its country transposition might however become mandatory) introduced by EPBD 3.
- It classifies the technological readiness of buildings **to interact with their occupants and the energy grids, and their capabilities for more efficient operation and better performance** through ICT technologies.
- The SRI aims at making the added value of building smartness more tangible for building users, owners, tenants and smart service providers.

MEASURE THE TECHNOLOGICAL READINESS OF YOUR BUILDING



SRI calculation

- Impact criterium (e.g. energy saving)

10 DOMAINS



- Domain (e.g. heating)
- Domain service (e.g. heat emission control)
- Functionality level (e.g. individual room control)



ONE SINGLE SCORE CLASSIFIES THE BUILDING'S SMART READINESS

8 IMPACT CRITERIA

The total SRI score is based on average of total scores on 8 impact criteria.

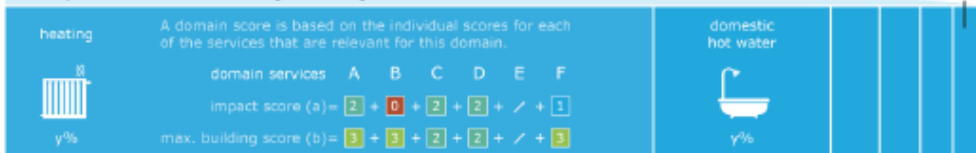


An impact criterion score is expressed as a % of the maximum score that is achievable for the building type that is evaluated.



10 DOMAINS

One impact criterion score is the weighted average of 10 domain scores.



not every domain is considered to be relevant for each impact criterion

DOMAIN SERVICES

All relevant domain services are scored according to their functionality level.



EPBD 3 implementation – Why it matters

- Countries are currently drafting implementation laws for transposing the revised EPBD (deadline: March 2020)
- The European Commission has presented its guidelines to support the transposition
- Through implementation laws, Member States have the possibility to slightly alter original rules

**Risk of having
exemptions, dilution**

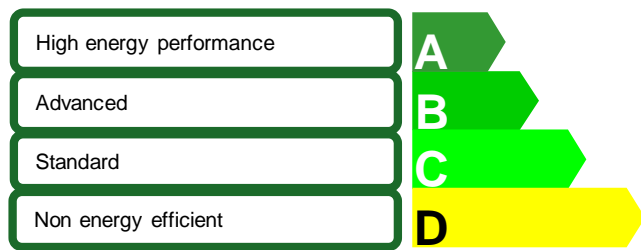


Full recognition of **active** energy efficiency

EN15232 class indication should be added to building energy performance certificates (APE in Italy, already compulsory for new, renovated, sold and rented buildings).

This would bring about:

- the knowledge of benefits brought by BACS
- the **effective** implementation of «D.M. Requisiti Minimi of 2015» (obligation of minimum class B for new or deeply renovated non-residential buildings)



Mandatory BACS deployment

Exceptions should not become the rule

- It is essential to avoid technical and economic exemptions
- Cases without techno-economic feasibility should be **clearly justified**
- Economic feasibility should be related to upfront and operation costs and/or to investment payback period
- E.g.: feasible if $< 100\text{eur}/\text{m}^2$ and/or payback $< 7\text{-}8$ years

SRI

- **It creates value** for building owners, tenants, occupants, facility and energy managers, IT providers
- Contributes to **enhancing energy efficiency, comfort and well-being** in buildings
- Improves **synergies among policy segments**: energy, buildings and also ICT
- Contributes to the **integration of the buildings sector into future energy systems and market**
- No public indicator about smart buildings on the market yet

SRI implementation should be **mandatory**, for all building types, at least in case of new construction and deep renovation

BACS as an alternative to inspections

- For EPBD 3, buildings with BACS can be exempted from mandatory inspections of heating/air-co systems
- **A system should be put in place to comply with this provision.**
- BACS can show their indications to both owners and maintainers, so that the former can save money and the latter can keep their activity.

Long-term strategy

To mobilize investments in the renovation of national stock of buildings:

- **Plan** the incentives, at least until 2030, first step of the road map foreseen by EPBD
- Tax deductions for energy renovation should be **stabilized**
- Tax deductions should favour measures with the best available efficacy and efficiency
- Measures (both insulation and plants) that reach NZEB level should benefit from better incentives
- **Inform and raise awareness** about extended benefits introduced by a brave EPBD implementation

Long-term strategy

It should **exploit synergies between EE and renewables** to boost self-consumption through heat pumps, RES distributed generation, high-efficiency cogeneration and low-enthalpy geothermics:

- Promote the **simplification of the authorization procedures** of these plants/devices
- **Simplify the technical provisions** (small size)
- Favour the **replacement of existing conventional boilers** with these more efficient and sustainable technologies
- Provide incentives for **scrapping heating systems no more complying** with current regulations on emissions
- Adopt specific measures for the **installation of recharging points for e-mobility**

EPBD Recast 3

Brussels, 17 April 2018

“New rules will make buildings smarter and more energy efficient, saving money and creating jobs in the renovation and construction sector.”

Jean-Claude Juncker



Life Is On

Schneider
Electric