

Team member  
Felix Van EykenPhone  
+32 (0)466 90 04 01Email  
felix.vaneyken@eurovent.euDate  
2019-09-18

## Building Automation and Control Systems (BACS)

### Preparatory study launched after last years' scoping study

**In October 2018, the 'scoping study' regarding BACS ended. It resulted in identifying BACS as a candidate for a full Ecodesign preparatory study that may result in a Regulation. The 'preparatory study' started in July 2019. Together with Ms Charlotte van de Water, Expert Energy & Climate for Buildings of the member association Agoria, we have summarised the outcome of the scoping study and outlined the challenges for BACS and products that integrate control.**

### Ecodesign & Energy Labelling: follow-up study on building automation started (ENER Lot 38)

In July 2019, the kick-off of the preparatory study 'Building Automation and Control Systems (BACS)' took place. This study is the second phase following the scoping study that explored paths towards the establishment of Ecodesign and energy labelling regulations for BACS.

An initial scoping study took place between September 2017 and October 2018. The link to the report and annexes is listed at the end of this article.

This article provides an overview of the most important items that will be up for discussion and that should interest all manufacturers of equipment integrating controls, in particular BACS.

### Recap of the regulatory situation

Currently there are no separate Ecodesign or Energy Labelling Regulations for the product group 'Building Automation and Control Systems' (BACS). BACS is a product groups that has been identified in the Ecodesign Work Programme 2016-2019 as having a high energy savings potential.

This study, appropriately referred to as a 'scoping study' was the first step towards the 'preparatory study'. After completion of the scoping study, the 'preparatory study' was launched to investigate a concrete proposal for energy performance requirements. The preparatory study runs from July 2019 to December 2020.

If the 'preparatory study' finds it useful to establish Ecodesign and Energy Labelling requirements for BACS products, all the steps in the process will be followed to establish the Regulations as outlined in figure 1 below. The European federations will take the lead in giving feedback at the moments marked with an asterisk.

The national associations will be able to provide advice on their positions towards the European associations where they are a member and directly the national authorities. Formally the European associations can intervene until the 4-week feedback mechanism period. Thereafter the European associations rely on their contacts with the European Commission and Member States.

The member associations of Eurovent can inform and consult their Member States representatives at any time, but importantly also once the approval of the regulation is on the agenda (steps marked with a blue asterisk).

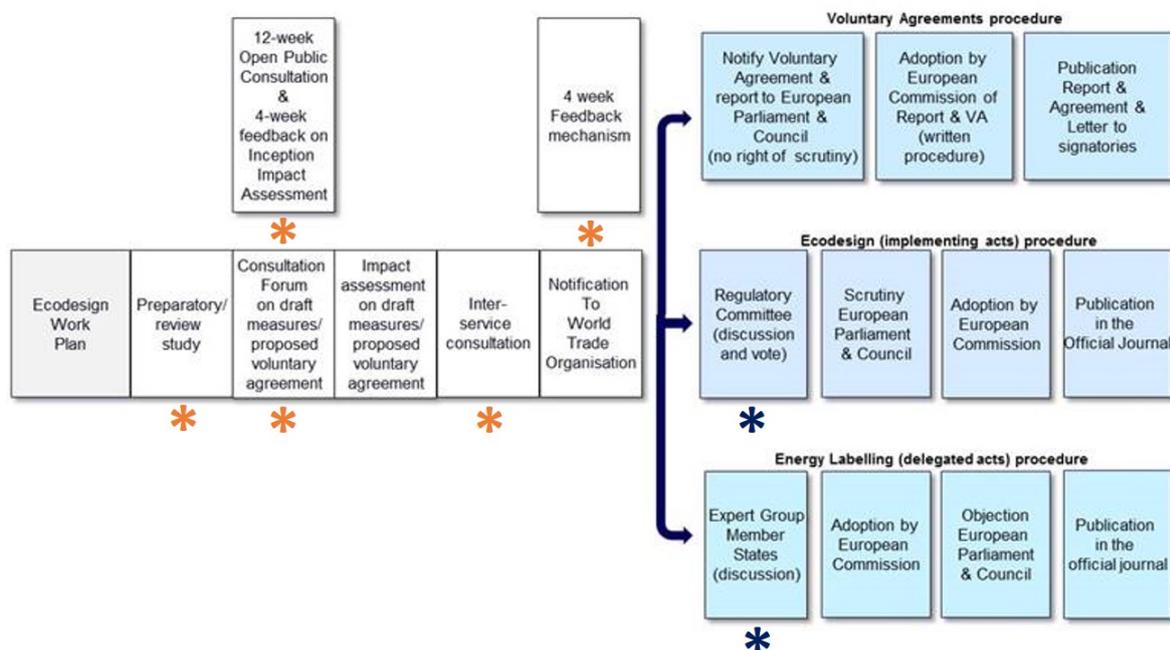


Figure 1: Overview of the stakeholder consultations (asterisk) in the Ecodesign and Energy labelling review or preparation process (Source: European Commission, DG Energy)

## Results of the first study

The BACS scoping study looked at the possible justifications for the introduction of regulations and includes a proposal on what the Ecodesign and Energy Labelling requirements might be.

Several reasons are mentioned to develop regulations: the limited visibility of the energy performance of BACS, the limited knowledge about their savings potential, the implementation options and the limited application by authorities.

The scoping study includes an inventory of the available definitions and product categories for BACS, existing European and non-European standards and legislation as well as a screening of the existing Ecodesign product groups.

Reference is made to several existing policy measures under the Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED) and possible (installation) requirements at system level, that could, as an alternative to Ecodesign and Energy Labelling Regulations, increase the visibility and awareness of BACS. Requirements for the functionality, compatibility, accuracy and interoperability of BACS are specifically mentioned as a subject in the context of Ecodesign.

## Recommendations for the follow-up – the preparatory study

The scoping study concludes that the greatest potential for Ecodesign and Energy Labelling measures lies with the definition of its functionality, accuracy and self-consumption of the BACS.

The study proposes to review the bonus system applied in existing (e.g. for space heaters (ENER Lot 1, Regulations 2013/811-812-813-814). The motivation provided in the study is that these bonuses may not be in line with the standard EN 15232. The scoping study refers to the space and water heaters product

groups as regulations that already include a bonus system. The concept of bonuses is considered in many ongoing revisions.

It is recommended that the preparatory study looks at the interoperability aspects of BACS, the development of requirements for smart appliances (ENER lot 33) and circular economy aspects such as reparability.

The study also proposes the development of a 'Smart BACS energy savings calculator' to determine the energy performance of BACS.

The scoping study does not clearly identify the BACS or the products that can be defined as BACS and that would fall within the scope of the preparatory study. An analysis of the different options for defining the scope and corresponding energy saving potential is missing in the scoping study.

### **Discussion item 1: Scope of the regulation**

The definition of the scope of the new regulations remains an important issue because control systems are already an integral part of the scope of existing Regulations (e.g. space heating, air conditioners).

In the ongoing revisions of Ecodesign and Energy Labelling regulations, (e.g. such as local space heating (ENER lot 20) and lighting (ENER lot 8, 9 and 19), control systems are being added to the existing scope.

If the BACS product group would include all control systems, it will become an issue as to how to deal with the provisions in the existing Regulations. Could the BACS aspect be removed from existing Regulations and moved to the future BACS Regulation? Because of the legal status of Regulations, this would need to follow (new) revision procedures (see figure 1) for all the Regulations concerned. Such a process would require the involvement of all experts that are part of the development of existing Regulations and their revisions.

### **Possible consequences of bringing all control systems into one group**

The proposal to include all control systems in one separate product group raises the question of how this affects the evaluation of control systems in the energy performance of different products. For example, the revision Local Space Heater Regulation (ENER lot 20) is proposing to award bonus points for the integration of control systems because their integration will improve the energy performance of the local space heater. Within this revision process a formula has been proposed for inclusion in the revised regulation. It is not clear how these specific control system requirements could be transferred to a Regulation dealing with BACS.

The fact that there could be BACS requirements in a BACS Regulation and different control requirements in other Regulations, to be applied simultaneous to a product could cause confusion as there could be overlapping and non-overlapping or even contradictory requirements.

The non-inclusion of control systems in product regulations (e.g. for space heaters) is, at present, not an option because it would neglect the energy performance improvement potential provided by the (integrated) controls in space heaters.

It remains questionable if it would be possible to determine the energy performance of BACS independently from the product it is to control.

### Ways forward?

The above discussion shows that a clear definition for the scope is essential for the preparatory study to be successful. The scoping study did not provide for clarity.

A possible way forward could be to consider a horizontal regulation that would contain general guidelines for the assessment of the control systems in the individual product groups. This is the approach that is considered for dealing with material efficiency (in CEN-CLC/JTC 10). In practice this would lead to the development of several standards to guide the requirements for each specific product groups.

Another option could be to define a separate product group for the building automation and control systems excluding products that are already included in an existing product group.

A combination of these two options or other alternatives would also be possible. Given the objective of the scoping study, the question remains as to what option would best suit the policy objectives. increased energy efficiency of the products.

### Discussion item 2: Energy savings calculator

The scoping study suggests investigating the introduction of an online "smart BACS energy savings calculator" in the preparatory study. Such a calculator would provide for the elements to determine an energy efficiency index. An online calculator would make it possible to model the interaction between technologies and avoid double counting of the energy savings. This may prove to be ambitious and complex because the interactions between buildings and products integrated into building would have to be accounted for to determine the energy efficiency of BACS.

### Determination of the energy efficiency of BACS products

The difficulty in determining the energy efficiency of BACS is that its potential is highly dependent on its application; the interaction between the building, the technical installation of products, the BACS itself and (indirectly) the impact on the composition of the energy demand.

These parameters and their aspects are difficult to trace back to a stand-alone product.

At product level, up to now, this issue is dealt with in existing Regulations by providing the option to assign bonus points to determine the energy performance of a product when a control system is integrated or supplied. These bonus points are determined per product group.

On the other hand, a system of bonuses might be less suitable for stand-alone BACS product group as it leaves little room for distinction among the various control systems available. This consideration would argue in favour treating control systems within specific product group as is currently the case for space heaters. The scoping study recommends as a possibility the review of the bonus systems towards a standardised bonus system.

### Interaction with ongoing other files relating to smart technologies

Similarities can be detected among the proposal for the BACS energy savings calculator, the Smart Readiness Indicator (SRI) and in a different manner the Energy Labelling Database (EPREL). The calculator advocated in the scoping study would have an option to generate energy labels and would thus be able to support the market surveillance activities by the authorities.

This echoes the considerations when it was decided to develop the European Product Register Energy Labelling (EPREL). An integration into the EPREL database is also proposed among the policy options.

Making the European Smart Readiness Indicator (SRI) available in a database is currently under consideration.

Ultimately, one well-functioning database would be preferred over the development of several separate databases to limit the administrative burden. Given the strong similarities in the different proposals, there would be an opportunity to explore possible integration options.

### **Next steps**

Now that the preparatory study has started, it is important to see how the scope will be defined. A first stakeholder meeting is announced for February 2020 and the second and last one in November 2020.

### **Recommended actions**

Manufacturers and associations are recommended to register to the preparatory study website.

The Product Groups should consider the possible impact on their activities.

### **Related documents and links**

All related documents and articles can be found in the respective sections in the right sidebar.

- Website BACS – ENER Lot 38 (continues from the scoping study):  
<https://ecodesignbacs.eu/welcome>
- Scoping study – Task report:  
[https://ecodesignbacs.eu/sites/ecodesignbacs.eu/files/attachments/BACS\\_scopeReport.pdf](https://ecodesignbacs.eu/sites/ecodesignbacs.eu/files/attachments/BACS_scopeReport.pdf)
- Scoping study – Annexes:  
<https://ecodesignbacs.eu/sites/ecodesignbacs.eu/files/attachments/BACSscopeReportAnnexes.pdf>