

16th February 2018

VITO NV
Boeretang 200
2400 Mol
Belgium

Dear Pasquel

BEAMA is the trade association for the UK Electro-technical industry, representing over 200 companies in the power, electrical and building services sectors. Our members, who range from multinationals to SMEs, manufacture the wide range of equipment required for end-to-end electrical systems.

BEAMA therefore represents a wide range of manufacturers in the controls and building automation sector, as well as manufacturers of heating and ventilation systems for buildings and associated management systems. This study is therefore highly relevant to our members, for control manufacturers, but also due to the potential affect any regulatory measure may have on the systems that integrate with BACS within a building (namely heat, hot water and ventilation systems). Many of our members also provide component parts to BACS manufacturers, including actuators, sensors.

We are writing to VITO at this early stage in the preparatory study to outline our views on scope, and also to express more broadly how we feel the routes to market for BACS and similar system based products should evolve. Increasingly eco design and energy labelling are addressing systems, and in this case, we need to consider new routes to market and the evolution of associated product regulation. Here we reflect on some precedents that have been set for other control products and package labels. We attended the meeting on the 17th of January and hope to continue close engagement with this work. We have therefore reflected on some of the questions raised at this meeting.

Scope

The initial task for the preparatory study in determining the defined scope of the product group(s) and system boundaries is a real challenge given the heterogeneous nature of BACS. The energy saving nature of BACS is also due to their interaction with other products / systems, therefore the ability to determine an efficiency/ performance rating prior to installation will be difficult. This is further amplified by the nature of BACS being tailored to a building and their performance being specific to the nature and characteristics of that building. The preparatory study for the 2016-2019 eco design working plan identified that the

main energy savings for BACS are not achieved in reducing the standalone energy consumption of the BACS themselves, but are driven by the coordination of several controlled products with BACS e.g. preventing heating and cooling in the same zone at the same time. We fully agree with this. Furthermore, we are aware that the performance of BACS is highly dependent on the continued maintenance of the system. All of these system challenges will have important implications for the scope and system boundaries set as well and the appropriate route to market that should be chosen.

BEAMA agree with the defined scope of a BACS product being broadly as a control loop that consists of a sensor, an actor (valves or actuators) and a controller that executes the logics. The main components considered so far in the work plan are

- Duct temperature sensors/ immersion temperature sensors
- Automation stations/ controllers
- Valves and actuators

We have concerns over using EN15232 as the product boundary. For non-residential systems with Building Management Systems (BMS) its fine but we don't believe its appropriate for residential. For residential a wider evidence base will be required to ensure that systems comparisons can be made robustly.

In the initial review in the workplan and the communications since the launch of the study we are under the impression VITO will be considering the following elements in the study:

- Minimum requirements for the sensitivity and permitted tolerances of control products
- Improving the user friendliness of BACS to aid installation and maintenance.
- Improvement the re-commissioning / maintenance of the system
- Interoperability and communication platforms for integration with other product/systems.

While it may be easy enough to draw a boundary around the BACS product at point of sale (based on existing standards EN15232), we know the system boundary of this will be very different once installed. Furthermore, any regulatory decision made on the communication elements will have knock on affects for any product/systems integrating with a BACS product on installation. Therefore, it is inevitable a wide range of sectors and product manufactures may need to be consulted on in the process of this study.

We agree the scope of this study should be broadened to consider the role BACS play in demand management/ flexibility, as well as demand reduction / energy efficiency. This would

ensure consistency with the work that is ongoing under Lot 33 as well as the Smart Readiness Indicator and EPBD objectives. There is so much value to the energy system of being able to manage demand that to miss the opportunity to put it firmly onto the map for product design would be a real loss. BACS must evolve rapidly if Zero Carbon by 2050 is to be achieved, and therefore it is essential that BACS solutions grow to include an interface with the energy supplier or intermediary to enable the development of all forms of demand management and demand reduction.

From a demand reduction/management perspective there is a real risk of sub-optimising at the component level through regulations like eco design and energy labelling. BACS components operate as part of a wider system, so the real value comes from thinking at the system level, not the component level. To do this well it needs to be done at the building level and how its designed and operated (ongoing operating procedures are as important as construction), then once this is established it is possible to drill down into how the components operate, and interoperate, to achieve the building level efficiency and performance. We therefore see some scope to ensure the work being undertaken for the Smart Readiness Indicator links with any measure recommended through this study. We have seen from recent communications from VITO that this seems to be case and we hope in the initial scoping discussions this is acknowledged. However, we do believe a solid understanding of the building level system design needs to be established first before regulating at the product/ system component level.

We agree the study should be combined and cover both residential and non-residential. It is likely that residential and non-residential BACS solutions will learn from and inform each other, so that the border between BACS applications for the two markets becomes blurred. However, the Zero Carbon by 2050 initiative has identified the greatest challenge to be the required revolutions in domestic heating and the domestic energy markets. For this reason, it is most important that BACS applications are effectively extended into the residential market, with the non-residential market being of secondary importance. At the meeting VITO discussed the options to potentially split the study in order to refine the scope and ensure this is manageable. One option was to split the study into two tiers, and this could be separated by building size or type (residential and non-residential). While we can see why this may need to be done to make the work manageable, following discussions at the stakeholder meeting we believe the two need to be reviewed together. We do know the market for non-residential BACS is more advanced, so while the products themselves may not differ substantially the routes to market might, and those applying any label (specifiers, producers?) will also vary. We therefore think the two should be included in the study but we

expect differing delivery mechanisms for the two sectors for BACS. It may also be too early to set a regulatory measure for the residential sector.

We expect the preparatory study to also review opportunities for material efficiency, reusability, recyclability of component elements of a BACS product. As outlined in the introductory information in the study this could include, but may not be limited to, the following:

- Setting minimum requirements on the sensitivity and permitted tolerances of control products (sensors and actuators)
- Increasing the user friendliness and helping BACS to be better installed and operated (as this is known to affect their efficiency). This could include measures for the display, using alerts related to check lists for installations, or alerts when extreme energy losses occur.
- Increasing the re-commissioning of the system; e.g. an alarm could alert the user that the efficiency of the system needs to be reassessed.
- Strengthening the interoperability; communication protocols can be different from one system to another which effect the capability of all systems to work together.

With regards to increasing the user friendliness of BACS to aid installation and operation of the system. In a lot of cases this is already being done (more so in non-residential). Guidance of what is required to deliver this would be useful for the market and ensure consistency. Again, with regards to improvements in the re-commissioning of systems, this is also already being implemented for a lot of devices (e.g. service interval timers).

Routes to Market

The last comment regarding system level thinking brings us onto important points regarding suitable routes to market. This preparatory study and others (e.g. Lot 33 smart appliances, Lot 1 controls), raise some fundamental challenges with regards to the suitability of eco design and energy labeling for new system requirements in the market. We are seeing increasing emphasis on system functions being considered under these frameworks and considering this we need to be open to new ideas and approaches for market delivery.

Going back to the work on Lot 1, and attempts to introduce bundling of controls under eco design, EU trade bodies, specifically eu.bac, have been campaigning for a number of years for the Commission to treat Building Automation and Controls as one product group. This preparatory study is the outcome of these discussions and what we see as an evolution in the use of Eco-design and Energy Labelling regulation to apply measures to systems and packages

of products. This study therefore has significant implications for a range of BEAMA member product groups, including, but not limited to, heating controls.

In the case of package labels and bundling of products for systems, this has come up in the past for space heaters and controls under the Energy Labelling Regulation. This has been handled to ensure the efficiency rating of combined products can be evaluated at point of installation, and a label applied to the package. This has come up again, more recently, under Lot 33 and the preparatory study for smart appliances where BEAMA are campaigning to keep products with external 'controllers' in scope of this study. Although in the case of Lot 33 the issue is slightly different as we are considering the enabled functionality of Demand Side Flexibility by the 'controller', and therefore are not considering energy efficiency, the principle of market deliver is however the same. In the case of the BACS study similar discussions will arise and we foresee the need to consider options along the lines of a package/ system label, if deemed appropriate for the specific needs of a BACS product. As with the case of Lot 33 and the decision by VITO to exclude products with an external controller, if we continue to apply Eco Design and Energy Labeling regulation as we have done in the past for singular product groups, without tackling the component needs of new systems on the market, we will create a regulation that limits market development of systems better suited to customer needs. We would therefore see Eco Design and Energy Labelling regulation as it stands as wholly unsuitable for the products/ systems being considered. We therefore strongly urge VITO to consider the options for routes to market while outlining the system boundaries for the scope of this study.

It is easy enough to handle single products at source, but as with previous experience it is a challenge to understand who is responsible for the labelling and bundling of products. Is this done by the wholesaler, the contractor or by the installer on-site? BACS and Smart Control Systems are evolving fast and must continue to do so if Zero Carbon by 2050 is to be achieved. The most successful BACS solutions are likely to include combinations of "hardware" products and application-based distributed software systems. Any regulatory framework must keep pace with the developing technology and must not stifle, disadvantage or penalise such an approach. The level of sophistication achieved by current regulation for systems and products is limited and falls a long way short of what will be required if it is extended to cover BACS.

The first step for VITO needs to be to clarify who in the supply/ installation chain can meet the defined roles in the legislations (e.g. 'supplier', 'dealer'). Getting to grips with how far the regulatory framework can deliver something for these defined roles should be done at task 0.

It is fundamental VITO clarify what is possible (the 'can we') before determining how this is done.

Additional Comments from the meeting

The relevance to the EPBD was raised at the stakeholder meeting and related measures now written into the final Directive. This should also include the requirement for room temperature controls. This will provide significant energy saving benefits and in the assessment of whether a measure under Eco Design and Energy Labelling is needed for BACS we need to consider the additional benefit the new requirements in the EPBD will be adding. A lot could be achieved by this and it may be deemed less necessary for a BACS measure under Eco Design or Energy labelling.

Furthermore, we can see strong ties with the work to develop a standard Smart Readiness Indicator. There could be opportunity to complement the SRI with a potential BACS measure, however, we need to be careful both mechanisms are not trying to deliver the same thing or conflict with each other.

Conclusion

Fundamentally, should a package label or something similar be considered for BACS we strongly agree this should not be pursued unless better market surveillance of the installation process is achieved at member state level. It would be a big failure for industry if we end up with manufacturers having to comply with regulation but this is then ignored by installers and market surveillance authorities. We know from our members that the package label requirements under lot 1 are not policed effectively and therefore the benefits hoped from such a measure are not being achieved. Product regulation under Eco Design or Energy Labeling for BACS should only be implemented if there are clear energy saving benefits and it can be suitably monitored. Unsuccessful regulation will be damaging to the BACS market. With such regulation the goal originally was to give the consumer certain energy-related information at the point-of-sale, in order that the consumer could make an informed choice, based on impartial data relevant to an EU-wide level playing field. At the time of introduction those products and technologies (e.g. cylinders, thermostats, boilers, heat pumps etc) already existed and were relatively stable, and broadly speaking the goal has been achieved. However, the market place for BACS is evolving rapidly and we are dealing with a complex system of components and singular products. This could create a state of tension between regulation and product development that if not carefully managed could be very damaging to the market, without benefitting the consumer.



Splitting the study may not be an option due to the close links with the BACS products sold on the residential and non-residential market. We do however expect routes to market for each sector to vary based on the delivery mechanism and stage of technology development for each sector. The residential market is still evolving and this needs time, we would also expect any label to be applied at point of installation for such a complex system, this is likely to be done by the installer for the residential market. For non-residential this may be done at design/ specification stage (although we are aware the efficiency of systems like this as specified do not always realise their initial estimated efficiency rating) and there are different routes to market.

We hope our feedback is useful and we are very happy to review further options going forward. BEAMA will continue to engage at the stakeholder meetings and look forward to seeing the work develop.

Kind regards

Yselkla Farmer

International Policy Manager

For information on UK Smart Grid activity please visit www.uksmartgrid.org.uk



T +44 (0) 20 7793 3014

E yselklaf@beama.org.uk

W beama.org.uk

Follow us on Twitter: [@BEAMASmartGrid](https://twitter.com/BEAMASmartGrid) [@BEAMA_Htg](https://twitter.com/BEAMA_Htg)

Join us on LinkedIn: <https://www.linkedin.com/groups/8338958>

Bringing power to life.

Rotherwick House, 3 Thomas More Street,
St Katharine's and Wapping, London, E1W 1YZ
BEAMA Limited is registered in England No. 84313

