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From	:	Paul Van Tichelen	Annex(es):	**Powerpoint presentations of the meeting + online survey**
To	:	Veerle Beelaerts; Stakeholders		
Copy	:	Paul Van Tichelen, Paul Waide, Tatiana Pasquel Garcia		

Minutes of stakeholder Meeting for Preparatory study for Building Automation and Control Systems - BACS

VLEVLA, main auditorium, Avenue de Cortenbergh 71, 1000 Brussels, 17th January 2018

Participants

European Commission

DG ENERGY	Veerle Beelaerts (VB)

Project Team

VITO	Paul Van Tichelen (PVT)
	Tatiana Pasquel Garcia (TPG)
Waide Strategic Efficiency	Paul Waide (PW)

Registered stakeholders for the meeting

First Name	Surname	Company / organisation name	Acronym	Present
Simone	Alessandri	eu.bac	EUBAC	X
Francesco	Scuderi	Eurovent Association	EV	
Evelyne	Schellekens	AIE	AIE	
Jean Daniel	Napar	eu.bac	EUBAC - DN	X
Yselkla	Farmer	BEAMA	BEAMA	X
Mike	Rimmer	Dept for Business, Energy and Industrial Strategy	BEIS	X
Colin	Timmins	eu.bac	EUBAC - CT	X
Martin	Bergemann	EHI European Heating Industries	EHI	X
Roland	Ullmann	Siemens Building Technologies	SBT - RU	X
Els	Baert	daikin europe	DIK	
Mihai	Scumpieru	Mitsubishi Electric Europe	MEE	
Willem	Strabbing	ESMIG	ESMIG	X
Dominik	Flikweert	LightingEurope	LO	X
Arnaud	Collard	SPW - DGO4 - Energy	SPW	X

Stefano	Tomasina	Bticino	BT	
Udo	Wasser	E.V.V.E.	EVVE	X
Andre	Wachau	Federal Institute for Materials Research and Testing (Germany)	FIMRT DE	X
Sanne	Goossens	CECED	SG	X
Pierre	Morel	SOMFY	SOMFY	X
Bob	Rivett	Emerson	EMER	
Hannalena	Ivarsson	Kreab	KREAB	X
Christianna	Papazahariou		CP	X
William	Stinissen	Volta	VOL	X
Frank	Vancoppenolle	Daikin	DIK	X
Kirsti Hind	Fagerlund	NVE	NVE	
William Walker	Rode	Norwegian Water Resources and Energy Directorate	NVE	X
Stephan	Kolb	eu.bac	EUBAC - SK	X
Evelyne	Schellekens	AIE	AIE	
Oscar	Deurloo	LightingEurope	LO	X
Samuele	Da Ros	Emerson	EMER	X
Marco	Peter	GFI e.V.	GFI	X
Jens	Schuberth	Umweltbundesamt	UB - JS	X
Chloé	Fayole	ECOS	ECOS - CF	
Edouard	Toulouse	ECOS	ECOS - TL	X
Monica	Marza	LG Electronics	LGE	X
Robert	Richardson	Emerson Retail Solutions Europe	EMER SE	X
Philippe	Carpentier	SCHNEIDER ELECTRIC	SE	
Claire	Grossmann	ESMIG	ESMIG	X
Marina	Guajardo	Orgalime Partnership	OM	X
Spyridon	Pantelis	International Union of Property Owners	IUPO	X
Geert	De Cock	EHI	EHI	X
Ingvill	Nilsen	Norwegian Water Resources and Energy Directorate	NVE	
Chris	Hamlin	Emerson	EME	X
Karen	Andreassen	VELUX A/S	VELUX	
Joachim	Thortzen	VELUX A/S	VELUX	
Hans-Paul	Siderius	Netherlands Enterprise Agency	NL - HPS	X

Rony	Haentjes	NIKO	NIKO	
Paul	Van Tichelen	VITO/EnergyVille	PVT	X
Paul	Waide	WSE	PW	X
Tatiana	Pasquel Garcia	VITO/EnergyVille	TPG	X
Veerle	Beelaerts	EC - DG Energy	EC - VB	X
Joost	Demarest	KNX	KNX	
Hein	Lux	KNX	KNX	
Jan	Verheyen	VITO/EnergyVille	JV	X
Steven	De Bruyne	KNX	KNX	X
George	Paunescu	EC – DG Energy	EC - GP	X
Juergen	Kuhnert	CECAPI	CECAPI	X
Philippe	Vollet	CAPIEL - CECAPI	CECAPI	X

Objective of the meeting

The intention of the meeting was to serve as a stakeholder meeting for the Ecodesign preparatory study for building automation and control systems - BACS. The study commenced in October 2017 and is expected to conclude in March 2018 (5 months). The purpose of this meeting was to discuss the initial findings on the tasks within the project and to the hear the views of the stakeholders on the findings so far. A presentation of these initial findings was sent to the stakeholders registered for the meeting through the project website (https://ecodesignbacs.eu/). During the meeting an interactive enquire was launched, to get live opinions from both, stakeholders present in the meeting and stakeholders that could not attend the meeting.
The online enquiry was made available at: https://goo.gl/zTsRJY.
After the meeting the online was reset and resent to all stakeholders registered at the website.

Note: complementary to this minutes of the meeting the meeting powerpoint presentation can be consulted together with the input comments received from stakeholders by email

Agenda

- 9h45: Registration desk opens
- 9h45-10h00: Welcome coffee
- 10h00-10h20: Presentation of the study team, EC and tour de table
- 10h20-10h30 Summary of topics and approach for commenting
- 10h30-12h30 Topics 1-5
- 12h30-13h30 Lunch Break
- 13h30-15h30 Topics 6-10
- 15h30-16h AOB

Minutes

Short presentation of participants (all)
After all participants presented themselves, Paul Van Tichelen & Veerle Beelaerts welcomed the participants.

10h20-10h30 Summary of topics and approach for commenting

10h30-12h30 Topics 1-5
After the presentation from PVT, the floor was open to comments from the audience. Here under we have summarised the inputs from the participants.

abbr.	Comment/answer
WR - NVE	Energy savings is not always compatible with demand response (DR). Example "smart control" in ecodesign requirements, puts an extra load on grid, when additional power is required. On his opinion DR is very important, not only as frequency control FCR, but also bottleneck situations in the local distribution grids. The future with more distributed renewables as well as electric vehicles charging causes more "power and grid" limitations rather than energy limitations. Fortum Finland has a Virtual Power Plant operating with a DR system in place for traditional Electric water heaters. With Fingrid lowering the bid threshold to 0,1 MW for FCR regulations, thousands of connected electric water heaters are switched on and off without consumers noticing it. It is the cheapest "batteries" available. Statnett in Norway operates a 10 MW threshold on FCR bids.
EC - GP	George Paunescu mentioned that it would be a missed opportunity not to look at the demand response function. The winter package gives a priority to this and work on smart appliances will require a CEM to exist (could be in the cloud or BACS within the building). In the smart appliances study also have a use case regarding optimal energy consumption. EV and PV – responding to internal signals from the building.
PVT	Paul Van Tichelen mentioned that self-consumption is straightforward and can be easily embedded.
NL – HPS	Hans Paul Siderius referred to the methodology and product definition and wonder whether the product group presents a challenge to the methodology - Task 0 for Ecodesign (ED). He also referred on how ED and product regulation affects the European product market, this affects the degree to which local situations are taken into account as these can be covered in local EPBD type requirements, however for ED this concerns the European market. This distinction could be used to define what is within control of manufacturers of the product and what isn't, therefore he advised that we leave out those parts that are not addressable through the ED perspective. Naming what is a short term measure and longer term is not helpful. When mentioning bill of materials (BOM) data he doesn't think it will be that difficult if there are some examples of the physical product, but will not be a main hurdle. He agreed with the project team, when referring to DR, he thinks the project team should look at DR, but there are limitations because it can't be localised too much. Also the control level within the building could also be done in the cloud and therefore there is not just the BACS components in the buildings but how data processing elsewhere is taken into account.
PVT	To NL-HPS intervention, PVT replied that the project team should focus on also to the

	lowest level in overview figure (see powerpoint).
EUBAC - SK	Stephan Kolb mentioned that there should be an internal market perspective for ED but we should also have an energy labelling regulations into account (VB confirmed that was the case). For DR the ELR foresees the inclusion of a reference in the label for products that are energy smart. What are the intentions for using this?
NL - HPS	For ELR can get more local information by scanning the QR codes that allow localised tailoring of information, but is a new area. Worth trying out some of these options we have now.
EUBAC - CT	Collin Timmins mentioned that what's really important for the Task 0 study to set boundaries of who the supplier and who the dealer is e.g. as per the installer label – this will set the scope for the full study.
VOLTA	William Stinissen asked for the figure to be aligned with the smart appliances figure to show what can be within and external to the building. Agrees that DR should be included. Are smart meters included in the scope or not?

12h30-13h30 Lunch break

13h30-15h30 Topics 6-10
15h30-16h00 AOB

abbr.	Comment/answer
WR - NVE	Recommendation to avoid jumping into conclusions regarding the use of electricity for heating purposes, disregard use of electricity for heating purposes in the model as suggested. Not only Norway uses this, and with electrification targets in EU for 2050, the "whole picture" needs to be discussed. In NO modern buildings at "passive house standard level" has twice as high energy demand for Domestic Hot Water (DHW) pr. square meter and year, 30 kWh/(m2*year) compared to the heating demand 15 kWh/(m2*year).
NL - HPS	Hans Paul Siderius referred to one of the functions for the BACS could be the CEM – need some evaluation part. Second part is more crystal ball looking. Screening is not an evaluation of is this an important product or not, but rather to address how can we make it more simple. Should focus on those cases where the BACS could have a significant energy impact.
WR - NVE	The overview diagrams slide 21, 22 and 23 in the presentation show calculations with the use of the PEF for different energy sources. This will make things very complicated. Circular Economy issues are at the moment not taken into the calculations of PEF, which distorts the use of simpler solutions.
EUBAC - DN	Dan Napar tends to agree with the policy summary. He mentioned the importance to link comfort, health, productivity and EE with least energy possible. Also, how standard could be there to link these. When referring to BACS, he states that BACS also enable charging EV, for grid energy, use all energy types inc. RES, tackle new building market and existing buildings (the main market). BACS includes controls in general: choose the right control, for a specific situation. How many buildings in EU are uncontrolled, he asked. He also mentioned the minimum requirements to improve from existing class D. To simplify the study for ED, he recommends to focus on the control loop with negative feedback(as describe by Norbert Wiener , MIT, 1948 Cybernetics or control and communication in the animal and the machine for example page 97 who describe a thermostat). Also, to keep the setpoint to the actual situation. In his opinion, it doesn't matter the technology, but the ability of the control loop to keep the set-point as accurate as possible. Eu.bac thinks that standby is not applicable, because products are always active and must have a programmable control

	loop. PID algorithm is independent of the building and type of energy used. Recommendations: Point 1 – Slide 25, how to handle and describe functions? By using technical definition as it is in the standard. Point 2 – Slide 46, he tends to agree with PW. Eu.bac is in Lot 1 and Lot 2 and take the part of the control that is already in the Lots – so can be used in a complete way. PID algorithms can be completed in one study. Basic case study we see in the market is no control at all (i.e. on/off). Point 3 – eu.bac thanks for the efforts of the study team to give a global overview of the policy where BACS is concerned Point 4 - See Ecodesign study as an holistic approach is perhaps too ambitious; better if the ECODESIGN products are compatible with the holistic approach through BACS and due to BACS EUBAC will prepare written feedback – appreciate that the online survey allow to clarify some decisions for the follow up of the study Tend to agree with PW summary of policy options and asked how this Lot can serve all Ecodesign lots where control system is specified.
ECOS - ET	Regarding screening and scoping, he presented several questions referred to technical aspects. He also mentioned that a complementary approach could be to look more into the barriers (intention is to increase the uptake and use of BACS). He recommended to draw up list of main barriers and map this to where ED/ELR could make a contribution to this. In his opinion, it may not be a need for regulation related to NZEB, as in the RES sector there is a mushrooming of home-boxes, which are not regulated, and may have a higher risk of consumer disappointment.
SBT - RU	Roland Ullman mentioned that one of the things is that installed systems never work the way they are designed. He has never seen an option going towards a installed system as designed. He also pointed out that he imagines that 20-30% of functions that are designed are not implemented, plus the control level within the building could also be done in the cloud and therefore there is not just the BACS components in the buildings but how data processing elsewhere is taken into account.
EC – VB	Veerle Beelaerts replied that she didn't think this could be covered by ED as it is about placing products on the market. Hence it is out of the scope of this project.
SBT - RU	He added that it is not a matter of big or small building (same for both). Added note: he dreams that there was a policy option for installed systems.
PVT	Paul Van Tichelen said that the intention is that BACS could provide proper monitoring to support better installation and thereby reduce the energy gap with EPCs. Improving automation can include monitoring occupancy patterns of the building and therefore make EPCs taking this into account.
UB - JS	He had a number of questions, such as: (i) another study about PV that includes battery storage (that is related to DSM etc.) is ongoing – is the project team aware of that? (PVT, replied: yes, we are also part of the project team for that study). (ii) one of the indirect domains of BACS is not just to reach set-points but to trigger feedback to users that can affect investments, (iii) also BACS are divided into different classes, do all class C BACs get produce the same level of savings? (To this, SBT- RU said: it depends on the usage).
EUBAC - SK	The new EPBD has a bill or renovation passports, database, new requirements on BACS re temperature controls. The ED/ELR scope should be matched to the new EPBD to see the

	potential savings. There are also boundary conditions (enabling standards) e.g. EN15316 – that sets the hydraulic boundary conditions. Should be a complete overview.
NL - HPS	When dealing with complexity it is useful to keep in mind that this is about BACS – recommends to focus on energy related functions and not security, fire etc. – The screening should look at those functions that have the biggest impact and look at the factors that influence these functions. Then look at which type of buildings could represent these and thereby limit the number of buildings, and say in all other cases the impact is minor.

The study will be finalized by end March
PVT informed on the dates when an updated version of the online inquire is going to be sent (end of January 2018). Stakeholders will have a month(< to send comments/inquires to both the presentation and the online inquiry.

16h00 the meeting was closed

Additional, explanatory comment made after the meeting by NVE

WR - Energy calculations and energy savings with PEF are complicated (1st hand experience from EPBD calculations), as the renewables with a lot of DER (Distributed Energy resources) may have production profiles that are not compatible with the demand profiles. To get this right, one would need PEF with a resolution of max 1 hour, to cater for the dynamic complexity. Use of PEF may mask inefficiencies and losses. PEF are good for overall statistics for a region or country (EED, RES), but should not be used on building and product level. The introduction of PEF risks long fruitless discussions where stakeholders fight for market share influencing the PEF rather than what is good for energy supply or the climate.

Annex

The powerpoint presentation of the meeting is available.