LAB^{TQ}- MARCOGAZ Workshop

Standards for Ecodesign lot 1 and lot 2- where are we?

Part 2 Overview of the mandated work to be done. Are standards ready?

Point 5) mCHP´s

Brussels, May 3rd 2012

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1 - what are the parameters to be measured

Power & Efficiencies according to prEN50465

Useful heat output at rated heat output of cogeneration space heater with supplementary heater disabled $P_{CHP100+Sup0}$,

useful heat output at rated heat output of cogeneration space heater with supplementary heater enabled $P_{CHP100+Sup100}$,

Useful efficiency at rated heat output of cogeneration space heater with supplementary heater disabled $\eta_{CHP100+Sup0}$,

Useful efficiency at rated heat output of cogeneration space heater with supplementary heater enabled $\eta_{CHP100+Sup100}$,

Electrical efficiency at rated heat output of cogeneration space heater with supplementary heater disabled $\eta_{el,CHP100+Sup0}$,

Electrical efficiency at rated heat output of cogeneration space heater with supplementary heater enabled $\eta_{el,CHP100+Sup100}$

based on document: 7_WD_Testing Calculation Space and Combi Heater-2-2-12

1 - what are the parameters to be measured

Standby heat loss *P stby*	*EN15502-1,* § 9.3.2.3.1.3 Standby losses (test)
Ignition burner power consumption Pign	*EN15502-1*, § 9.3.2 Q3 = permanent ign.burner
Emission of nitrogen oxides NOx	EN15502-1 § 8.13. NOx (classification, test- and calculation methods)

based on document: 7_WD_Testing Calculation Space and Combi Heater-2-2-12

1 - what are the parameters to be measured

Seasonal space heating energy efficiency

$\eta s = \eta son - \Sigma F(i)$

ηson = ηCHP100+Sup0
= 0,85 • ηCHP100+Sup0 + 0,15 • ηCHP100+Sup100

F(1)= 3% (contribution of controls "+")

F(2) = 2,5 • (elmax + 1,3 • PSB) / PCHP100+Sup0 (electr.aux "-")
= *2,5 • (0,15 • elmax + 0,85 • elmin + 1,3 • PSB) / (0,15 • ηCHP100+Sup100 + 0,85 • ηCHP100+Sup0)*

F(3) = 0,5 • Pstby / PCHP100+Sup0 (stdby loss "-")
= 0,5 • Pstby / PCHP100+Sup100

F(4) = 0,5 • Pign / PCHP100+Sup0 (ign.burner "-")
= 0,5 • Pign / PCHP100+Sup100

F(5) = - 2,5 • ηel,CHP100+Sup0 (electr. eff "+")
= - 2,5 • (0,85 • ηel,CHP100+Sup0 + 0,15 • ηel,CHP100+Sup100)

based on document: 7_WD_Testing Calculation Space and Combi Heater-2-2-12

2 - are the standards already updated?

CEN/CLC/JWG/FCGA ➔ prEN50465:2011(July)

- ➔ compiled comments are in discussion in the JWG
- ➔ Items concerning efficiency, stdby, NOx still under discussion
- ➔ final meeting October 2012
- ➔ Power and efficiencies measurements = prEN50465, 7.6 ff
- ➔ Stand-by losses: not yet in prEN50465, proposals to integrate requirements still to be discussed, are different to EuP paper, proposals do consider electrical energy production during stdby, reconsider status stand-by to cover all situations (e.g. keeping a fuel cell on temperature, see IEC62282-x)
- ➔ NOx: prEN50465 is different from proposal in EuP paper (15502-1) to consider the CHP part and production of electricity

3 – what is the testing reproducibility expected?

- ➔ Thermal and Electrical input/output similar to existing standards, see EN15502-x or electrical appliances, requirements on measruement equipment corresponding to existing application
- ➔ Testing results strongly depending on temperature control and heat management controls as well as on involvement of thermal storage into management concept and on applied operation cycles / operation modes
- ➔ Testing results depending on definition of location of test points

4- is there some action needed to help the preparation/ improvement / updating of the standard

- ➔ EN50465 is elaborated by JWG
- ➔ experimental independent experience may ease work on testing conditions