CEN

WORKSHOP

AGREEMENT

CWA 16975

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English version

Eco-efficient Substations for District Heating

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European Foreword

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CWA 16975 was developed in accordance with CEN-CENELEC Guide 29 “CEN/CENELEC Workshop Agreements – The way to rapid agreement” and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was agreed on 2015-09-11 in a Workshop by representatives of interested parties, approved and supported by CEN following a public call for participation made on 2015-09-11. It does not necessarily reflect the views of all stakeholders that might have an interest in its subject matter.

The final text of CWA 16975 was submitted to CEN for publication on 2015-11-19. It was developed and approved by: Paolo Arrus - Giacomini, Anna Boss - SP Swedish National Testing and Research Institut, Aleš Cjuha - Energetika Ljubljana, Daniele Delboca - Giacomini, Mieczyslaw Dzierzgowski - OPEC Gdynia, Bertrand Guillemot- Dalkia France, Niklas Jeppsson - SWEP International, Markus Köfinger - AIT, Alexander Midtsjø - Hafslund Varme, Gunnar Nilsson - Svensk Fjärrvärme, Timo Peltola-Ouman, Igor Radovic - Grundfos Holding, Fabrice Renaude - Gylergie Cofely's Research Center, Henrik Rietz - SWEP International, Marko Riipinen - Helsinki Energy, Janusz Rozalski - OPEC Gdynia, Jaroslaw Szczechowiak - OPEC Gdynia, Jan Eric Thorsen – Danfoss, Jonas Wallenskog - Svensk Fjärrvärme, Wim Wolfs- Giacomini, Teijo Aaltonen - Alfa Laval Nordic.

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1 Scope

The target is to describe what is an eco-efficient substation (EES), how this eco-efficient substation is considered, tested and certified. EES concept includes as much substation efficient design as possible, without trying to cover an exhaustive point of view. The scope of the EES is to focus on a reachable future, realistic compliance with the existing system and ways of handling substation issues in a harmonized manner across Europe.

The proposed standard is compliable with the expected development in Europe in the future such as:

- New buildings with less demand for energy and more demands for lower temperatures.
- The connection systems should be standardized in order to make the substation replacement as easy as possible.

The aim is to consider the whole life of the system, including all seasons and not only the peak load operation. The most important period to consider, is the long duration time with both heating and domestic hot water demands.

EES should be certified, and marked according to certification that is given according to testing result and environmental ranking. Only EES with capacity up to 500kW per heat exchanger for heating and domestic hot water respectively, can be certified. Small substations intended for single-family houses or flats, shall not be certified. A certificate can include one specific substation or a series of substations.

This document contains 3 main parts:

Technical: Describes the main and optional components of the EES

Environmental: Describes the various parameter and components that give the efficiency to the substation, how these are ranked and the marking procedure

Testing and certification: The testing and certification procedures.

2 Conformance

All DH equipment and the system as a whole shall be approved in accordance with international, European Union and national laws, regulations, building codes and standards. In addition, all laws and rules from the national health and environmental authorities shall be taken into consideration.

National DH organizations and Euroheat & Power should make efforts towards harmonizing such rules and standards throughout the EU, in order for these rules and standards to be as much as possible in line with the characteristics of DH. The aforementioned organizations may also issue technical recommendations themselves.

The following EU directives and standards are relevant for this document:

- Directive 2012/27/EU (EED directive): Energy efficiency directive introduces a framework of measures to use energy more efficiently at all stages of energy chain. The directive is especially focused on energy efficiency improvements in households, industry and transport sector.
- Directive 2010/31/EU (EPBD directive): Energy performance of buildings directive introduces the new methodology for calculating the energy efficiency of buildings, minimum requirements for energy efficiency of new and renovated buildings, minimum requirements for energy