



Battery Safety Test Center (BSTC) – TSC and DNV GL

Background

The safety region Twente is a collaboration of the emergency services based on the Common Regulations and Safety Regions Act, for the benefit of physical safety in the Netherlands. Its head office is located in Enschede. The region Twente has 626,000 inhabitants and distinguishes itself by the combination of a number of iconic top technological work locations, a beautiful living, working and living environment and the location on the border with Germany.

As part of the safety region Twente, the Twente Safety Campus is a perfect example in which this innovative profile is reflected. Twente Safety Campus is a place where partners in safety, civilians, businesses and educational institutions all come together to pool knowledge and expertise, and collaborate on safety innovation. By providing real-life training simulations for the fire brigade, police force, defence organisations and medical services. By developing innovative safety products and conducting ground-breaking research. And by offering compelling safety programs to primary school pupils and the elderly. We don't only raise awareness; we actively improve safety from multiple angles.

DNV GL (Det Norske Veritas - Germanischer Lloyd) is a global quality assurance and risk management company. Driven by the purpose of safeguarding life, property and the environment, DNV GL enables customers to advance the safety and sustainability of their business. DNV GL provides classification, technical assurance, software and independent expert advisory services to the maritime, oil & gas, power and renewables industries. Due to growth and acquisitions, DNV GL is currently a company with more than 12,000 employees, 350 offices and active in 100 countries. KEMA was acquired in 2012. As a result, DNV GL also became a global player in the energy distribution market and acquired KEMA's state-of-the-art labs.

KEMA laboratories is a global player when it comes to testing and certifying electrical installations. It has electrical engineering laboratories that are unique in the world. In Arnhem it has a conventional Flex Power Grid Lab and Electric Battery Lab.

Twente Safety Campus and DNV GL develop together a state of art test- and certification center for batteries, focused on (fire) safety at the Twente Safety Campus. The aim of this safety test center is to contribute to the (fire)safety of battery energy storage systems and to enhance knowledge and insights about action perspectives for emergency services. Both, Twente Safety Campus and DNV GL have the same goal (improve battery energy storage (fire) system safety) and have complementary competences: knowledge about battery technologies, BMS-systems and certification processes (DNV GL) and expertise in the field of fire safety and the required facilities for such safety tests (Twente Safety Campus).

Scope BSTC

The focus of BSTC will be on battery energy storage system safety. If we look at the focus of MEET Munster (Research FAB Battery Cell), we assume that we can make a complementary contribution to the cooperation on battery technology development in the following aspects.

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- The BSTC focuses on relatively large-scale system tests (< 100 kWh). The execution of the test can be divided into three categories:
 - Destructive tests, where fire propagation tests on system level is tested
 - Test where a fire may occur. Test according to standards to evaluate safe design
 - Fire tests on preventative mitigation measures
- The emergency services are direct partners of the BSTC. At present there is insufficient uniform knowledge and doctrines at emergency services about how to deal with battery incidents. The fire brigade in particular is an important player in translating technology into action perspectives for the fire brigade.
- Translation of battery energy system safety aspects to cell design.