Setting the standard for decarbonised transport and higher-powered batteries

Nick Fleming and Dr Katerina Busuttil
BSI Knowledge Solutions
The impact of transport modes on GHG emissions

- Transport largest carbon emitting sector
- Major cause of air pollution in cities
- Impact on health and social care
- Cars greatest proportion of emissions but vans and HGVs emit more CO2
- Many vehicles on roads over 8 years old
- Registrations of EVs on rise but represent less than 2% of cars on the UK’s roads
- Barriers to market uptake can be overcome
- Recent investment in EV infrastructure, R&D
- Various interventions including standards can help accelerate transition to zero-emission vehicles
Road to zero-emission transport – holistic approach

- Smart mobility
- Sustainable manufacturing processes
- Consumer behaviour
- Zero-emission vehicle technologies (& supply chain)
- Infrastructure & Grid
Net-zero transport. BSI KS supporting decarbonisation

Zero-Emission HGVs
Developing a standards roadmap for decarbonising road freight (ZERFT)

EV Battery Development
 Standards programme in parallel with Faraday Battery Challenge to promote UK capabilities

EV Smart Charging
Establishing minimum standards for domestic, public and private EV charge points and future networks

Materials manufacture
Research to identify the next generation of light-weight materials for use in transport

Smart Mobility and Data
Promoting transport data interoperability for more efficient transport networks and user journeys

Connected and Automated Vehicles (CAVs)
Accelerating the safe development of self-driving vehicle technologies on UK roads
BSI European and global standards influence

**ISO**
(International Organization for Standardization)
164 National Standards Body members globally

**IEC**
(International Electrotechnical Commission)
80 members (National Committees) and 80 affiliates globally

**ITU**
(International Telecommunications Union)
Agency of the UN. Members are national governments and industry

**CEN**
(European Committee for Standardization)

**CENELEC**
(European Committee for Electrotechnical Standardization)

CEN & CENELEC have 33 member countries (EU × 28, EFTA × 3, FYROM and Turkey). 24 countries including the UK have common members of both CEN and CENELEC.

**ETSI**
(European Telecommunications Standards Institute)
Industry, government and NSB members
BSI Faraday Battery Challenge Programme

Sponsored by Innovate UK and the Faraday Battery Challenge (FBC).
17-month standards programme led by BSI
Technology for 2030s is developing now

Global climate issues and regulatory demands with emission targets set for 2030.

Coherence of the supply chain, alignment with the transition towards clean economic growth and net zero, and harnessing of smart technologies to support manufacturing growth are key elements for the UK’s penetration of the battery industry. Design and development are happening now.

A customer journey map of the battery manufacturing process carried out by Innovate UK in 2019 helped define pressing issues, including regulatory and standardization needs from a battery manufacturing perspective.

This led to FBC Investment into the future of manufacturing batteries and their components for EVs.

BSI were asked to implement a programme of work intended to address key technical gaps and immediate market priorities around health, safety and environmental considerations in battery manufacture.
The FBC Standards Programme has advanced good practice in the UK for battery manufacture

- Develop and codify good practice to fill in key knowledge gaps and respond to pressing challenges (i.e. PASs around H&S and environmental considerations) - critical to UKBIC and UK industry
- Build public confidence in batteries and EVs
- Identify further gaps and challenges, devise appropriate response
- Grow the Faraday battery network

Five publications: FBC standards landscape report, PAS 7062, PAS 7061, PAS 7060 and Battery Manufacturing and technology standards roadmap report
Key findings from the roadmap

The Standards Roadmap is based on information collated from the standards landscape report, workshops and feedback from across industry, academia and government.
Our committees and standards-makers

BSI standards-makers members are volunteers. They participate in standards committees, either as individual experts in their own right, or nominating organization representatives.

- **12,200** committee members
- **2,200** nominating organizations
- **1,200** committees/sub-committees
- **120** universities represented
- **7,000** live projects
- **2,500** standards published annually

bsigroup.com/getinvolved
Global landscape. EV and e-mobility standards

Developing EV related standards in parallel with ISO

- **ISO 5474** series on Safety requirements for power transfer
- **ISO 6469** series on Safety specifications
- **ISO 21782** series on test specifications for electric propulsion component

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**ISO/TC 22/SC 37**

**UK PEL/69**

**CEN TC 301**

**IEC TC 125**

**IEC TC 69**

- **ISO 15118** series on V2G communication interface
- **ISO 63119** series on EV charging roaming service
- **ISO 63110** series on charging and discharging infrastructure

**E-scooters** safety requirements and test methods
How to find out more or get involved

Innovation programmes
- Faraday Battery Challenge
- Energy Smart Appliances programme
- Connected and Automated Vehicles

Research projects
- ZERFT
- ZEFI
- Transport data

Events. Upcoming 30th November 2021

The future of cybersecurity for road vehicles.
BS ISO/SAE 21434 and UNECE WP.29 (Regulation on Cybersecurity)

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Thank you

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