

## ECV Final Seminar & Nordic Electric Bus Initiatives 2 Helsinki, 11 – 12 May, 2016

Venue: Finpro auditorium, Porkkalankatu 1, 00180 Helsinki

### Programme

#### DAY 1 – 11.5.2016

#### TECHNICAL SESSIONS (auditorium)

- 8:30 – 12:30 Registration open
- 8:30 – 9:00 Coffee
- 9:00 – 9:10 ECV Final Seminar, welcome and opening address – Mikko Pihlatie & Jouko Suokas, VTT
- 9:10 – 9:30 Electric vehicle systems and related businesses – Martti Korhikoski, Tekes EVE
- 9:30 – 10:30 Session 1: Electric and hybrid working machines (Chair J. Pippuri, VTT)
- Full-scale series hybrid mining loader with zonal hydraulics, P. Sainio, Aalto
  - Virtual platform for mobile machinery hybridisation, J. Nokka, LUT
  - Kalmar fast charge, electrification in ports, H. Häggblom, Cargotec
- 10:30 – 11:00 Coffee break
- 11:00 – 12:00 Session 2: Electric drive and powertrain solutions (Chair J. Pyrhönen, LUT)
- Electric city bus energy flow model, P. Rahkola, VTT
  - Evaluation of energy consumption and carbon dioxide emissions of electric city buses, K. Tammi, Aalto
  - Visedo powertrain solutions, K. Rauma, Visedo
- 12:00 – 13:00 Lunch break
- 13:00 NEBI2 opening and welcome note, Mikko Pihlatie, VTT & Svend Söyland, NER
- 13:15 – 14:15 Session 3: Energy storage technologies and applications (Chair K. Tammi, Aalto)
- Lifetime of Li-ion batteries, P. Vie, IFE
  - Modelling batteries for mobile applications, A. Hentunen, Aalto
  - Lithium-ion batteries for mobile applications, A. Väyrynen, Leclanché
- 14:15 – 15:15 Session 4: Power grid aspects (Chair K. Kauhaniemi, UVA)
- Electric vehicles in electricity grids, A. Rautiainen, TUT
  - Electric vehicle controlled charging, V. Tikka, LUT
  - Smart grid integration of eBus charging infrastructure, J. Karppinen, Helen
- 15:15 – 15:45 Coffee break
- 15:45 – 17:15 Session 5: Electric bus charging technologies (Chair S. Kukkonen, VTT)
- Heliox charging systems, B. Bouhuijs, Heliox
  - High power charging systems by Ekoenergetyka, M. Wojenski, Ekoenergetyka
  - Fundamentals of electric bus charging, J. Mäkinen, ABB
  - Electric bus charging by Siemens, K. Kilpinen, Siemens
  - Opbrid charging solutions, R. Bedell, Opbrid

## DAY 2 – 12.5.2016

### TECHNICAL SESSIONS (auditorium)

- 09:00 – 10:20 Session 6: System design and services (Chair: S. Söyland, NER)
- Towards standardisation of electric bus charging, T. Raitaluoto, VTT
  - Feasibility of electric buses in public transport, O. Vilppo, TUT
  - Building effective electric bus systems, A. Grauers, Chalmers Univ. Of Technology
  - Pitch: Electric bus system design tools, V. Karvonen, VTT
  - Pitch: Tractor swapping for electric trucks, R. Bedell, Opbrid
- 10:20 – 10:50 Coffee break
- 10:50 – 12:30 Session 7: Electric bus technologies (Chair: P. Sainio, Aalto)
- Future moves with Linkker technology, S. Ruotsalainen, Linkker
  - Presentation by Volvo, M. Broback, Volvo
  - Electric buses by VDL, S. Ojamo
  - Electric buses by Solaris, R. Sekowski, Solaris
  - Presentation by Hybricon, R. Åkerlind, Hybricon
- 12:30 – 13:30 Lunch break
- 13:30 – 14:45 Session 8: Electric vehicle systems operation, on-going demonstrations (Chair: J. Laurikko, VTT)
- ZeEUS – UITP electric bus flagship, initial results, P. Bruge, UITP
  - Electric bus R&D platform, results from commercial electric buses, T. Halmeaho, VTT
  - City of Copenhagen experience with electric buses, M. Krogsgaard, City of Copenhagen
  - ElectriCity experiences and results, J. Elsren, Västtrafik
- 14:45 – 15:15 Coffee break
- 15:15 – 16:45 Session 9: Roll-out strategies and procurement (Chair: M. Pihlatie, VTT)
- Nordic best practices for electric bus procurement, M. Krogsgaard, city of Copenhagen
  - Consequences from operating fully electric buses in a city, how to scale up?, Fredrik Forsell, city of Umeå
  - Helsinki region transport, from pre-commercial pilot to roll-out, R. Mäkinen, HSL
  - Procurement of the charging infrastructure for Helsinki ebus piloting and beyond, H. Stam, City of Helsinki, Helsinki City Transport
  - Wrap-up: how to proceed to commercial roll-out? (HSL, Copenhagen, Helsinki, Umeå, Oslo)
- 16:45 – 17:00 Concluding remarks, closing of the conference – VTT, NER