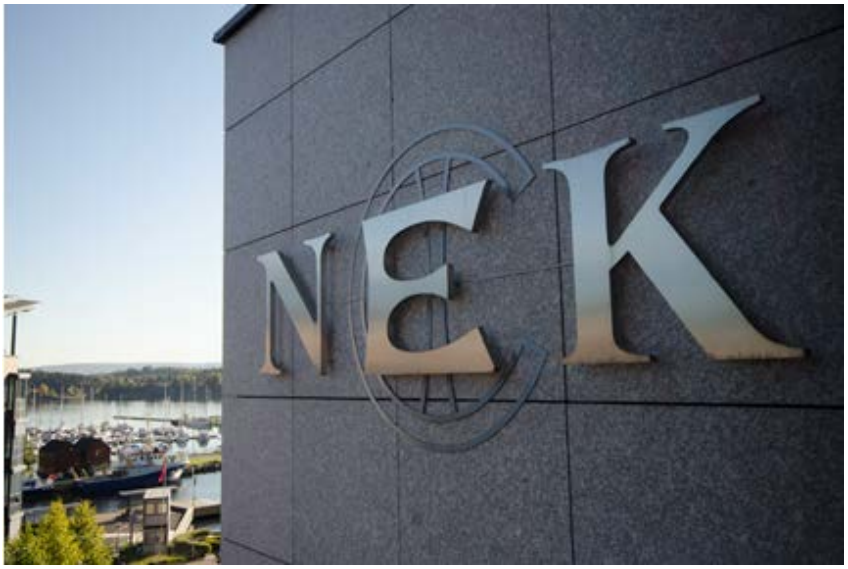
NORDIC EV CONFERENCE ON STANDARDS



Minutes and lectures

NORSK ELEKTROTEKNISK KOMITE
The Norwegian National Committee of
The International Electrotechnical Commission, IEC
The European Committee for Electrotechnical Standardization, CENELEC

20.9.2013

The conference

Norwegian Electrotechnical Committee (NEK) invited delegates from Nordic countries to the second Nordic meeting on EV and electrotechnical standards. The meeting was a follow up of the meeting in Stockholm 7th and 8th November 2012, where SEK was host. The meeting took place at Lysaker, close to Oslo on 27th and 28th August 2013.

Hosts at NEK

The conference was hosted by:

- CEO Birger Hestnes, NEK
- Co-host: Technical officer Leif T. Aanensen

Program

The following program was a frame for the conference.

First day – Tuesday 27. August 2013	Second day – Wednesday 28. August 2013
Start at 11:15 **Items** • Conclusions from the first Nordic EV meeting in Stockholm 2012 o Follow up on the Norwegian proposal on charging, se appendix • Report from the Nordic countries (Approx. 20-25 minutes from each country) • News on E-Mobility – EU mandates	**Press brief (optional) at 08:00** NEK have under consideration to invite a few journalists on a breakfast meeting. Delegates are welcome to join the session. End of press brief at 08:45 at latest. **Start at 09:00** **Workshop – Issus subject of prioritization** • Issue I • Issue II
13:00 Lunch	**12:00 Lunch**
Start at 14:00 **Lectures** • **EV – viewed from the owners** perspective (lecture – Snorre Slettevold, Elbilforeningen) • **Normal charging, semi-fast or fast charging** (lecture – Jan Woyen, ABB) • **Strategy for building infrastructure in Norway** (Asbjorn Johnson, Transnova) • **Research on EV. Challenges for the grid** (Helge Seljseth, SINTEF Energi) • **EV and fire – how serious is it?** (Jostein Ween Grav, Norwegian Directorate for Civil Protection (DSB)) **17:00 Preparation for workshop** Q&A from today's sessions, discussion on selected matters, and preparation for the workshop next day - prioritization.	**Start at 13:00 – workshop continue** End of workshop at 14:00 at latest. **14:00 Presentation of the work done in the working groups** • Approx. 15 minutes of each group. • Discussion and conclusions **15:20 Closing remarks** **Finished at 15:30**

Delegates attending

Delegate	Organization	Nation
Asbjørn Johnsen	Transnova	N
Birger Hestnes	NEK	N
Leif T. Aanensen	NEK	N
Arild Røed	NEK	N
Erik Hansen	DSB	N
Helge Seljeseth	SINTEF	N
Jostein Grav	DSB	N
Nils-Magnus Hagen	ELKO	N
Egil Falch Piene	Eltek Valere	N
Ståle Frydenlund	Elbilforeningen	N
Jan Wøien	ABB	N
Jan Tore Gjøby	Enmira AS	N
Joakim Grafstrøm	EIO	S
Peter Herbert	Vattenfall Research & Development AB	S
Kent Andersson	GARO	S
Juha Vesa	SESKO	F
Matti Rae	ENSTO OY	F
Juha Matikainen	Fortum	F
Regnar Schultz	Dansk Standard (DS)	D

Some delegates only attended one day or parts of the conference.

Conclusion for previous meeting in Stockholm

The Norwegian proposal to the Nordic meeting (both in 2012 and 2013):

«The expert group recommend a fast migration to charging based on «Mode 3 – type 2», according to IEC 62 196. The recommendation is valid for all new facilities and major upgrading of exiting charging point – whether these are supported by private or public owner. When new vehicle are sold, that are mode 3 compatible, there should be established similar solution for home charging (for instant in the car owner's home)."

Conclusion: The delegates that supported the conclusion in Stockholm (all but the Swedish delegation – they abstain) reconfirm support of this conclusion. According to the Swedish delegates there might be sufficient support in Sweden, but this is not yet confirmed.

Some delegates pointed out that the conclusion was according to the recommendation of the EU commission.

The Norwegian delegation also put forward a conclusion from one of the working groups in Stockholm:

"The group acknowledges that public charging point should have support for «Mode 1» and «Mode 2» - due to existing EV-car fleet. The charging current of the latter systems, given a time to adjust, should be limited to 10 A. »

1. On the subject of EV/charging point ratio

The following text is taken from the conclusion of the second working group in Stockholm meeting:

"What we can agree on:

• Fact: The EV has limited driving distance. Today the range is about 130-150 km, on wintertime less.

• Fact: The EV needs regular fast charging when going on long distance driving

• Fact: It seems to be a rational technical reason for maximum distance between charging stations.

What we might agree on:

*• The ideal maximum distance between fast charging stations (mode 4) on **green highways** must not exceed 50 kilometer.*

• In downtown city area the ideal maximum distance between fast charging station (mode 4) should not exceed 8 km and there should be a ratio FCS/EV) of minimum 1/50.

When decided on the distance as expressed in bullet point one, it should be taken in to account among others elements the elevation in the area, temperature, speed limit."

Conclusion: The delegates decided not to these discussions further.

Presentation from the delegations

There where presentation from all the Nordic countries. All these presentation was given orally, using PowerPoint.

Please refer to PowerPoint slides for further information.

Press brief

NEK invited some selected media to a press brief on the morning of the second day. Only two journalists attended the brief out of some twenty invited. Still this gave fruitful session with questions and answers from a small panel of delegates from all the Nordic countries.

Working groups – minutes and conclusion

The conference established two working groups. Please find enclosed the minutes.

Appendix 1 – Minutes of WG 1

Participants

Participant name	Organization
Asbjørn Johnsen	Transnova
Leif T. Aanensen	NEK
Egil Falch Piene	Eltek Valere
Peter Herbert	Vattenfall Research & Development AB
Juha Vesa	SESKO
Juha Matikainen	Fortum
Regnar Schultz	DS

Scope of the working group

Task I: To find solutions on business model and related technical solution. The group was also asked to discuss solutions on roaming fees. Finally, the group was asked: Which solutions are on the marked and how should standardization committees interact in this aspect?

Task II: To start the discussion on item "the willingness to pay".

Minutes

Task I

Finland has a common solution on roaming services. The costumer has one type of RFID-card, but it might by with different logos. The card is used to identify the costumer. It might also be used in other Nordic countries in the cooperation (among them Fortum). Other members of the group was interested in this project. Contact information was provided: Consult company EERA, contact person: Elias Poyry. More information is available on www.electrictraffic.fi.

The finish delegation was asked about Information on card. They gave the following description: Costumer name, validate time and identity number.

Transnova explain the system in Norway. There are many different operators and many different systems. Among them are RFID-cards, SMS, time-fee and so on. This brings a challenge: Lack of interoperability. Transnova tries to promote interoperability in all the projects they support.

In Sweden there is not much infrastructure yet, mostly charging points for motor heaters that are also used for charging.

The group decided to develop a frame or guideline for the requirements of how to establish and interoperable system within a Nordic perspective. Which basic requirement should be met?

After discussion on many different perspectives, the group decided to list up the following requirements. The group decided to call the list "recommendation".

Recommendation

The group recommends:

- There must be established a unique identification number for each costumer.

- The unique number may be linked to a physical or legal person.
- The operator or groups of operator must establish a carrier of the unique identifier (e.g. a card, smart phone – app and similar).
- The different operators need to establish a back office system that supports the carrier in bullet point three.
- The information (unique identifier) should be able to be carried on several different holders (e.g. smart phone, a print (QR-code), a card and so on).
- The operators must provide an anonymous option e.g. by provide a prepaid card.
- A system of one-factor authentication is sufficient, due to low fee (according maximum non-PIN transaction to MasterCard and Visa regulation). The operator must provide options to select a limit of the use of the unique contract – e.g. each week (to prevent fraud).

The purpose of the recommendation is to enable convenience for users, establish solution that are interoperable, and that opens for healthy competition between operators.

Privacy

It is important to have a system were the user may be anonymous. This might go for a prepaid card. The working group seems to agree that anonymous solution should be provided.

Roaming

It is about exchanging information between a provider and the users company.

Authentication

The group discussed the need of authentication. The purchase is lower than 25 euros, as is the limit from Visa and Master card. A one-factor authentication is sufficient.

Some remarks from the discussion

The group seems to like the Finish solution. It is simple, easy to handle and low-cost. The Finish solution has adopted many of the principle established in the recommendation from the group.

The group should not make recommendation on back office system or business model, this is up to the companies to decide.

Support from all the delegates in the conference

The recommendation was later on supported in plenum in the conference, with minor adjustments (incorporated).

The willingness to pay

Investment on infrastructure is expensive and high risk investment. Also the maintenance might be high. As for the risk, this goes for both shift in technology and user habits.

The average lifetime of power Electronics (fast charging) is around 10 year, in some cases as low as 5-8 year. In addition, shift in e.g. standard on plugs and socket outlet or means of communication may result in extra investment. Thus higher annuities might be the result.

The user should accept to pay for the cost of the flexibility the charging infrastructure provides. It gives the EV fare more flexibility and enjoyment of the car.

Appendix 2 – minutes of WG 2

Participants

Participant name	Organization
Birger Hestnes	NEK
Arild Røed	NEK
Jostein Grav	DSB
Nils-Magnus Hagen	ELKO
Jan Henry Gjøby	Enmira AS
Joakim Grafstrøm	EIO
Kent Andersson	GARO
Matti Rae	ENSTO OY
Juha Matikainen	Forum

Scope of the working group

Main subject II: Public/industry Information

Is it possible to develop common Nordic publications on public/industry information? What should be the scope and what has already been prepared? Add on - terminology: How different plugs and charging systems are named. Could we reach any common terminology?

Main Topic III: Directive

Directive proposal (alternative fuel directive) and impact on business. Could we make any remark on this subject?

Minutes

New directive (alternative fuel) planned to be implemented in 2013-09. Valid from 2014-01

- Support the requirement for type 2 plugs in the proposal for the new directive
- Sweden and Finland disagrees to the proposal to regulate the number of public charging points. (Ref. Article 4, item 2)
- References to standards in the directive should not refer to editions.
  Propose new terminology for “slow”, “normal”, “fast” charging. The terms should specify the mode of charging and not the “speed” of charging.
- Terms should be friendlier to the public.
- Mode 3 should be the lowest level in the defined types of charging.
- Proposal definition:
    - Purpose of establishing new terms:
        - Basic/normal charging: Mode 3 charging (to establish a definition for the lowest level of charging)
        - Power charging: Mode 4 charging
        - Emergency/ Occasionally charging: Mode 2

    - Charging station: ?
      Charging point: ?
      Charging place: ?
- Suggestion: Look into the Transnova definitions
- Suggestion: Nordic working group for 722

Channels for distributing information

- Internet
- Handbook/guidelines for specific target groups. Covering for the Nordic countries. Examples of target groups could be:
  Owners of charging stations. (recommendations on how to build charging stations and how to maintain them)
- Communication coordinator from each country to distribute information across borders in the relevant committees and organisation

Appendix 3 – PowerPoint slides

The PowerPoint slides are present in this appendix. The content is as follow:

- Presentation on development in the Nordic countries
  - Sweden
  - Denmark
  - Finland
  - Norway

- Presentation used during the lectures
  - **EV – viewed from the owners** perspective (lecture – Ståle Frydenlund, Association of EV owners)
  - **Normal charging, semi-fast or fast charging** (lecture – Jan Woyen, ABB)
  - **Strategy for building infrastructure in Norway** (Asbjorn Johnson, Transnova)
  - **Research on EV. Challenges for the grid** (Helge Seljseth, SINTEF Energi)
  - **EV and fire – how serious is it?** (Jostein Ween Grav, Norwegian Directorate for Civil Protection (DSB)). PowerPoint slides are not received by the secretariat by 20.9.2013. Request on the slides may be directed to Jostein.ween.grav@dsb.no.