e-mobility NSR

NORTH SEA REGION ELECTRIC MOBILITY NETWORK

NEWSLETTER ISSUE 4 | 2014

PREVIEW:
Final conference

NETHERLANDS:
E-mobility
help desk launched

POLICY, PRACTICE & PROFITABILITY OF ELECTRIC MOBILITY

Dutch conference days, audience interaction

Jan Schreuder, Municipality of Zaanstad

Kenan Aksular, Athlon Car Lease

The organising team

As e-mobility is becoming more and more visible in the Dutch urban environment, the market for electric mobility has recently left the pioneering phase, and there are positive signs that e-mobility is developing into a profitable market in the Netherlands. Both policy and practice generate useful as well as much needed insights and experiences. The Dutch focus on policy and investing in pilot projects and charging infrastructure generates both a nationally and internationally attractive climate for the exchange of knowledge and investment. In October of this year the province of North Holland and MRA-Electric (Metropolitan Region Amsterdam) organised a large international conference based on the theme "policy, practice and profitability of electric mobility" in the frame of the E-Mobility NSR project.

All in all, about 100 experts and stakeholders from more than eight countries participated in the event during which successful e-mobility endeavours were shared and strategies were interactively discussed about how to further increase the proliferation of electric vehicles. Elisabeth Post, Vice Governor of the province of North Holland, kicked off the successful event which focused on cutting-edge EV issues. An international set of speakers presented insights from the perspectives of industry, academia and government. The event was highly interactive and fostered exchange in innovative ways: the organisers set up an electronic system to allow real-time feedback to questions posed to the audience, and enabled the audience to interact with the speakers by means of electronic devices such as smart phones, tablets and PCs.

CONFERENCE TOPICS

- **Strategies for installing public charging infrastructure in the North Sea Region**
- **Policies to stimulate EV sales and market growth**
- **Case studies about EV successes in countries in the North Sea Region**
- **Challenges facing the EV industry and what can be done to solve them**
- **E-mobility in public transportation**
- **Ideas to stimulate EV use as fleet vehicle and in public transportation**

ALL PRESENTATIONS ONLINE:

http://e-mobility-nsr.eu/info-pool/

PRESENTATIONS OVIA QR-CODE:

Scan the QR code with your smart phone

The Interreg IVB North Sea Region Programme
European Union
The European Regional Development Fund

Editorial

DEAR READER,

Welcome to the fourth newsletter edition of the North Sea Electric Mobility Network (E-Mobility North Sea Region) project.

The project is in its third year now and partners have made substantial progress, and have already produced a range of results. In this volume, read how the Dutch government proactively deals with a growing market for e-mobility. In this resepct, both policy and practice generate valuable insights and experiences as our recent international conference in the Netherlands showed. Our Danish partners take a different approach with their mobile electric mobility information centre (EMIC), taking its EMIC directly to the doorsteps of potential users. Learn more about the first road that produces energy from sunlight, why a Belgian cohousing scheme is well suited for smart grid field tests, the vast range of new research on battery health, EV consumer profiles, user needs for ICT solutions assisting the driver and a model to simulate the impact of EV charging on the power grid.

SAVE THE DATE

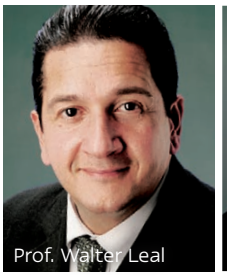
Finally, we invite you to join us at our events such as the final project conference to be held in **London, UK, on 11 April 2014**

Last but not least, follow us – by signing up for our e-news or with Twitter!

Subscribe at www.e-mobility-nsr.eu

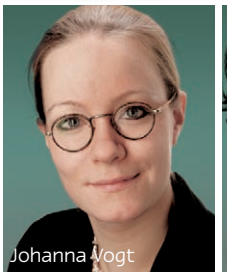
https://twitter.com/EmobilityNSR

Enjoy reading!
Your E-Mobility NSR Hamburg team



Prof. Walter Leal

Franziska Mannke



Johanna Vogt

Kathrin Rath

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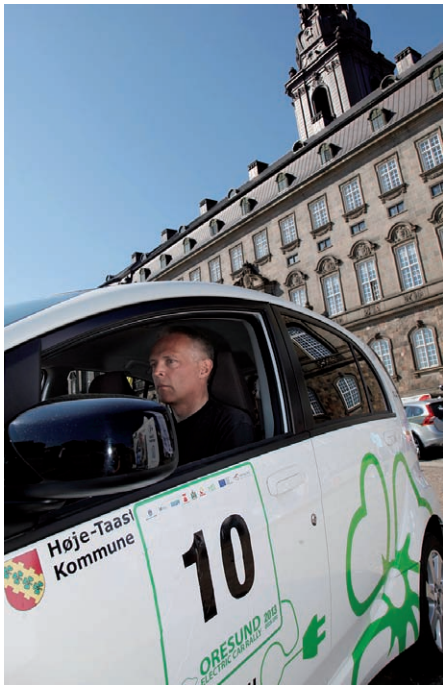
THE NETHERLANDS: E-MOBILITY HELP DESK FOR LOCAL GOVERNMENTS LAUNCHED

Elisabeth Post and MRA-E Help Desk team

The first e-mobility helpdesk in the Netherlands was recently launched during Ecomobiel Rotterdam, the largest annual exhibition and trade fair in the Netherlands for sustainable mobility. There is a growing need for information on electric mobility in the Netherlands, especially on a local level, where there are currently 13,000 electric vehicles on the roads, and 10,000 more are expected by 2020. Consequently, MRA-Electric has created a helpdesk dedicated specifically to local governments which have questions about the infrastructure needed for this increase in the amount of electric vehicles. Elisabeth Post, Vice Governor of the province of North Holland emphasises the importance of sharing knowledge and experiences across governmental levels: "In the region around Amsterdam we have gained a lot of experience and have found answers to questions which we want to share with our colleagues. Governments have to support one another in this growing field."

DENMARK: MOBILE EMIC HITS THE ROAD

Receiving expert advice at the mobile EMIC



The E-Mobility NSR team in the Høje Tåstrup municipality (HTK) has decided to take its electric mobility information centre (EMIC) directly to the doorsteps of potential users in the Copenhagen region for optimal outreach. The purpose of the Danish mobile EMIC is to inform public and private companies and users who are actively seeking information about green mobility solutions in the future. The mobile unit offers a wide range of information material to visitors on local, national and transnational e-mobility matters and solutions. Moreover, companies and other municipalities within the capital region of Copenhagen can book the mobile EMIC centre and expert through HTK.

The EMIC is also supported by www.elbiler.nu (a clever play on words meaning 'electric cars now'). This interactive webpage has been created in close cooperation with the Federation of Danish Motorists, the Danish Technological Institute and the DEA. Users can find stories about real life experience and interaction with EVs, video clips, and a test to determine how EV-ready you are.

GET IN TOUCH:

EMIC in Hoeje Taastrup
Bygaden 2
DK-2630 Hoeje Taastrup, Denmark

Tina Faber
e-mobility coordinator / Klimasekretariatet i Høje-Taastrup Kommune
Phone: + 45 4330 1279
E-mail: emobility@htk.dk.

THE NETHERLANDS: THE ROAD THAT CONVERTS SUNLIGHT INTO ELECTRICITY

A unique and truly inspiring project began in October 2013 in Krommenie, a small Dutch town, part of the municipality of Zaanstad, belonging to the province of North Holland approximately 15 km northeast of Haarlem. The SolaRoad is a road which can convert sunlight into electricity, like a solar panel. In a typically Dutch manner, Vice Governor of the province of North Holland, Elisabeth Post, and City Council member, Robert Linnekamp of Zaanstad, got on their bikes and cycled down the road, generating enough energy together to release a shower of confetti flowers for a symbolic launch of SolaRoad. It is envisaged that, by next year, cyclists can ride on Sola Road which will resemble the world premiere of this technology.

During the symbolic launch of the SolaRoad, the four consortium partners, who were responsible for the implementation of the SolaRoad pilot, i.e. the province of North Holland, TNO, Ooms Civil and Imtech Traffic & Infra, signed the cooperation agreement to officially endorse the innovative project. The consortium is currently continuing its production and construction of the SolaRoad. In autumn 2014, the SolaRoad will officially be opened, and members of the public will be free to cycle along the energy-generating road.

WATCH THE SOLAROAD VIDEO:
http://vimeo.com/76854772

MORE INFORMATION:
www.solaroad.nl.

For questions about SolaRoad and interview requests, contact:
Sten de Wit
Phone: + 316 1202 1647
E-mail: sten.dewit@tno.nl.

Follow SolaRoad on the social media:
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US-NL: G2G EXCHANGE IN THE E-MOBILITY NSR PROJECT

As part of a government to government (G2G) exchange programme, Californian government representative Ben Rubin was introduced to the Dutch e-mobility team by Peter van Deventer, province of North Holland (PNH). Through this unique programme fostering the mutual exchange of knowledge and expertise, Ben has been able to work together with the MRA-electric team in Amsterdam, the team of the province of North Holland, the Dutch School of Public Policy and the Ministry of Transport. Ben said: "The timing for maximum mutual learning was really perfect, which was also helped by the e-mobility event week hosted by the province of North Holland from October 8th to 11th, 2013".

Ben Rubin hosted a college tour to share his views on Dutch policy and especially on the topic of "Electric Vehicle Deployment: A Comparison of Government Strategies in California and the Netherlands". In an interactive presentation, Rubin compared the electric vehicle strategies in California and The Netherlands by sharing information about current policy strategies and welcomed feedback from his audience. He also informed the PNH team about how California's Governor Edmund Brown Jr. issued his ambitious Executive Order that called for 1.5 million zero-emission vehicles on Californian roadways by 2025. In fact, this policy goal parallels The Netherlands' plan for 1 million electric vehicles by 2020. As California's share of the U.S. market for plug-in electric vehicles currently stands at nearly 40%, questions that came up during Ben's tour were, for example: what was the main factor that obtained this market share – and how are local/regional governments involved? What makes EVs such an important priority in Californian policy – and could these factors be introduced in the Netherlands? What current challenges and opportunities remain to increase the EV market to 1.5 million vehicles – and to what extent are these issues relevant to the government's work in the Netherlands?

The US American valued the exchange personally as a great success, especially witnessing the mutual enthusiasm of different organisations working together and learning from each other to collectively develop strategies to increase rates of electric vehicle adoption.

BELGIUM: COHOUSING AS A TEST MODEL FOR SHARED MOBILITY

Since July 2013, E-Mobility NSR partner Ghent University, Belgium, is running several field tests on electric cars (EVs) and electric buses. With the goal of collecting information on EVs' charging and consumption behaviours in daily transport operations, one field test focuses on EV-sharing in cohousing.

Cohousing is a special type of collaborative housing in which residents actively participate in the running of their own neighbourhoods. Within this scheme, the sharing of goods (bikes, cars, household machines, common areas) and services is highly accepted. All in all, four cohousing teams represent the test population, with two cohousing teams being situated in the city centre of Ghent and the other two teams in semi-urban areas, in Ghent and Brussels suburbs. More than 85 people (with an average age of 37, and an equal number of men and women, and younger and older drivers) use EVs such as the one in the picture for work and social activities. Over a period of one whole year, each cohousing team has free access to EVs, with two electric cars being provided for each cohousing team.

Why focus on cohousing? The reasons for choosing a cohousing environment as a test population are that vehicles would be used intensively, a good balance of test population was possible, drivers' profiles could match with their real driving behaviour, and plenty of drivers can be monitored within a reasonable budget. However, the most important reason was that EV-sharing could be used as a new model for future sharing mobility programmes. With mobility in a transitional phase, the concept of sharing mobility (not owning, but using the car) will become increasingly important.

In order to achieve the objectives of measuring the EV usage with the electric grid, assessing EV performances, and modelling drivers' behaviours, the EVs are monitored by data-loggers (key indicators resemble energy consumption, driving behaviour, time, distance, speed) and the charged electricity is measured on the wall box (at the location of the cohousing). Moreover, the monitoring of EVs' usage in the cohousing teams is not the only data analysed by the Ghent team. Other data comes from the Flemish Living Labs. Company cars are also monitored and analysed but the results are limited in that it is not always possible to match these data to the driver profile – which is what happens in cohousing tests.

GET IN TOUCH:
IOF Innovation Centre i-KNOW
Universiteit Gent
St. Pietersnieuwstraat 41
B-9000 Gent/Belgium
Sidharta Gautama
Phone: +32 (0)9 264 34 10
E-mail: sidharta.gautama@ugent.be

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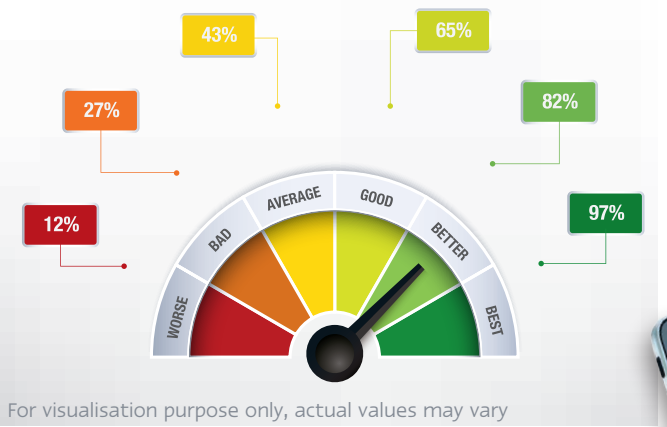
UK:
THE EFFECT OF CYCLING ON THE HEALTH OF THE ELECTRIC VEHICLE BATTERY

Four E-Mobility NSR colleagues at Northumbria University - Gilian Lacey, Ghanim Putrus, Tianxiang Jiang and Richard Kotter - recently published a new paper on the effect of cycling on EV batteries. Their paper provides an analysis of the experimental results of lithium ion battery degradation which has been used to create a model of the effect of the identified parameters on the ageing of an EV battery.



For visualisation purpose only, actual values may vary

The parameters affecting degradation are generally accepted to be the following:

1. state of charge
2. depth of discharge
3. charging rate
4. battery temperature

Values for each of these parameters have been found for three versions of a typical daily cycling scenario:

a. uncontrolled charging
b. delayed charging
c. Vehicle to Grid

A comparison is made between the expected overall degradation using four different charging rates and different charging patterns based on the model. Finally, a link is made between the charging patterns and the effect on the power flow at the transformer of a typical section of LV network using an ADMD profile.

DOWNLOAD THE RESEARCH REPORTS AT

www.e-mobility-nsr.eu

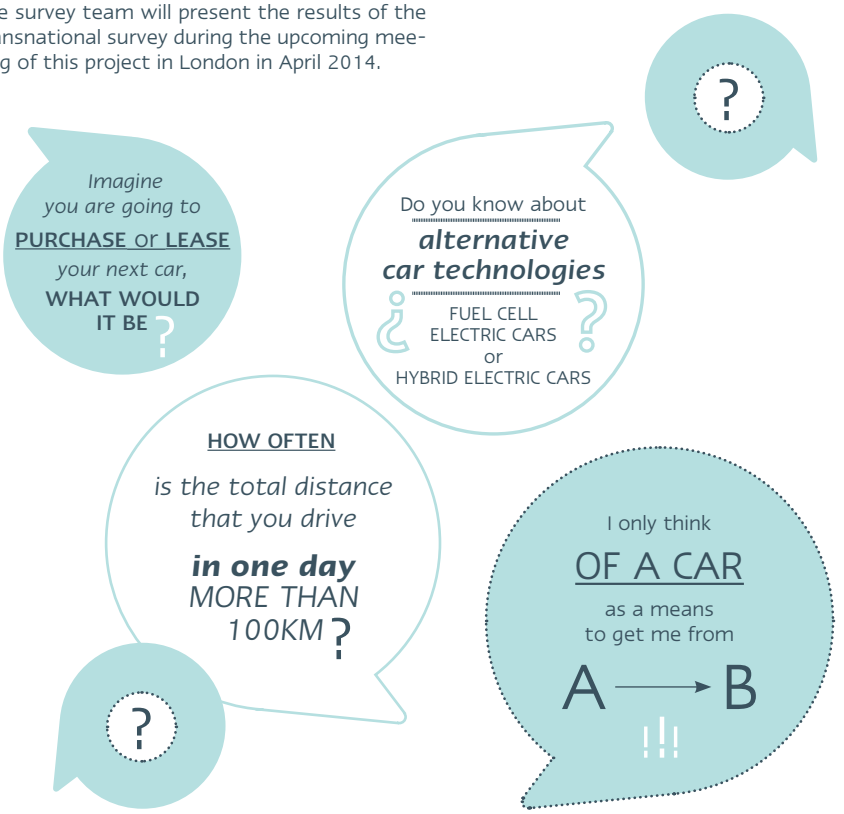
THE NETHERLANDS:
TRANSNATIONAL SURVEY ON POTENTIAL EV CONSUMER PROFILES

At the end of October 2013, a transnational survey focusing on potential consumer profiles was launched. Dutch project partner TU Delft is carrying out this web-based survey in seven North Sea Region (NSR) countries to investigate the market potential for EVs through potential consumer profiles.

This survey includes questions concerning the car features of household members plus their actual travel patterns. To determine travel patterns, the distribution of purpose and the distance and frequency of the trips made by the household heads are being analysed with a particular focus on travel purposes such as work and leisure. Furthermore, the respondents' attitudes and preferences, along with their usage of other transport modes, are taken into account.

The results of this survey will help gaining insights into car ownership and use in the participating NSR countries and the extent to which the consumers' actual travel patterns can be covered by an EV (full electric battery EV or plug-in hybrid). About 300 respondents per country have been selected from medium-sized and large urban areas and from a variety of living environments, including the city centre, suburbs and nearby towns and villages. The chosen city regions include Aarhus, Copenhagen, Oslo, Gothenburg, Groningen, Leiden, Ghent, Kingston upon Hull, Newcastle upon Tyne, Kiel and Bremen.

The survey team will present the results of the transnational survey during the upcoming meeting of this project in London in April 2014.



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SWEDEN: ANALYSIS OF USER NEEDS FOR DRIVER-ASSISTING ICT SOLUTIONS

The Swedish team from Lindholmen Science Park recently published a report focusing on the analysis of user needs for driver-assisting ICT solutions. A corresponding workshop was held in late September 2013 in Gothenburg, Sweden, in close cooperation with E-Mobility NSR partner FDT - Association of Danish Transport and Logistics Centres. The teams looked into the use of ICT solutions for electrified urban transport. The goal was to provide a state-of-the-art overview of existing technology solutions and standards as well as insights into the potential for certain technology applications. Future ideas and related work have also been elaborated. Moreover, a state-of-the-art overview of existing and future ICT (Information and Communications Technologies) solutions designed for electrified urban freight transport has also been produced.

BOOKLET: COMPARATIVE ANALYSIS OF EUROPEAN EXAMPLES OF SCHEMES FOR FREIGHT EVS

FDT Association of Danish Transport and Logistics Centres, together with TU Delft, HAW Hamburg, Lindholmen Science Park and ZERO, have released the outcome of 1 year long work within the field of electric freight vehicles. The booklet "Comparative Analysis of European Examples of Schemes for Freight Electric Vehicles" presents on 350 pages more than 60 cases of goods deliveries in urban areas by means of EVs. The report comprises initiatives realized in the seven NSR partner countries – Belgium, Denmark, Germany, the Nederland's, Norway, Sweden and United Kingdom.

The report gives a comprehensive overview of currently on-going and finalised initiatives, both publicly supported and entirely privately financed, and identifies challenges, strengths and opportunities associated with the utilization of EVs for goods distribution, as experienced by users. An appendix part lists technical specifications of all 36 identified types of electric freight vehicles. It may be concluded that, considering the advantages and disadvantages of electric vehicles, EVs seem to be well suited for goods distribution in urban areas, especially in case of fixed routes. Small range is not an obstacle for the business reliability in this case, as the travel distance remains constant – and known in advance. Lower maximum speed is also not a problem, due to low transport speed in cities. The vehicles have been reported to be very manoeuvrable and easy to drive in the city centre, and driving comfort was experienced to be high. Last but not least, since the electric vehicle is almost soundless deliveries can be made during the majority of time during the days and even during nights. Download the e-report from the project website or request a hardcopy from our Danish partner FDT.

GET THE FULL 350 PAGES REPORT HERE:

http://e-mobility-nsr.eu/fileadmin/user_upload/downloads/info-pool/E-Mobility_-_Final_report_7.3.pdf

UK: THE IMPACT OF EV CHARGING ON THE NETWORK

Northumbria University's Edward Bentley explaining the software

We know that charging the EV in the evening can add to the load on already stressed low voltage networks, and if many people charge their EVs at this time, it could potentially cause a blackout. If the EVs were charged after midnight, then this would not be a problem. A recent paper published by E-Mobility NSR partner Northumbria University, UK, demonstrates and explains the development of an IT tool which can simulate the power flow, voltage and current over a 24-hour profile. The user can input the number of houses, shops etc. as well as the number of EVs and when they will be charged. Graphs illustrate where and when the peak hours of the day are, so measures can be taken to avoid these times and avoid a blackout. According to the authors, this software is of most use at the development stage. The corresponding research paper is available as conference proceedings and thus accessible to academics as well as commercial and professional organisations involved in Electric Vehicle R&D, manufacturing or marketing. Download the paper at http://www.evs27.org/en/papers_site.

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ELECTRIC VEHICLES AND ECO CARS: SOLUTIONS FOR GREEN GROWTH

TRANSNATIONAL CONFERENCE IN LONDON, FRIDAY 11TH APRIL 2014

Throughout Europe, city regions are championing the development and use of electric vehicles (EVs) and other ultra-low emission vehicles (ULEVs). London is a notable example. In tandem with the decarbonisation of power generation, anticipated benefits include significant reductions in C02 emissions to mitigate climate change, energy security, and improved air quality. Further,

CONFERENCE THEME
ELECTRIC VEHICLES AND ECO CARS - Solutions for Green Growth

DATE & TIME
11th April 2014
9-5pm

VENUE
London Metropolitan University
Graduate Centre
Holloway Road
N7 8DB London
UK

REGISTER FREE OF CHARGE AT
www.mobility-nsr.eu http://e-mobility-nsr.eu/final-conference-registration/

electrification of road transport can stimulate much-needed economic growth. As yet, however, such initiatives tend to lack synchronisation and coordination. There seems to be considerable scope for future development and ‚green growth' in this emerging industry across Europe and other world regions.

In line with this, the final conference of the EU project E-Mobility NSR reviews the level of mainstream market acceptance of electric mobility. In particular, it promotes the ‚bigger picture': the prospects for electrifying road transport across Europe and other world regions, and the opportunities to develop complementary green technologies and business solutions for cleaner, quieter, and consequently healthier cities. Expert panels consider what needs to be improved, what works well, and what might be transferrable. This conference, to be held on 11 April 2014 in London, UK, will be organised by the INTERREG IVB NSR project E-mobility NSR, i.e. the Cities Institute, London Metropolitan University, in collaboration with the Chartered Institute of Logistics and Transport (CILT).

The detailed programme is available at www.e-mobility-nsr.eu.

UPCOMING:

April (date tba) | OSLO/N
Expert meeting on fast charging and implications in a large volume EV scenario

11 April 2014 | LONDON/UK
Final conference E-Mobility NSR: Electric Vehicles and Eco Cars: Solutions for Green Growth

21 May 2014 | HAMBURG/GER
Fuelling the climate 2014: Clean Urban Freight in the NSR

SAVE THE DATE

May 21-22 2014 | GOTHENBURG/SWE
Seminar on electric ferries and electric buses

27-28 May 2014 | GENT/BE
Workshop on smart grids and electric mobility

1-3 Sept 2014 | HAMBURG/GER
Final project meeting with book launch

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Hamburg University of Applied Sciences
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'Applications of Life Sciences'

Prof. Dr. (mult.) Dr. h.c. (mult.) Walter Leal
Franziska Mannke
Johanna Vogt
Kathrin Rath

Lohbrügger Kirchstrasse 65
21033 Hamburg, Germany

Tel.: **0049 (0)40 42875-6324**
Fax: **0049 (0)40 42875-6079**
E-mail: **e-mobility@ls.haw-hamburg.de**
Website: **www.haw-hamburg.de/ftz-als.html**