D2.3.1 Procurement process report Copenhagen

NEF Del. No. 2.4

Final report

Dissemination level: PU

WP2 Deliverable D2.3.1

1. Introduction

One of the objectives in the HyTEC project is to deploy 10 OEM produced fuel cell passenger vehicles in daily operation in the City of Copenhagen. Already today the Municipality has 6 small rebuild fuel cell vehicles in operation, and the new hydrogen powered vehicles will replace the old ones. In line with the goal to push hydrogen fuel cell vehicle technology towards commercialization the fuel cell vehicles will be procured through an open EU tender procedure.

The City of Copenhagen is participating in two EU projects in order to procure all together 15 fuel cell electric vehicles (FCEVs). 9 FCEVs are co-funded by HyTEC and 6 FCEVs are co-funded by NextMove.

The City of Copenhagen started a tendering process for the procurement of FCEVs in January 2012, which in August 2012, led to the conclusion of a contract with Hyundai on 15 FCEVs model ix35.

2. Dialogue with OEM's

In order to identify which OEMs could be interested and with the ability of providing FCEVs within the time schedule of the HyTEC and NextMove project, the City of Copenhagen had a pre-dialog with different OEMs in most of 2011. During the pre-dialog process it became clear that only few OEMs might be able to provide FCEVs within the requested time limit, as FCEVs are not yet produced continuously in a mass production, but only in a selected number when a new test model or series are developed.

The purpose of the meetings was also to detect what technical standards the FCEVs can meet and in order to be able to specify the correct technical requirements of the contract documents, and let the OEMs become aware of the general political framework conditions at national and local level which can help Denmark become one of the early marked adopters of FCEVs.

The pre-dialog process was very useful for all partners. The OEMs became aware of the green thinking in the Scandinavian countries and of the tight collaborations across borders in order to position Scandinavian to become one of the first regions in Europe where FCEVs and hydrogen refueling stations are available. In this way the OEMs are not only seeing Denmark, Norway and Sweden as smaller and separate markets, but as a larger region with a joint marked for future FCEVs.

The pre-dialog also gave the City of Copenhagen the needed information on the OEMs work and progress on FCEVs like, how reliable are they, what are today's challengers, what technical problems has been solved and when can we expect a beginning marked introduction and at what price level.

In conclusion, the pre-dialog is very important as the contracting authority and bidders are not allowed to speak together during the tendering process. All questions must be dealt with on beforehand.

3. Framework conditions for the tendering process

- In Denmark the FCEVs are exempted for taxation throughout 2015, which can be up to 180 %. That means that FCEV's more quickly can compete on prices of traditional vehicles with combustion engines.

- Wind turbines generate a considerable part of the electricity produced in Denmark, and today electricity produced by wind power represent about 20 % of total Danish electricity supply. In 2020 it is expected, that approximately 50 % of electricity consumption is supplied by wind power. The long term goal for Danish energy policy is that the entire energy supply – electricity, heating, industry and transport – is to be covered by renewable energy by 2050. That means that Denmark has a long tradition in green thinking and the possibilities of using surplus wind power energy in road traffic such as electric cars and fuel cell electric vehicles – not least in the long run.

- Danish companies have a high expertise and knowledge when it comes to building hydrogen fuelling stations. More than 40 Danish companies are involved in the production of more than 3.000 components required for the filling stations. The Danish expertise on the infrastructure makes it interesting for the OEMs to consider Denmark as a future marked for FCEVs.

- The City of Copenhagen has a strong climate policy, stating that we as a city want to become carbon neutral in 2025. That also includes activities regarding transportation. However, it is not possible to make a 100 % CO2 emission cut from the road traffic, so it will be supplemented by an overproduction of wind power. Some of the main goals in Copenhagen 2025 climate plan states, that:

    - 2015: 85 % of all passenger cars belonging to the City of Copenhagen must be electric or hydrogen electric cars in 2015.
    - 2018: Heading for 40 fuel cell vehicles in the Municipal car fleet.
    - Copenhagen will act as testing lab for electric, hydrogen-electric and biofuels vehicles.
    - 2025: 20-30 % of all light vehicles in the City of Copenhagen must run on electricity, hydrogen and biofuels.
    - 2025: Minimum 3-5 hydrogen fuelling stations in Greater Copenhagen Area.

4. Joint Call for Tender

The participants in the NextMove, had intended to implement a joint call for tender according to the EU procurement directive, in order to show a volume in their request for FCEVs and maybe be able to close a contract on more favorable prices for the FCEVs.

According to the EU Procurement Directive the NextMove participants could implement a joint call for tender for contracting authorities in Denmark, Sweden and Norway.

There was however a barrier to the implementation of a joint tender, since by filling in the contract notice form, only one body responsible for appeal procedures can be informed**.** This means that the appeal body of one of the participating countries must be chosen.

A relevant and crucial question is whether a Danish contracting authority is entitled to cut off a Danish supplier from being able to rely on the Danish procurement rules and complaint procedures, because he has entered into a joint call for tender with Swedish and Norwegian contracting authorities with whom he jointly have decided that the procurement process is implemented in accordance with e.g. Norwegian appeal legislation.

Therefore the joint call for tender was given up and instead a joint prior information notice was issued.

Further the participants agreed to share information of their individual tender documents.

5. Call for Tender

Copenhagen Municipality was obligated to make the call for tender following the restricted procedure and thereby cutting us off from having supplementary meetings with OEM's. According to EU public procurement directive 2004/18/EC, art. 30.1.4 it is only possible to make a negotiated procedure when we are talking about public construction contracts regarding e.g. buildings and parks which are established only with the purposes of research, testing or development and where the profitability of research and development costs must not be included.

A similar procedure for FCEVs would have eased the tendering process, as it is very difficult to predict all technical questions in advance when you are dealing with a product under continuously development.

The City of Copenhagen dispatched the contract notice in January 2012. However, since only one application to participate was received at the deadline March 2012; it was decided to discontinue the tender procedure and to enter into a negotiated procedure with the applicant from whom the application was received, namely Hyundai.

6. Negotiated Procedure and Conclusion of Contract

Negotiations with Hyundai started up in April 2012, and the tender documents prepared for the original call for tender formed the starting point for the negotiations although it wasn't a competitive dialogue.

The negotiations were concluded in June 2013, the contract signed in August 2012 and the contract award notice dispatched in September 2012.

7. Time schedule for the tendering and FCEV delivery process

- 2011: Dialog with OEMs
- January 2012: Start of the tender and procurement process
- April 2012: Start of negotiated procedure with Hyundai
- August 2012: Signed contract with Hyundai on 15 FCEVs model ix35
  (9 FCEVs funded by HyTEC and 6 FCEVs funded by NextMove project)
- November 2012: The Hyundai FCEVs received European type approval and they will be able to run in all European countries
- December 2012: Brief report about the procurement process
- Jan-Mar 2013 + at least once a year: Hyundai headquarters in Frankfurt educate Danish technical staff in service and maintenances of FCEVs
- Mar-Apr 2013: Training of super end-users by City of Copenhagen and Hyundai Frankfurt
- April 2013: Arrival of FCEVs

8. Technical specifications & other contract conditions

Vehicle specifications

	Unit	ix35 FCEV 
Maximum speed	km/h	160
Acceleration& elasticity	s	14.1 (0-100km/h)
Driving range (NEDC)	km	525
Maximum torque engine	Nm	300
Drivetrain power	kW	100
Payload	kg	5 passengers
Ambient temperature limits vehicle operation	min °C max °C	-20~40°C
Maximum hydrogen storage capacity of the vehicle	kg of H_2	5.64
Energy density of the hydrogen storage	wt% kg per liter	Type III 3.32 (70 MPa)
Battery capacity	kWh	0.95
Power output battery	kW	24
Vehicle efficiency fuel consumption	kg_{H2} / 100 km	HME: 1.07 kg_{H2}/100 km

Refuelling

- 70MPa according to SAE J2601 guideline

Reliability

- Hyundai guarantee 4 years of operation without extra costs, which means that service, is included in the cost prise of the vehicles.
- The Contract partners are aiming for 95 % up-time as an average over 3 month during a 4 years period.
- Hyundai is to pay a penalty of total contract sum to the City of Copenhagen if the up-time is under 85 %.

Service

- Maintenance will take place at Hyundai Dealer Workshop near Copenhagen Airport, which promotes quick service on the FCEVs and possibilities to achieve new clean tech knowledge in Copenhagen area. The Danish staff will receive education and training from Hyundai Motor Company.
- The period for regular service is approximately six month.
- The operation of FCEVs is check by a remote monitoring system on a daily basis.
- If a FCEV ix 35 breaks down or in connection with service Hyundai will provide an ICE ix35 within 24 hours without extra costs.

Training of super users

The 15 FCEVs will be used by a lot of different employees in different departments in Copenhagen Municipality. Therefore it is important to point out some super users, who can give a quick training to their colleagues in the use of and refueling of the FCEVs.

In cooperation with the City of Copenhagen Hyundai Motor Company will provide the necessary training for a number of super users. The training program will take six hours and include;

- 2 hours of seminar for vehicles function, benefits, future vehicle technology trend
- 2 hours of driving demonstration and exercise
- 2 hours of hydrogen refueling demonstration and exercise.