



# California dreaming in Holland



| by Tseard Zoethout

The Dutch government wants to have 1 million electric or hybrid cars on the road by 2025. Cities and provinces are already taking concrete steps to make electric transport a practical reality. The province of Noord-Brabant even dreams of becoming the Silicon Valley of electric cars in the EU.



Photo: Bart Willmsen

During the last few months, electric transport has become the new buzz word in the Netherlands. One after the other initiative is being announced. March: Amsterdam wants free parking at charging stations for electric cars with an external rechargeable battery. April: Utility companies decide to put up 10,000 free charging stations before 2012. June: The government allocates a €65 million subsidy for R&D, pilot projects and infrastructure during the next 3 years to stimulate investments in electric cars. July: Christian and social democrat members of parliament want to double the already ambitious target of one million electric cars.

Fred Hagendoorn, chairman of an official governmental advisory group, puts government policy into perspective. 'The first 10,000 vehicles will be sold irrespective of the asking price. Companies that want to have a green image, will be keen to purchase them. During the introductory phase, up till 2015, they will, as it were, fight for them. But after that it will be a question of volume. Will all new cars be electrically powered in 2020? Even in the most optimistic scenarios, the battery will still make the car €4000 more expensive in

2020 than its petrol-driven predecessors. A consumer must clock up more than 100,000 kilometres to achieve the break-even point.'

Although policy scenarios have not yet fully crystallized out, it is clear according to Hagendoorn, that the battery will be the major stumbling block towards mass market introduction. Presumably the battery will be replaceable and could be financed by a separate lease construction. Companies will receive subsidies of up to €8000 if they buy energy-efficient cars. The fiscal surcharge for electric cars will be reduced from 25% to 10%. But Hagendoorn is not sure whether this will be enough to help the Netherlands close the gap with other countries, Denmark for example. 'In Denmark three-quarters of the purchase price for a new car goes towards tax. But electric transport is exempted. And in this preliminary phase, the fiscal climate will dictate in which countries manufacturers choose to introduce electric cars.'

## Consumer behaviour |

On its own, the Dutch government would never be able to meet its ambitious goals. But the electric car also opens up new possibilities for utility companies to create

# Sustainable mobility starts here

## Electric vehicles in The Netherlands



Photo left: Jean-Christophe Riou/ANP Photo above: Bart Willemsen

a better, smarter energy infrastructure. It is an opportunity they are eager to seize. As André Postma, coordinator of the so-called “mobile smart grids” programme at the network operator Enexis, explains: ‘We are legally bound to provide an affordable, efficient and renewable energy supply. The electric car fits that equation perfectly. The electric car is more energy-efficient than fossil fuels, but also than wind energy. The batteries can be used as a storage medium to help balance out the variable supply of wind and solar energy, decentralized sources which will play an increasingly important role in the energy mix of the future. The whole system will be managed by means of smart metering.’

The Dutch network operators are so supportive of the electric car, that they have announced that they will build 10,000 charging stations within three years. Mobile Smart Grids, the organisation set up by the companies for this purpose, will be responsible for the safety, the standardization and the reliability of the charging stations. The charging stations will be installed in public places and even for private individuals free of charge. Companies will be able to order them at cost

price. Mobile Smart Grids has already made agreements about this with car dealers and municipal and provincial governments.

In the next few years, the network companies foresee no problems with the medium-voltage cables. For the low-voltage cables the situation is different. ‘Household appliances like dryers or washing machines each use several kilowatts. The heaviest type of electric car uses approximately 10 kilowatts. If you connect dozens of cars simultaneously to one low-voltage cable, the fuses will blow,’ says Dirk Jansen, director intelligent power grid maintenance with Liander, one of the two major Dutch network companies beside Enexis.

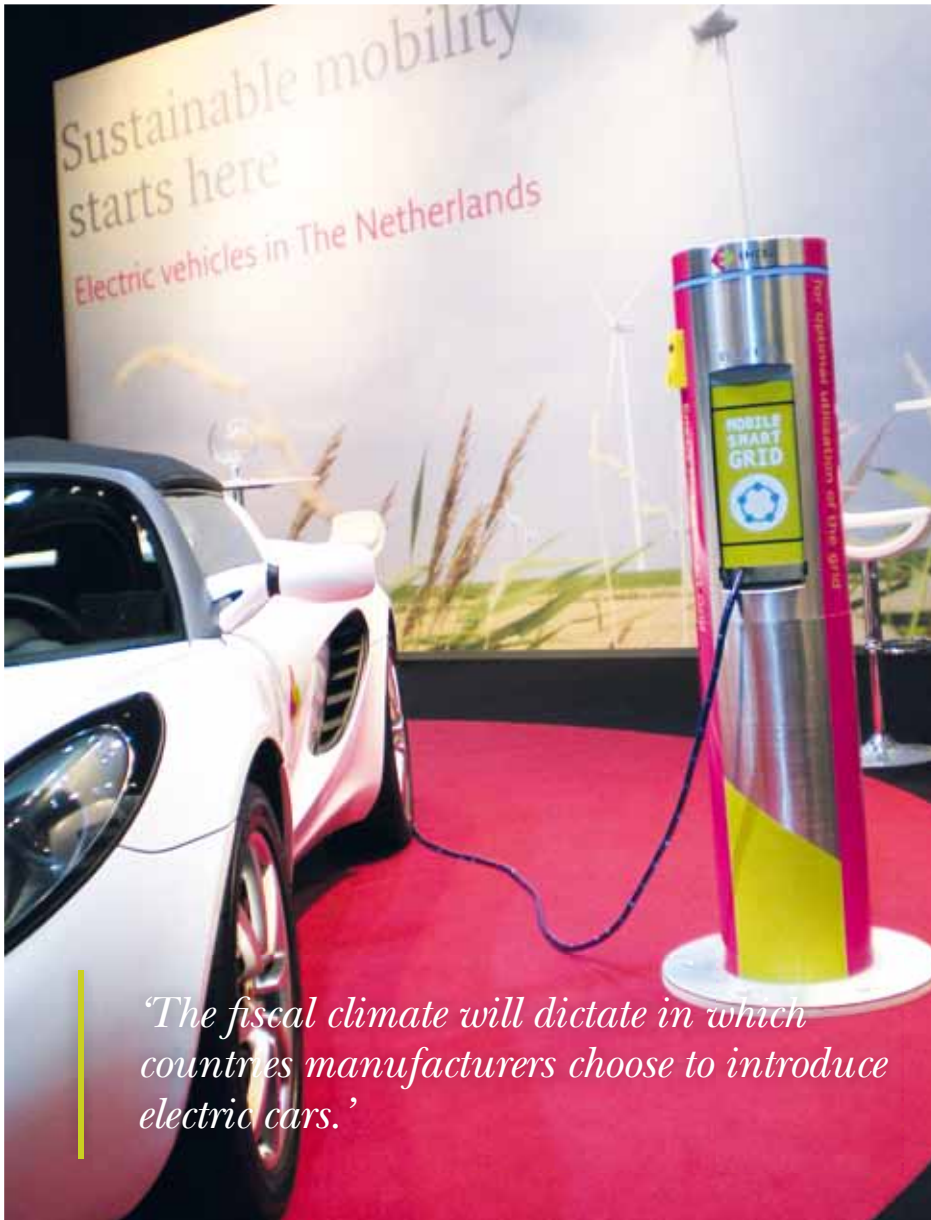
To see how this problem can best be solved, Liander will equip a number of its meter readers with electric cars to gain insight in consumer behaviour. The data obtained in this way will be used to judge whether adaptations to the low-voltage grid are necessary. ‘You could compare us to internet providers,’ says Jansen. ‘They also guarantee reliable connections and sufficient bandwidth. It’s the same with us. Load balancing for clients, stimulating sustainable electricity and who knows,

maybe the market is even ready for the development of virtual power generating units based on car batteries. As utility company we try to facilitate these developments.’

### Miraculous |

The different local governments in the Netherlands each seem to pursue their own energy policy. In the northern Netherlands biofuels are being promoted, while the eastern region of Arnhem-Nijmegen is investing in hydrogen. The southern province of Noord-Brabant has opted for the electric car, not least because Noord-Brabant is home to important automotive companies (NedCar, DAF trucks) and many high-tech automotive suppliers, particularly in the region of Eindhoven.

Still, the province’s “energy master plan” produced last year made no mention of electric transportation. But when the credit crisis struck, electric mobility suddenly seemed like a good idea to many companies. ‘Electric motoring offers an economic opportunity for companies which feel the need to innovate in order to survive in the prevailing economic climate’, says provincial administrator Lily Jacobs. ‘Besides, clean transportation



*'The fiscal climate will dictate in which countries manufacturers choose to introduce electric cars.'*

Photo: Bart Willemsen

is a must now that the supply of fossil fuels appears to be limited.'

Based on the province's long-term vision of its economic future, the "Electric Motive Technology Cluster" was founded in February 2009 by the province together with Enexis, the Automotive Technology Center (ATC) and a state-owned investment bank, the Brabantse Ontwikkelingsmaatschappij (BOM). Within this cluster, companies active in logistics, high-tech and the automotive sector work together with utility companies to advance the development of a mobile, smart network. BOM has bought a 35% stake in a company, All Green Vehicles, which is set to build a €6 million assembly line for

the production of hundreds of electric cars annually.

'The big difference with last year,' says Bob Bouhuijs of the BOM, 'is that we now have a miraculous situation in which sustainability and the stimulation of business come together. In Brabant we don't have manufacturers who build internal combustion engines, our network companies are in public hands after being split off from the energy suppliers, and we have many small technical supply companies that serve practically the entire automotive sector in Europe. So we are quite independent in this context, which is an ideal starting point for a new industry.'

Bouhuijs notes that the government is developing initiatives in many areas. For example, there are public-private cost sharing programmes for developing battery management systems and programmes which allow for a refund of up to 80% of the additional costs of electric vehicles.

Hence, Bouhuijs believes this is the perfect moment to come up with a well thought-out plan which will enable the province of Noord-Brabant to create a whole new industrial sector. The basics of the plan are already in place. The province has asked the consultancy firm Roland Berger to examine the effects of combined investments in the various industries, such as logistics, ICT, electronics and renewable energy, which can contribute to the development of the electric car. 'The Netherlands can become the Silicon Valley of the EU in electric cars if it succeeds in coordinating the market', says Rene Seyger, partner with the Amsterdam office of Roland Berger.

Jeroen Kroonen, head of the province's electric motoring project, cannot yet comment on Roland Berger's recommendations. 'This autumn, decisions will be made at a provincial level on the future of the electric car. It will then become clear how the recommendations fit in with the province's master plan for energy', he says. 'We have invested €5 million in pilot projects and plan to present the business community with a package of measures to boost electric motoring.'

In addition to Brabant, some of the major Dutch cities are developing initiatives to promote the electric car. Amsterdam wants to have 10,000 electric vehicles on the road in 2015. Public network operator Liander has committed itself to building 200 public charging stations. During the test phase electric vehicles can be recharged at no cost. Town councillor Marijke Vos notes that many private companies, including TNT postal services, local taxi company TCA, ABN Amro Bank and the Dutch Railways (NS), are eager to "green" their vehicle fleets by buying electric cars. Amsterdam will consult with other cities to standardise practices. 'Naturally, you want to be able to drive and recharge your car in Amsterdam in the same way as in Noord-Brabant.' ■