Our cars will be our power plants in the future

It is not the availability of energy that is relevant, but the energy services we need it for, such as a warm house or a boiled egg. These services should then be offered as energy-efficiently as possible. In his inaugural address TU Delft Professor Future Energy Systems and sustainable energy entrepreneur, Ad van Wijk, calls for the development of new energy systems and in particular for a new perspective on energy. The car, for instance, will be our future power plant according to Van Wijk. Ad van Wijk will give his inaugural address on 7 December at 15.00 in the Aula Congress Centre at TU Delft. The address will also be broadcast live via the internet.

Unlimited availability
"The energy debate almost always focuses on the availability of energy. How much fossil energy is left? How many households does one wind farm supply with electricity? What the debate should be about is which energy services are needed, a warm house, a boiled egg or a ton of steel for example, and how these services can be offered in an energy-efficient way", says Professor of Future Energy Systems and renewable energy entrepreneur Ad van Wijk. There is in fact no shortage of energy. "We can improve the energy-efficiency to a great degree – at the moment we waste up to 98% - maar more important is that there is an unlimited supply of sustainable energy." In his inaugural address at TU Delft, Van Wijk calls for the development of new, efficient, integrated, flexible and local sustainable energy systems, but in particular for a new perspective on the issue of energy.

The Energy Wall generates energy, reduces particle and noise emissions and houses a people mover (image by Florian Heinzelmann, TU Delft)

The car as a power plant
At TU Delft, Van Wijk plans to bring together scientists, students and businesses to develop efficient and sustainable energy services, energy systems and energy technology based on this new type of thinking. Van Wijk will do this by developing the Green Campus. "by means of a series of innovations on the TU Delft terrain we want to develop a sustainable, living and entrepreneurial campus designed 'to discover, learn and inspire'. One of these projects is a sustainable parking garage that will also serve as an electricity plant. Initially, the garage will only offer facilities for charging electric vehicles. In the future, Van Wijk also expects cars to be fitted with fuel cells. When the vehicles are parked, these fuel cells will be able to convert biogas or hydrogen into electricity. The garage will turn into an electricity plant of considerable size. Van Wijk: "If you use fuel cells to generate electricity in the parking garage, our 500 car garage will also be a 40 MW electricity plant." There is also an added bonus for car owners: they will actually be paid for parking.

Van Wijk predicts that the fuel cell car will be the new, efficient and flexible electricity production park of the future. "In one year we buy more electricity generating capacity via our cars than the electricity production capacity currently in place in the Netherlands." The greatest challenge, however, will be to innovate the energy industry and the legislation and regulations necessary for these changes.

Another project will be the Energy Wall sited alongside the Kruithuisweg, the motorway connecting the A13 and the railway station Delft Zuid. The wall generates energy, provides roadside lighting and reduces the emission of particulates and noise. A people mover is planned to ride on top of the wall.

Ad van Wijk
Ad van Wijk is a renewable energy entrepreneur and innovator. He studied Physics at the University of Utrecht, where he was awarded his PhD for research on wind energy and electricity production. From 1982 until 1997, he was a research fellow at the University of Utrecht, most recently as the head of the Energy and Environment research group. In 1984, Van Wijk founded the company Ecofys (which later became part of Econcern). Ecorncern supplies services and products in the field of renewable energy and energy efficiency, such as the offshore wind farm Prinses Amalia and various solar energy farms in Spain. Until 2009, Van Wijk was the CEO of Econcern. He has received a number of awards and prizes for his work, including Entrepreneur of the Year in 2007 and Top Man of the Year in 2008.

The part-time Chair in Future Energy Systems is funded by Eneco. By entering into this alliance, TU Delft and Eneco aim to boost the possibilities for and the use of renewable energy solutions in the Netherlands.

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Journalists are welcome to attend the address. Please register by sending an e-mail to i.boneschansker@tudelft.nl.

The inaugural address will also be broadcast live at 15.00, 7 December 2011 via http://now.tudelft.nl.

At TU Delft, more than 700 researchers and numerous students are working on energy-related subjects. The Delft Energy Initiative provides access to their work. More information is available at www.energy.tudelft.nl.