Political controversy heats up after critical OECD-report

EU maintains biofuel targets despite criticisms

Initially well-received in Europe, EU policy aimed at promoting biofuels over the coming decades is more and more coming up against resistance. Even so the EU will continue to press ahead with its policy, European Commission chairman José Manuel Barroso has pledged. The EU continues to regard biofuels as one of its main weapons in the fight to reduce greenhouse gases such as carbon dioxide (CO_2), and plans to launch a blueprint for an internal market for biofuels before the end of the year.

By Jan Schils

European government leaders meeting in Brussels agreed in March this year that from 2020 biofuel should account for ten percent of all fuel used for transport. In doing so they gave their full backing to proposals prepared by the European Commission in close collaboration with researchers into climate change, energy experts and industry.

However, a recent report by the influential Paris-based Organisation for Economic Cooperation and Development (OECD) has cast serious doubts on EU policy with regard to the production and usefulness of biofuels. The report, compiled by Richard Doornbosch and Ronald Steenblik, came as an unwelcome surprise. According to the OECD, biofuel production will require crop cultivation on an unprecedented scale, leading to serious environmental damage through the increased use of fertilizers and pesticides. In addition biofuel production is seen to be driving up the prices of numerous agricultural products such as grain, oilseed rape, maize, sugar and palm oil. In the medium term this is likely to hike food prices by 20 to 50 percent, the report's authors state, while the contribution biofuels will make in slowing global warming will be very limited. Doornbosch: 'The current push to boost the use of biofuels leads to unsustainable tensions that will destabilize entire markets without producing any substantial environmental benefits.' Doornbosch is also pessimistic about the end result: 'Even in the best possible scenario biofuels can only bring about a 3 percent reduction in energy-related CO_2 emissions.' The OECD report is also negative about the financial aspects. The US government currently invests 7 billion dollars annually in ethanol production, which works out at $500 per tonne of CO_2 saved. The price in Europe will be ten times higher.

The OECD does acknowledge there are good points to biofuels. Doornbosch: 'Biofuels certainly have their place, but the question is whether we should deploy them on such a massive scale as an alternative to fossil fuels in our cars.'

'Scrap targets'

European environmentalists have also expressed caution about biofuels. Initially green activists gave an unqualified welcome to biofuels as the only alternative to oil and coal, but since the OECD report their enthusiasm has been tempered. Another critic is Peter Nieuwenhuizen, from consultancy Arthur D. Little in Brussels. 'First generation biofuels generally

London, November 1979: 26 years old Mark Thatcher, son of the British Prime Minister Margaret Thatcher, demonstrates the prototype of a new racing car in London, the Formula Talbot, powered by a converted 1600 cc Sunbeam T1 saloon engine and fuelled with vegetable-based methanol. Photo: Bettman/Corbis.

encounter three important problems', says Nieuwenhuizen. 'Firstly the price isn't competitive with ordinary fuels, and so they need to be subsidised. That isn't such a problem with small volumes, but when use increases, it will cost the taxpayer more and more. That's the reason why biofuel companies in Germany for example run into problems once subsidies are scrapped.' Secondly, the contribution made by biofuels in reducing CO_2 emissions is very meagre. 'Of the current fuel cops only a limited amount is actually used for fuel. For example, only the oil retaining seeds of the corn cob. The rest of the crop is burned or allowed to compost, and so the bonded CO_2 is released back into the atmosphere within a year. Not only that, but growing, harvesting and then processing oil or maize into fuel also costs energy, and therefore CO_2 emissions'

The most positive exception to these two problems, according to Nieuwenhuizen, is bioethanol produced using Brazilian cane sugar. 'Cane sugar grows exceptionally well there thanks to the favourable climate and moreover it's an ideal biofuel crop'

But even sugar cane ethanol falls foul of the third problem plaguing biofuels: the competition with food crops for agricultural land and fresh water. 'We are now seeing price rises for basic agricultural products such as grain, rice, corn, milk and oils. We are already seeing unrest in developing countries caused by rising food prices.'

That's why Nieuwenhuizen is calling on the EU to invest in second generation biofuels. He distinguishes three categories. Firstly biofuels refined from crops that can be cultivated on land unsuitable for food production, such as jatropha. Secondly organisms such as algae that grow in salt water – thereby avoiding competition for land or fresh water. And thirdly biotechnological or thermic processes that can transform vegetation – such as grain or corn husks but also waste plant matter from ordinary grass, for example – into fuel. 'Only if we can make the switch to biofuels that don't require subsidies, that make a significant contribution to reducing CO_2 emissions and that don't compete with food production for land and water will we be able to create a sustainable and stable biofuel industry.'

Barroso's not for turning

But the European Commission has no intentions of scaling down the development and production of biofuels, despite increasing pressure from EU member states. According to a commission spokesman, the OECD report is being


Photo: Vladimir Rodionov/ PCL

seriously studied in Brussels. But he stressed the EU has no plans to abandon the agreed biofuel targets. Chairman José Manuel Barroso of the Commission recently reiterated this stance, although he made no explicit mention of the OECD report. Barroso said the European Commission is now working on the first blueprint for the creation of an internal biofuel market in the EU. A legislative proposal will be put forward before the end of this year.

Brussels-based association for the European biotechnology sector EuropaBio denies that the OECD report runs counter to the biofuel targets set by the EU. EuropaBio's public policy director Dick Carrez says that media coverage of the OECD document was inaccurate and exaggerated the criticisms put forward in the report. Carrez: 'In fact, the headlines in the press do not completely reflect the content of the paper. Contrary to the doomsday news headlines, the OECD report recognizes the serious need to address climate change and believes that biofuels are part of the solution. This is supported by the policy recommendations of the OECD report. They recommend that priority should be given to research into second-generation biofuels and that subsidies should be redirected from the use of biofuels to the R&D and demonstration phase of advanced technologies. They also recommend unified certification of biofuels on a global scale, which should be urgently placed on the WTO agenda. This is exactly what Europabio, via its Biofuels Task Force, is promoting.'

Carrez points out that the Commission, in its mid-term review of the Biofuels Directive, which is likely to be published in December 2007, will look to define second generation biofuels. In addition, the new legislation will also list compulsory 'sustainability criteria', including land use and biodiversity requirements, along with an obligation for biofuels not to emit more GHG in production than they save in use. 'Only biofuels that meet these standards will count towards the 10% target.'

Carrez notes, however, that second-generation biofuels cannot yet be produced cost-effectively on a large scale, and technological breakthroughs (especially in the areas of enzymes, pre-treatment and fermentation) are needed in order to make processes more

cost- and energy-efficient. Therefore, in order to facilitate the transition towards second generation biofuels, a market for first generation sustainable biofuels is needed, with an appropriate infrastructure and distribution.'

In other words, second-generation biofuels are the ideal, but we cannot skip the first-generation phase, according to Europabio. Carrez emphasizes that in the transport sector there simply is no realistic alternative for fossil-based fuels. 'The advantage of biofuels is that they can be blended with existing transport fuels, and they are compatible with existing vehicles.' As to the greenhouse gas benefits of biofuels, Carrez states that 'well-to-wheel assessments indicate that biofuels have definite benefits in terms of reduced greenhouse gas emissions compared to petroleum-based fuels, although the precise amount of saved CO_2 emission depends on the type of raw material used, the production process for the raw material, the conversion process and several other elements. These studies concluded that CO_2 savings with the present biofuel technologies are between 20 and 80% compared with conventional petrol. And this can increase to 90% and higher for second generation biofuels such as cellulosic ethanol.' Of course, adds Carrez, 'it will be important to make more efficient use of available land, to increase land productivity, meaning more biomass output/ha, as well as crop quality, meaning more fermentable carbohydrates or higher oil content.'

In order to harvest the full potential of biofuels, Europabio would like to see European legislators to follow a similar approach to the USA and China and initiate policy measures which will allow second generation biofuels to become a viable, commercial business within the next 4-6 years.

'The EU urgently needs to draw up a realistic roadmap for biomass production, technology development, and policy implementation in order to reach the 10% biofuels target', says Carrez. This roadmap will, as far Europabio is concerned, lead to what they call the 'integrated diversified biorefinery': an integrated cluster of industries, using a variety of different technologies to produce chemicals, materials, biofuels and power from biomass raw materials. ■