

Media release

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Bank Sarasin Sustainability Research: uncertain future for biofuels

The most important challenge for biofuels is the question of environmental benefit. This is the clear conclusion reached by Bank Sarasin in its latest sustainability study “Renewable Energies 2010” and the update on the theme of biofuels. First-generation biofuels in particular are in direct competition with food production and are forcing food prices upwards. The biofuel industry is therefore counting on the development of environmentally friendly and socially compatible technologies of the second and third generation. But factors such as crude oil prices, state subsidies and electric vehicles are other fundamental questions that investors have to deal with.

There are significant uncertainties surrounding the future of biofuels. In view of the limited availability of arable land and their doubtful environmental benefits, first-generation biofuels have limited potential as a fossil-fuel substitute, according to Sarasin’s new sustainability study. A life cycle analysis that takes into account not only CO₂, but all the associated environmental impacts, produces a positive result for only a small percentage of biofuels. Here, relevant considerations include overfertilisation and loss of biodiversity, but also the effects of indirect land use change. These effects have only recently been investigated in more depth: If biofuel crops are cultivated on existing arable land, mounting demand for food and cattle feed puts extra pressure on woods and grassland. Converting these areas into arable land can result in substantial CO₂ emissions that can produce a negative environmental footprint for biofuels.

Existing critical points confirmed

In Switzerland especially, it also appears that there is only modest demand for environmentally friendly fuels. Despite the fact that the bioethanol produced locally from scrap wood and organic waste is perfectly acceptable both from an ethical and biological perspective and has attracted tax breaks for the past two years. The reason for the decline is to be found in lower oil prices. The Swiss parliament’s decision to cut the tax on mineral oil in October 2010 will accelerate this trend. The critical conclusions that Bank Sarasin first came to in its sustainability study on biofuels back in 2006 have therefore been confirmed. At that time the authors already suspected that the boom was overdone and the sector’s growth would hit its limits.

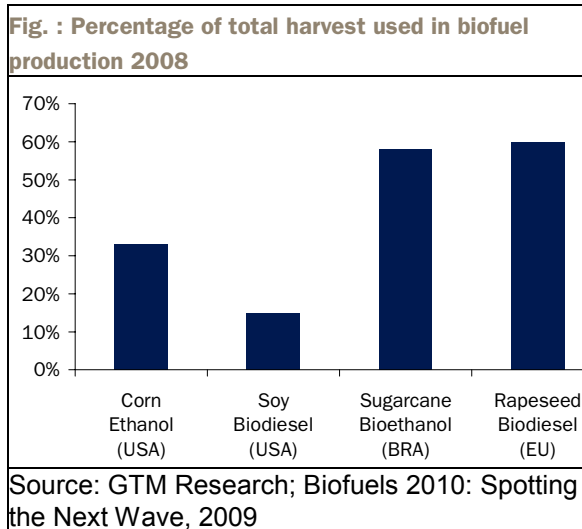
Sustainability study “Renewable energies 2010” now available

The full report “Renewable energies: evolving from a niche to a mass market” from Bank Sarasin (author: Matthias Fawer) provides an in-depth and critical survey of the current status of renewable energies and highlights the different aspects that need to be taken into account for sustainable asset management purposes. Copies of the report are available in German or English for a copyright fee of CHF 50 / EUR 35 (or free to clients and the press) from: gabriela.pace@sarasin.ch

Limited potential

Today, 30% of the maize crop in the USA and 50-60% of the sugar cane harvest in Brazil is already used to produce bioethanol (see figure). The finite availability of arable land, and the fact that even today a major portion of the total harvest of maize, soya, sugar cane and rapeseed is used for biofuels, significantly limits the potential of this first generation of biofuels. In 2008 bioethanol only

accounted for 3.7% of global fuel production. Biodiesel made an even smaller contribution to total sales of diesel, at just 1.5%. This is very little compared with the quantity of raw materials or crops used as feedstock.



Hopes rest on the second and third generation

Up to now, the production of biofuels has been based almost exclusively on first-generation technologies mainly using conventional fermentation or esterification processes. Second-generation biofuels are extracted using the biomass-to-liquid (BtL) process, or with the help of enzymes (cellulosic ethanol) from plant feedstock not used for food production. Second-generation technologies for the manufacture of cellulosic ethanol are still in the pilot phase. These will not come into commercial production until 2012 at the earliest. Third-generation biofuels are primarily fuels extracted from algae cultivated in water. However, profitable biodiesel production derived from algae will not be possible until 2016 at the earliest. But they could account for a third of biofuel production as early as 2022.

Many question marks regarding feasibility

At the moment the future of biofuels is still dominated by uncertainty, even though there are big opportunities for the new second and third generation technologies. But here too there are questions about the technical, economic and environmental feasibility of these fuels. There is also new competition in the form of electric car development. Moreover, the raw material and product prices on which the profitability of biofuels depends are subject to large fluctuations.

Renewables make good progress

The installation of new renewable energy capacity has gone well in 2009, despite the economic crisis, low oil price and lack of progress in climate protection policies. Both in Europe and the USA, more electricity production capacity based on renewable energy sources was installed than from conventional sources. Not just wind power (+31%), solar energy (+13%) and small hydro (+7%), but other forms of renewable energy such as ocean (+2%) and geothermal (+4%) managed to gain ground despite weaker growth rates overall. As an expanding commercial sector, renewable energies are currently evolving into a more mature and established industry, with photovoltaics moving more in the direction of the electronics industry, while wind energy shifts more towards the area of mechanical engineering and construction.

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