

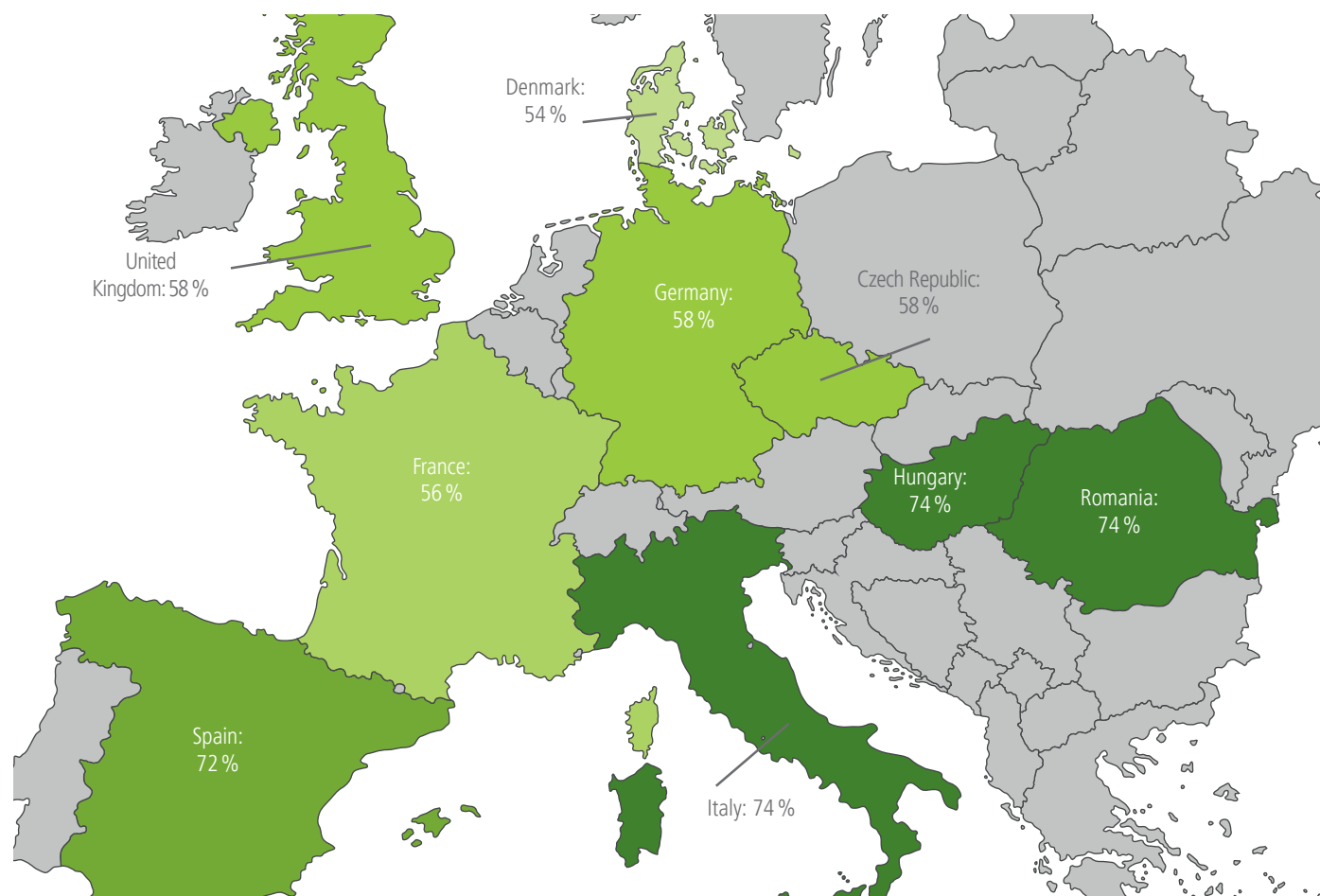
Pan-European survey on the perception of biofuels

On behalf of the FP7 project SUNLIQUID¹, the independent opinion research institute IMAS International conducted a survey on citizens' attitudes toward biofuels in nine European countries in July 2016.² The survey focused in particular on the advanced biofuel cellulosic ethanol. This bioethanol is produced from agricultural residues such as cereal straw. Competition to arable land is thus avoided because previously unusable parts of the plant serve as feedstock. In addition, this advanced biofuel is almost CO₂-neutral.³ This factsheet summarizes the results of the survey.

Advantages of biofuels: Environmental protection first

How important are the environmental benefits of biofuels to individual countries?

Across Europe, an average of 60 % of respondents consider the environmental benefits of biofuels, such as sustainability, reduction of greenhouse gases and air pollution, environmental compatibility, and risk reduction of environmental disasters, to be very important. These aspects are particularly relevant for the southern and southeastern European countries – Romania, Hungary, Italy and Spain.



¹ Clariant Produkte (Deutschland) GmbH, ExportHungary, BayWa AG, Energy Institute at the Johannes Kepler University Linz, Industrielle Biotechnologie Bayern Netzwerk GmbH and Bavarian Research Alliance GmbH.

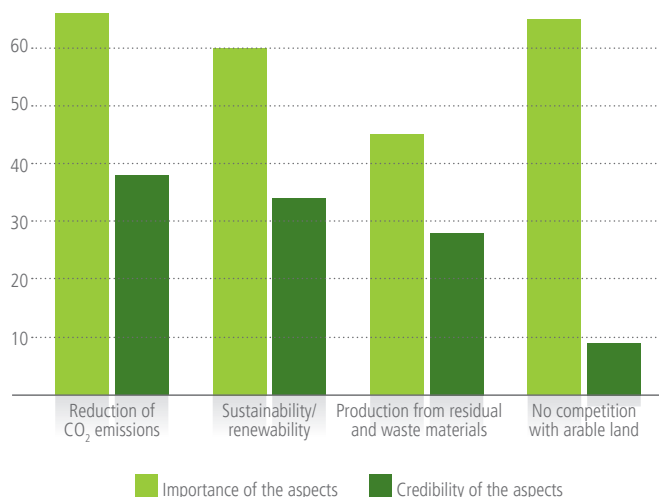
² Online survey in nine European countries (Germany, France, Spain, Italy, Great Britain, Denmark, Hungary, the Czech Republic, and Romania) between 05/07/2016 and 14/07/2016. 1,000 people (50% men, 50% women) aged 20 years and older were surveyed per country.

³ Depending on the manufacturer, up to 95% CO₂ is saved.

Opportunities for advanced biofuels

What aspects are important to you when it comes to biofuels, and to what extent do you think these statements actually apply to biofuels?

In addition to reducing CO₂ emissions and sustainable production, two-thirds of respondents in all countries consider it as very important that biofuels do not compete with arable land. Slightly less than half of the respondents also emphasize that it is important to them that biofuels are produced from residual and waste materials. However, many survey participants do not believe that biofuels meet these criteria. This highlights a major opportunity for advanced biofuels such as cellulosic ethanol, which are produced from waste and residues, significantly reduce CO₂ emissions and do not require additional arable land.

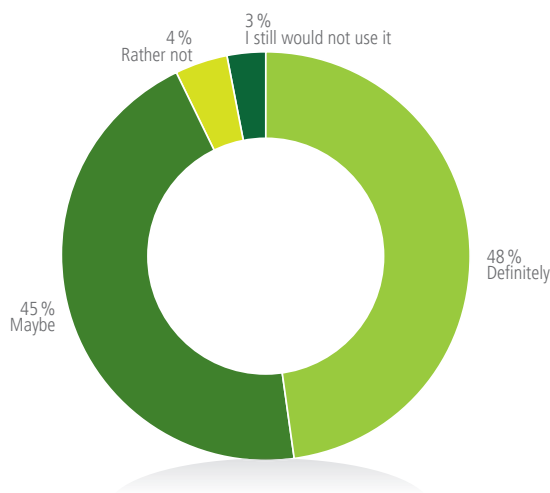


Great willingness to switch to advanced biofuels

Would you be willing to switch to advanced biofuels if they meet certain characteristics such as sustainable production, emission reduction, and engine compatibility?

On average, 48% of respondents are definitely willing to switch to advanced biofuels such as cellulosic ethanol, and another 45% *might* switch - provided that the aforementioned benefits, such as sustainable production, emission reduction, and engine compatibility are being fulfilled.

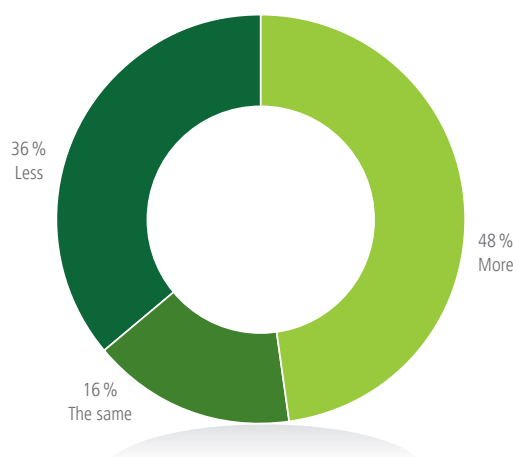
The southern and southeastern European countries Italy (65%), Romania (59%) and Hungary (59%) show an above-average willingness to fill up their cars with the advanced biofuel. The willingness to switch is also very high in Spain and France. Only in England the respondents were less willing to commit or more sceptical.



Strong willingness to spend more on advanced biofuels

How much would you be willing to spend on advanced biofuels if they fulfil certain requirements such as sustainable production, emission reduction, and engine compatibility?

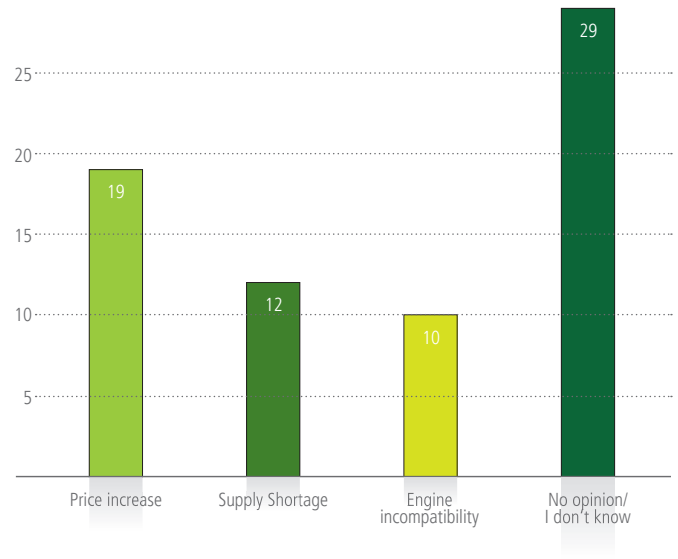
Almost half of the respondents (48%) would pay a *higher* price for advanced biofuels. In Spain (57%) and Germany (53%), this willingness is even significantly above average. The most frequently mentioned price range that users (22%) would be willing to pay is 1-5 cents more per litre. In the Eastern European countries on the contrary, respondents tend to be willing to pay up to 50 cents *less* per litre.



Few concerns about the use of biofuels

What are in your opinion the arguments against the use of biofuels such as bioethanol or biodiesel compared to conventional fuels (such as gasoline)?

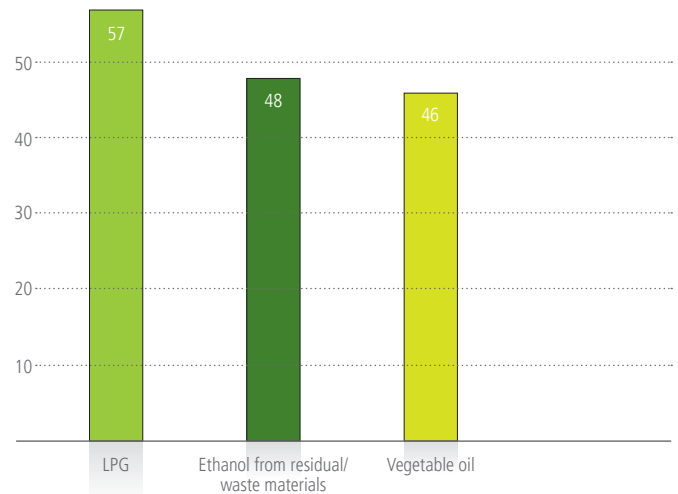
In principle, the respondents in all countries listed few arguments against the use of biofuels. Consumers are most likely to fear a price increase (average value: 19%), either from the fuel itself or due to tax increases. In addition, the respondents are not yet entirely convinced that sufficient biofuel can be produced or provided by a supply network (11%). The compatibility of the fuels with the engine is also viewed critically, and possible efficiency losses are feared (10%). This aspect is especially emphasized by survey participants from the Czech Republic and Hungary. However, a large proportion of respondents stated that they did not have an opinion (28%) on this subject. One reason for this may be that many people have not yet engaged with this topic in more detail.



Advanced biofuels as a viable alternative to conventional fuels

Which of the following alternatives to gasoline and diesel do you think is reasonable?

Those respondents who are familiar with the concept of advanced biofuels rate it as reasonable. After liquefied petroleum gas (LPG), advanced biofuels derived from residual and waste materials are cited as a viable alternative to conventional fuels such as gasoline and diesel. Ethanol from residual and waste materials is ranked just ahead of vegetable oil.



However, knowledge about biofuels is rated as insufficient across all countries. More than half (59%) of the survey participants feel that they are *not at all* or *not particularly* well informed. It is therefore not surprising that ethanol from residual/waste materials and its benefits are only known to a few respondents. Thus, only 21% had stated that they had already heard of the modern fuel.

