

Biofuels Delusions

The Saga of the Costly Fuels That Do Not Benefit the Environment

by Carlo Stagnaro

This week the Italian Parliament is to consider the conversion into statutory law of the Decree-Law 10 January 2006 No.2, which provided for a number of urgent actions in favour of agriculture, the agro-industry and fisheries, as well as several measures on corporate tax. In the course of the debate, a number of curious proposals emerged in connection with the issue of biofuels, lately brought to the attention of the Italian public by a couple of op-eds by the noted constitutional scholar and commentator Giovanni Sartori.¹

Making the most of the few remaining available hours before the House was dissolved in view of the forthcoming general election, Senators Lorenzo Piccioni and Riccardo Minardo (Forza Italia) have submitted an amendment (2.0.101a) to the law under discussion, providing that

1. Effective from July 1st, 2006, diesel and gasoline fuel producers are required to offer to consumers an amount of biofuels, to be established

in a supply chain agreement, in a framework agreement, or in an agro-energy programme, at least equal to 1 per cent of the total amount of diesel and gasoline fuel marketed in the previous year. Said percentage is to be increased by a further 1 per cent each year until 2010.

The same wording is repeated in Amendment 2.0.101b sponsored by Senator Roberto Salerno (Alleanza Nazionale). Replying to the doubts voiced by a number of Senators, particularly relating to the potential impact of such a measure on the treasury, Gianni Alemanno, Minister for Agriculture, stated that “the privileged tax regime applied to fuel produced from agricultural staples is only effective for a limited production quota to be determined each year. Since the current production is already above this quota, quite plainly any further amount of biofuels produced and marketed as a consequence of the proposed amendments will be subject to the ordinary, as opposed to the privileged excise; the tax receipts are therefore bound to increase, rather than to decrease.”

1: Giovanni Sartori, “L’energia dimenticata”, *Corriere della Sera*, 11 February 2006; Giovanni Sartori, “Più energia (e più coerenza)”, *Corriere della Sera*, 15 February 2006.

Not only the proposed amendments do involve a further distortion of an already over-regulated and over-taxed industry, but are just impracticable. Even in case such a measure was feasible, it would bring little or no benefit to Italian agriculture (unable to cope with a sudden increase in the demand of biofuels): instead, it would work in effect as a windfall profit tax on oil companies, whose burden would sooner or later impact the consumers. Moreover, the decidedly hostile Italian attitude towards genetically modified organisms (GMOs) threatens to foreclose what is perhaps the one feasible way to make biofuels competitive and thus to favour their diffusion, without the need of legislative measures stemming from ideological fervour or plain lobbying rather than from a sober market analysis.

Biofuels

Biofuels are produced from agricultural biomass and can be used for powering motor vehicles, either mixed with conventional fuels or—after a suitable modification of the engine—in pure form. The most promising fuels are biodiesel (obtained by a trans-esterification process of oilseed rape, soybean and sunflower oils) and bioethanol (produced by the fermentation of such agricultural staples as cereal grains and sugar-producing crops). Biofuels are not innovative: in the early 20th century Henry Ford had already noted their potential and was urging their use. However, they never became widely used, mainly for their economic shortcomings: even at current oil prices, biofuels are not competitive, unless they are subsidized.

From the point of view of Italian and European policy-makers, biofuels feature a number of benefits. Foremost among these is the fact that pollutant emissions of biofuels are lower than conventional fuels', while net carbon emissions are supposedly equal to zero (since the carbon dioxide that is released in the atmosphere is the same that was absorbed by the plants during their life-cycle).² The latter feature is critically important, since the emissions of pollutants of conventional fuels are similarly low. The drawbacks of biofuels, even from an environmental perspective, lie elsewhere.

Nicola Graniglia, Professor in Technology and Economics of Energy at the University of Siena, Italy, and avowed supporter of the use of biofuels, estimates that the production of slightly more than 300 thousand tonnes of biodiesel each year will require the sowing of about 300 thousand hectares (over 740 thousand acres) with oilseed rape.³ As a briefing of the European Environmental Agency warns:

- directly burning biomass to produce electricity is significantly more energy efficient than converting it into biofuels;
- under the assumption that the purpose of both national and European law is to favour the domestic production of biofuels (as opposed to their importation from non-EU countries), if the 5.75 % target of

2: Andrea Bartolazzi, *Le energie rinnovabili* (Milano: Hoepli, 2006), p.199. In fact, the CO₂ emissions budget ought also to take into account all emissions due to farming (engines, production of fertilizers and pesticides, watering, and so on).

3: <http://www.chim.unisi.it/basosi/didattica/BIOCARBURANTI.pdf>

the biofuels directive is to be fully met and all crops are home grown, biofuel crops would take up to between 4 % and 13 % of the total agricultural land in EU-25;

- if long term fallow land is used for the production of energy crops or intensive food production in order to meet increased demand for land, significant quantities of CO₂ will be released — possibly enough to offset for many years the CO₂ benefits from switching to biofuels;
- the conversion of extensive areas to energy crop production might impact negatively on the biodiversity of European farmland⁴

The effective energy balance of biofuels is likewise in doubt. David Pimentel, Professor of Ecology at Cornell University, faulted as “unsustainable” the biofuels-based energy strategies. A study by Pimentel and Tad Patzek, professor of civil and environmental engineering at Cornell University, shows that turning plants such as corn, soybeans and sunflowers into fuel uses more energy than the resulting ethanol or biodiesel generate.⁵

As for Italy, a report of the Agenzia Nazionale per la Protezione dell’Ambiente (National Environmental Protection Agency) states that “if

all diesel fuel consumed in Italy were required to contain a 5% of biodiesel, to cope with the increased demand in the best case our domestic farm production must increase by 200%, involving an increase of cultivated land by 50%, while water consumption and the release in the environment of pesticides were both to increase by 20%.”⁶ Such an estimate, moreover, does not take into account the impact of the production of bioethanol required to be mixed with gasoline. Of course, it might be possible to mitigate the impact of biofuels production through the recourse to genetically modified seeds, both existing or in development.

The Italian and European Regulations

The European Directive 2003/30/CE provides for a share of 5.75% of traditional fuels to be replaced by biofuels by 2010. In 1994 biofuels accounted for slightly more than 0.1% of all fuels used in the EU25 countries. In 2002 such a share had increased to 0.45%. Almost two-thirds of all European biofuels are produced in France and Germany, which provide for most of the biodiesel and bioethanol consumed in Italy, since the Italian domestic production only meets less than a fifth of the demand. The Legislative Decree No. 128 of May 30th, 2005, which made Italy compliant with the European Directive on biofuels, set more modest goals: a 1% share by the end of 2005 and a 2.5% share by 2010. The budget for 2005, however, further reduced these goals for lack of the necessary appropriations. The biodiesel

4: “Transport biofuels: exploring links with the energy and agriculture sectors,” *EEA Briefing*, N.4/2004, http://reports.eea.eu.int/briefing_2004_4/en/EEAbriefing_4_2004

5: Susan S. Lang, “Cornell ecologist’s study finds that producing ethanol and biodiesel from corn and other crops is not worth the energy”, Cornell University News Service, 5 July 2005, <http://www.news.cornell.edu/stories/July05/ethanol.toocostly.ssl.html>.

6: Comitato Scientifico ANPA, *Scienza e ambiente. Conoscenze scientifiche e priorità ambientali*, Vol.2 (Roma: ANPA, 2002), p.99.

quota is thus capped at 200 thousand tonnes per year for a six-year period, while 73 million euros are budgeted each year for bioethanol.

If, as seems likely, the Piccioni-Minardo and Salerno amendments are to be passed, the Italian policy on biofuels will turn to be more rigid. Fuel producers will be required to offer on the market 300 thousand tonnes of biodiesel and 230 thousand tonnes of bioethanol for the current year. Only a part of this amount—namely, 200 thousand tonnes of biodiesel and 180 thousand tonnes of bioethanol—is to be exempt from the excise tax: this means that the oil companies will be forced to bear the extra charges imposed by the new legislative measures. It is easy to see how, at least in part, these costs will be passed on to the consumers, already burdened by some of the highest fuel prices in Europe.

The remaining cost would function as a windfall profit tax on oil companies, accused of making excessive gains from oil prices. However there is no apparent reason to punish these companies—repeated investigations in the Italian market failed to find any evidence of price-fixing agreements between oil companies⁷—which are just beginning to recover from a decade of meager profits and low oil prices. As shown by Jerry Taylor and Peter Van Doren, taxing windfall profits is a “soft” kind of price controls and may engender the same perverse effects.⁸ Indeed, all countries where

such a measure has been implemented have experienced a scarcity of the regulated good: the long queues of cars waiting to buy fuel in Jimmy Carter’s America only disappeared after President Ronald Reagan lifted all price and wage controls. Furthermore, there is evidence of a correlation between the price of oil (and, therefore, of refined products) and the investments of the oil industry, as might reasonably be expected. A windfall profits tax—either direct or indirect—threatens such investments without any significant benefit for the consumers.⁹ Moreover, capital investments by the oil industry act as a sort of insurance against further price increases. As Leonardo Maugeri writes: “the longer the current wave of investments persists, the higher the probability that the price of crude will drop significantly down the road.”¹⁰ Punitive policies against industry, therefore, only end up with dragging on the very problems they are supposed to solve.

In theory, the purpose of the excise tax is to internalize the environmental cost of fuel use. In the case of biofuels, however, they are said to involve no environmental impact whatsoever, and therefore their exemption from the excise tax or their being subjected to a lower taxation—up to and not beyond the extent that fuel producers are required to introduce this kind of fuel in the market—is deemed to be a reasonable proposition, at least to avoid passing on both to the industry and the consumers the

Analysis, No.156, 12 January 2006, Cato Institute, http://www.cato.org/pub_display.php?pub_id=5352.

9: Margo M. Thorning, “Déjà vu on Windfall Profit Tax on Oil Industry”, *The Daily Reporter*, 9 February 2006.

10: Leonardo Maugeri, “Two Cheers for Expensive Oil”, *Foreign Affairs*, Vol.85, No.2, March-April 2006, p.161.

7: The sanction imposed on August 6th, 2000 by the Italian Antitrust Authority (n.8353) was later canceled by the State Council.

8: Jerry Taylor e Peter Van Doren, “Economic Amnesia. The Case against Oil Price Controls and Windfall Profit Taxes”, *Policy*

substitution cost. On the other hand, the excise tax in Italy is well above the minimum level set by the European Directive 2003/96/CE (namely, 0.359 euros for gasoline and 0.302 euros for diesel fuel). This leads to conclude that the revenue generated by the taxation of fuels is justified on an altogether different rationale than the internalization of environmental costs.

Conclusion

The requirement of mixing biofuels to conventional fuels is generally questionable, not only because it is a further regulatory intervention in an already over-regulated industry, but also since it is unclear whether the environmental benefits of biofuels (mainly zero net carbon dioxide emissions and a general reduction of other pollutants emissions) can offset the adverse environmental impact caused by the increase of cultivated farmland. Both the environmental and the strictly economic costs might be mitigated by the recourse to genetically modified seeds, but this course appears to be foreclosed in Italy by the strong prejudices against GMOs, embodied by agricultural policies of Minister Alemanno. Despite the weak opportunities left by Italian law on GMOs, so far the Ministry has not published the necessary guidelines in whose absence the Regional governments cannot draw their respective co-existence plans. Owing to the foot-dragging by the Agriculture Ministry, Italy is still off-limits for transgenic crops, and this causes the price tag of the measures in support of biofuels to soar. Instead of a—much questionable—protectionist policy, these measures end up with indirectly subsidizing foreign agrobusinesses.

Italy is suffering from a competitiveness gap that cannot be bridged by sharpening the long-standing problem of energy costs. Measures like those relating to biofuels can only worsen Italy's current predicament and are the expression of the wish to make politically correct choices that also allow to lavish pre-election privileges on a narrow group of rent seekers.

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