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Fact check on biofuels subsidies



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1 Introduction

1.1 Background GSI/IISD study

In April 2013, the Global Subsidies Initiative (GSI) and the International Institute for Sustainable Development (GSI/IISD) published the study "Biofuels – At what costs? A review of costs and benefits of EU biofuels policies". One of the key findings of the study is that biofuels are significantly supported by subsidies. The authors state that biofuels in the EU received € 9.3- 10.7 billion in 2011, which could be differentiated in:

1. Market transfers, which mainly refer to the effects of biofuel mandates on market prices;
2. Budgetary support, which include tax reductions and/or exemptions;
3. Support for Research and development (R&D).

Some NGOs use the GSI/IISD Study in their argument against biofuels, for example in the frame of the current debates in the European Parliament about biofuels ILUC policy. Due to the high amount of calculated subsidies for biofuels the GSI/IISD study received remarkable attention by decision-makers. The biofuels industry questions the factual correctness of the study.

1.2 About this report

As the high estimated subsidy of € 10 billion for biofuels stated by GSI/IISD was questioned, the Association of the German Biofuels Industry (VDB) asked Ecofys to briefly review the GSI/IISD study. In this report Ecofys presents the outcomes of this review. It has to be clearly stated that an in-depth review was not feasible, as the approach of GSI/IISD was not presented in full detail and much of the essential underlying data was not available in the GSI/IISD study 2013. Therefore previous GSI/IISD studies on biofuels subsidies in the EU have also been taken into account. The focus of the review was on re-calculating the subsidies for budgetary support for biodiesel and bioethanol for 2010 and 2011. Furthermore, Ecofys has made its own calculations on budgetary support for biofuels. For a better understanding of market transfer costs¹, the costs of market price support had been assessed. Finally the conclusion of GSI/IISD has been critically analysed based on our findings.

¹ GSI/IISD define "market transfers" as governmental costs for guaranteeing a share of the transport fuel market to biofuels and protecting the biofuels industry by regulating imports. Market transfer costs therefore comprise "market price support" due to biofuel mandates and "other market transfers" for border protection.

2 Review of “budgetary support” for ethanol and biodiesel

Budgetary support comprises support measures for biofuels in terms of tax exemptions and excise reduction, which are linked to a limited biofuels volume produced or to the biofuels consumption in an EU Member State (GSI/IISD 2013).

In order to review the figures on budgetary support presented in the GSI/IISD study 2013 it is crucial to also take into account previous GSI/IISD studies as they outlined the approach in more detail. Ecofys has also made its own calculations on budgetary support to put the GSI/IISD outcomes into perspective.

The review encompassed the following steps:

1. Review of the methodology used by GSI/IISD which is described in Jung et al. (2010) and Kutas et al. (2007);
2. Reconstruction and verification of the calculation of budgetary support conducted by GSI/IISD;
3. Determination of the amount of biofuels to which tax exemptions are actually applied based on the figures of biofuels production/consumption (whichever the exemption apply to) as stated in the Ecofys study on “Renewable energy progress and biofuels sustainability” conducted for the European Commission (Ecofys 2012);
4. Own calculation of the budgetary support for each EU Member State for the years 2010 and 2011 and comparison with GSI/IISD data. As GSI/IISD only mention the aggregated amount of budgetary support for biofuels for the whole EU, a detailed comparison per Member State was not feasible.

2.1 GSI/IISD methodology

Budgetary support comprises the major share of the estimated EU subsidies to the biofuel sector as presented in the GSI/IISD study (section 5.1.2). According to GSI/IISD, the budgetary support is estimated based on the GSI methodology explained in the GSI/IISD reports from 2010 (Jung et al. 2010) and 2007 (Kutas et al. 2007). Data used to calculate tax reductions/exemptions (reference year 2010) are presented in the annex to the report (section 6, page 8)².

² Version available to VDB from <http://www.iisd.org/gsi/benefits-eu-biofuel-policies> as of 17th April 2013. The version available to date (6th August 2013) on the GSI/IISD website does not contain the data.

GSI/IISD Calculation methodology

GSI/IISD define budgetary support as “reductions in, or exemptions from, fuel excise tax on volumes produced or consumed” (see page 35 in GSI/IISD 2013a; page 10, GSI/IISD 2010; page 68, GSI/IISD 2007). The methodology distinguishes between systems with and without quota:

- In systems without quota “...an undefined amount of consumption is exempted or reduced from taxation and thus foregone tax revenue highly depends on the level of consumption.” (GSI/IISD 2010). According to GSI/IISD most of the European countries have a system without quota.
- In systems with quota “...exemptions and reductions are only granted up to a certain level of production...” (GSI/IISD 2013a and GSI/IISD 2010). The EU countries with a quota system are Belgium, France, Ireland and Italy. This quota should not be confused with biofuels mandates (sometimes called “biofuels quota”), which describe a mandatory share of biofuels in relation to fossil fuels. Tax exemption quota defines a given volume of biofuels for which tax exemption is given. Any biofuels above this tax exemption quota are taxed with the full excises as for petrol respectively diesel.

The budgetary support is estimated by GSI/IISD based on the methodology described in previous reports (Jung et al. 2010 and Kutas et al. 2007). From the two reports, the clearest explanation of the methodology is found in Jung et al. (2010):

- Identification of excise-tax exemption on biofuels in the absence of and in combination with production quotas (respectively Sections 4.1.2.1 and 4.1.2.2 in Jung et al.) are discussed:
 - Examples of systems without quota are provided.
 - It is indicated that in systems with quota “(...) tax reliefs are only granted up to a certain level of production. Quotas are intended to limit the amount of foregone tax revenue (...)”.
- Estimation of the budgetary support in Section 4.1.2.3 (“Assessing the cost of excise-tax exemptions”) defined as the product of biofuels consumed (litre) and tax exemption (€/litre) (Jung et al. 2010³).

The following has to be considered when applying the methodology according to Jung et al. 2010:

- The support through tax exemptions has to be calculated based on the actual volume of biofuels that were exempted;
- In the case of quota systems associated to a tax exemption, the volume to which the exemption applies is equal to the actual consumed volume, when this is not higher than the quota or equal to the quota, in the opposite case;
- For quota systems Jung et al. 2010 apply the exemption to the total consumed volume. When the consumption is higher than the agreed quota, this leads to an over-estimation of the subsidized

³ Jung et al, 2010 p 48: „We carried out calculations on fore-gone tax revenue for 2007 and 2008 based on the quantity of biofuels consumed and the respective tax exemptions (Table 4.10 and Table 4.11).”

volume. This also does not take into account that exemptions often apply to a fraction of the biofuels sold.

2.2 Calculation of budgetary support

Verification of GSI/IISD calculations

Foregone taxes 2010

An exact verification of the calculation is not feasible, as the data on volumes of biofuel for which the tax exemption applies are not included in the GSI/IISD report. Furthermore the outcomes are only presented on an aggregated level so a detailed check on EU Member State level was therefore not possible. Since the references of the data used are indicated by GSI/IISD, Ecofys took the latest version of the given reference for the calculation.

Table 1: Data sources used by GSI/IISD 2013

Tax exemptions	<ul style="list-style-type: none"> • Table 5: EXCISE TAX RATES IN EU MEMBER STATES (2010, €/hectolitre) in the annex to the GSI/IISD study • References to EC Excise Duty Tables January 2011, for Sweden: State Aid Case "N112/2004-SE, Tax exemption for biofuels" of 2006. • References for excise duties and tax exemption for 2011 were not provided.
Consumption	<ul style="list-style-type: none"> • Data on the consumption of biofuels are not included in the report. • References: EurObserver 2012

Similar to Jung et al. 2010 (GSI/IISD report 2010), we multiplied the tax exemptions for biofuels, by the volume consumed, per type (bioethanol respectively biodiesel) and for the individual Member States.

A first check of table 5 on the annex of the GSI/IISD report revealed that there is apparently a mistake in the headlines of table 5 in GSI/IISD annex to the report. The data in the columns "ETHANOL EXCISE TAX RATE" and "BIODIESEL EXCISE TAX RATE" are actually the exemptions themselves, not excises. For instance, diesel in Germany in 2010 was taxed with 47.04 €/hectolitre and biodiesel was taxed with 18.30 €/hectolitre, which leads to a tax exemption of 28.74 €/hectolitre. However, the GSI/IISD table 5 in the annex to the report mentions a biodiesel tax exemption in Germany of 18.03 €/hectolitre. The German budgetary support for biodiesel in 2010 would therefore be underestimated by GSI/IISD, whereas in other EU MS the tax exemptions would be overestimated.

In order to take the possibility of the mistakenly used data for tax exemptions into account as well, we reproduced the calculations of GSI/IISD in two ways:

1. Option: Using the difference between excise duties for fossil fuel and excise duties for biofuel, as shown in Table 5 of the GSI/IISD annex. This is assuming that the difference is what GSI/IISD might have mistakenly used as tax exemption.

2. Option: Assuming that columns "ETHANOL EXCISE TAX RATE" and "BIODIESEL TAX RATE" refer to the actual exemptions according to table 5 in the GSI/IISD annex.

The data on volume exemption applied for the GSI/IISD calculations are not included in its annex. We assumed that the exemptions apply to the total consumed volume, in accordance with the previous report by Jung et al. 2010 (GSI/IISD report 2010).

The outcomes of the verification of the GSI/IISD study with the two options are outlined in table 2 below.

Table 2: Verification of the GSI/IISD estimations on budgetary support.

<i>Budgetary support 2010 in million €</i>	GSI/IISD	Verification by Ecofys	
		Option 1 (Divergence)	Option 2 (Divergence)
Bioethanol	2,421	895 (63%)	1,688 (30%)
Biodiesel	3,591	2,150 (40%)	3,039 (15%)

Neither option 1 nor option 2 leads to the outcomes as calculated by GSI/IISD. Even the outcomes of option 2 using the assumed proper tax exemptions for biofuels as provided in the annex by GSI/IISD are lower than the results in the GSI/IISD report. As the methodology is not described in a transparent manner, the different results might result from an incorrect iteration of the calculation. Ecofys has therefore also undertaken own estimations on budgetary support for biofuels.

Foregone taxes 2011

Verification was not feasible, as the data used for 2011 were not included in the report.

2.3 Budgetary support estimated by Ecofys

For our own estimation of budgetary support we rely on Ecofys' data comprised in the PREBS report for the European Commission for 2010. Data for 2011 were derived from official public sources of EU Member States, from Eurostat and from EurObserver.

Table 3: Ecofys approach for estimation of budgetary support of biofuels

Tax exemptions:	MS Progress reports, EC Excise Duty Tables and other official country reports.
Biofuel consumption	Eurostat, EurObserver
Share of biofuel consumed the tax reduction applies to	MS Progress reports, EC Excise Duty Tables and other official country reports

Ecofys applied the following methodology for the calculation:

$$\text{Foregone taxes} = \text{Tax exemption} \times \text{Volume of biofuels to which the exemption applies}$$

This approach does not differ much from the GSI/IISD approach, however we have carefully assessed and considered the specific regulations for tax exemption for the Member States consuming most biofuels. It has to be clearly stated that the Ecofys approach is only a rough estimate as the focus was on Member States with the highest consumption of biofuels.

As GSI/IISD provides only aggregated data a detailed comparison for each EU Member State is not feasible. Nevertheless, we will provide a detailed overview of the estimated budgetary support for bioethanol and biodiesel for 2010 and 2011 for each Member State. This transparent approach enables us to assume which aspects might explain the differences between the estimations of GSI/IISD and Ecofys.

2.3.1 Estimated budgetary support 2010

The outcomes of the comparison between the estimated budgetary support by GSI/IISD and Ecofys for 2010 are presented in table 4 below.

Table 4: Comparison of estimated budgetary support for 2010

<i>Budgetary support 2010 in € million</i>	GSI/IISD	Ecofys	Difference
Bioethanol	2,421	695	1,726 (71%)
Biodiesel	3,591	2,110	1,481 (41%)
Total	6,012	2,805	3,207 (53%)

Whereas the GSI/IISD figure for biodiesel is € 1.4 billion higher than the respective Ecofys estimation, the budgetary support for bioethanol estimated by GSI/IISD is even 3.5 times higher than the Ecofys estimation. In sum we estimate that the EU budgetary support in 2010 was around € 2.8 billion, which is € 3.2 billion (53%) less than calculated by GSI/IISD. For a better understanding of this significant difference, the data for the estimation of budgetary support in 2010 for bioethanol and biodiesel are provided in table 5 respectively table 6.

Six of the 27 EU Member States (Bulgaria, Cyprus, Estonia, Greece, Malta, Portugal) had no bioethanol consumption in 2010. In addition actual bioethanol consumption in three other EU Member States (Finland, Germany, Romanian) was not subject to tax exemptions. Until 2011, Finland had the same taxation for biofuels as for fossil fuels (Progress report Finland, 2011). According to the German Energy tax law only E70 and higher ethanol blends are tax exempted, which are only sold in marginal volumes. ETBE, E5 and E10, the most sold bioethanol blends are subject to full taxation. Other aspects reducing the amount of budgetary support for bioethanol are limits on tax exemptions or

quotas. Italy capped the tax exemption for bioethanol at € 3.8 million (NREAP⁴ Italy, 2010) and Belgium defined the volume for the tax-exemption for bioethanol at 1.2 million litre at an actual consumption of 83 million litre (ValBiom, 2011). Altogether the aspects described above lead to a significantly lower budgetary support for bioethanol in 2010, compared to what was calculated by GSI/IISD.

Table 5: Estimated budgetary support for bioethanol 2010 per EU-MS

Bioethanol 2010			
	Ethanol excise exemption	Consumption / Quota for tax exemption	Budgetary support
	(€/hectolitre)	million litre	thousand €
Austria	71.70	106	76,181
Belgium	59.22	1	732
Bulgaria	23.87	0	0
Cyprus	29.87	0	0
Czech Republic	50.51	91	45,776
Denmark	3.00	42	1,266
Estonia	42.28	0	0
Finland	0.00	125	0
France	18.00	623	112,219
Germany	65.45	0	0
Greece	0.00	0	0
Hungary	0.00	89	0
Ireland	54.32	47	25,461
Italy	28.76	242	3,800
Latvia	37.98	13	4,747
Lithuania	43.44	16	6,788
Luxembourg	46.21	2	722
Malta	0.00	0	0
Netherlands	19.28	209	40,363
Poland	2.06	295	6,069
Portugal	0.00	0	0
Romania	0.00	73	0
Slovakia	36.80	48	17,825
Slovenia	48.95	5	2,295
Spain	42.47	359	152,623
Sweden	54.20	317	171,916
United Kingdom	23.24	498	26,520
EU-27		3,203	695,301

Sources: Ecofys 2012, Eurostat

With regard to the budgetary support for biodiesel 2010, the difference between the estimations of GSI/IISD and Ecofys is more than € 1.4 billion. This difference might also result from other limiting aspects or quotas for tax exemption. Like for bioethanol Belgium also introduced a quota for tax exemption for a volume of 2.19 million litres for biodiesel, but in practice only 483 million litres was actually put on the market. From April 2010 onwards only biodiesel derived from used cooking oil

⁴ National Renewable Energy Action Plan (NREAP)

(UCO) was subject to tax exemptions in the UK⁵. Taking this into account the tax exemption for biodiesel in the UK sums up to € 145 million. Italy set the quota for tax-exempted biodiesel at 20.38 million litres (NREAP Italy, 2010), which was almost achieved at an actual consumption of 20.28 million litres in 2010. In Germany only pure biodiesel (B100) is subject to tax exemption.⁶ However it has to be noted that this is not the case for B100, which is counted against the biofuels quota obligation. This has not been corrected in the calculation below, so the budgetary support for biodiesel in Germany is slightly overestimated.

Table 6: Estimated budgetary support for biodiesel 2010 per EU-MS

Biodiesel 2010			
	Biodiesel excise reduction	Consumption / Quota for tax exemption	Budgetary support
	(€/hectolitre)	million litre	thousand €
Austria	42.40	530	224,588
Belgium	18.03	2	394
Bulgaria	20.44	16	3,194
Cyprus	24.50	23	5,742
Czech Republic	53.55	270	144,760
Denmark	3.00	0	0
Estonia	39.29	0	0
Finland	0.00	98	0
France	11.00	3,159	347,531
Germany	28.74	332	95,324
Greece	0.00	200	0
Hungary	0.00	184	0
Ireland	44.92	95	42,812
Italy	33.84	20	6,895
Latvia	33.88	30	10,059
Lithuania	31.34	53	16,647
Luxembourg	31.00	63	19,375
Malta	35.24	0	0
Netherlands	0.00	148	0
Poland	5.20	759	39,488
Portugal	28.00	469	131,250
Romania	0.00	105	0
Slovakia	51.40	208	106,816
Slovenia	43.20	66	28,350
Spain	33.10	1,884	623,728
Sweden	42.60	277	117,816
United Kingdom	2.33	662	145,159
EU-27		9,654	2,109,929

Sources: Ecofys 2012, FNR 2012

⁵ <http://www.hmrc.gov.uk/briefs/excise-duty/brief2310.htm>,

In order to get the volumes of tax-exempted biodiesel in the UK Ecofys took the biodiesel consumption until April 2010 plus the UK derived biodiesel from April to December 2010 and applied it to the calendaric year as the financial year in the UK runs from April to April.

⁶ <http://biokraftstoffe.fnr.de/rahmenbedingungen/gesetzeslage/energiesteuergesetz/>

Ecofys estimates that around 9.6 billion litres of the actual consumption of 15.5 billion litres of biodiesel in the EU-27 were subject to tax exemption in 2010.

2.3.2 Estimated budgetary support for 2011

The differences between the estimated budgetary support for biofuels in 2011 between GSI/IISD and Ecofys are in the same range as the outcomes for 2010. The GSI/IISD figure for bioethanol is five times higher resulting in a difference of € 1.9 billion compared to Ecofys. For biodiesel the difference for budgetary support is around € 1.6 billion.

Table 7: Comparison of estimated budgetary support for 2011

<i>Budgetary support 2011 in € million</i>	GSI/IISD	Ecofys	Difference
Bioethanol	2,610	709	1,901 (73%)
Biodiesel	3,194	1,599	1,595 (50%)
Total	5,804	2,307	3,497 (60%)

In total Ecofys estimated a budgetary support for biofuels of almost € 3.5 billion less than what was presented by GSI/IISD, i.e. a difference of 60%.

Compared to 2010 the most important changes of tax exemption for bioethanol took place in Finland and the UK (see table 8).

As of 2011 the taxation of all fuels in Finland is based on their energy content. Due to their lower energy content biofuels benefit from this new taxation, especially bioethanol with an energy content of 27% below petrol. The Fuel Tax Act defines that the same carbon dioxide tax is levied on unsustainable biofuels as on fossil fuels, 50% of the carbon dioxide tax on a comparable fossil fuel is levied on sustainable biofuels. Considering this Ecofys came to an excise reduction of 44 €/hectolitre for bioethanol in Finland. Already in the Budget for 2008, the UK government announced that the tax exemption for biofuels would cease from April 2010 onwards, with UCO derived biodiesel being the only exemption. Therefore, without further relevant changes the slight increase in bioethanol consumption from 2010 to 2011 is reflected in a slight increase of budgetary support.

Table 8: Estimated budgetary support for bioethanol 2011 per EU-MS

Bioethanol 2011			
	Ethanol excise exemption	Consumption / Quota for tax exemption	Budgetary support
	(€/hectolitre)	million litre	thousand €
Austria	71.70	103	73,941
Belgium	57.00	1	704
Bulgaria	23.87	0	0
Cyprus	29.87	0	0
Czech Republic	50.51	95	48,143
Denmark	3.00	77	2,297
Estonia	42.28	0	0
Finland	44	138	60,328
France	14	619	86,625
Germany	65.45	0	0
Greece	0.00	0	0
Hungary	0.00	75	0
Ireland	54.32	48	26,310
Italy	35.9	225	3,554
Latvia	37.98	13	4,747
Lithuania	43.44	16	6,788
Luxembourg	46.21	6	2,888
Malta	0.00	0	0
Netherlands	19.28	233	44,881
Poland	2.06	280	5,748
Portugal	0	0	0
Romania	0.00	73	0
Slovakia	36.80	50	18,400
Slovenia	48.95	6	3,059
Spain	42.47	352	149,305
Sweden	54.20	316	171,069
United Kingdom	0.00	516	0
EU-27		3,240	708,787

Sources: Member State progress reports 2011, Eurostat 2011, EC excise duty tables 2012

Although the EU biodiesel consumption increased with 80 million litres from 2010 to 2011 the budgetary support estimated by Ecofys dropped significantly with more than € 500 million (see table 9).

The most relevant reason for the reduced budgetary support at marginal higher consumption is the effect of new taxation in Ireland, Italy and Portugal. As of January 2011 biofuels in Ireland are subject to full taxation except for the carbon charge component, i.e. 5.33 €/hectolitre for biodiesel. The 4-year excise reduction programme for biofuels in Italy ended in 2010. Since 2011 there is no excise exemption for biofuels in Italy, with the exception of the use of bioethanol for agricultural purposes. The Portuguese biofuels support scheme was terminated by Decree-Law No 117/2010 of 25 October 2010. Tax exemption was only maintained for small specialist producers as laid down in the Portuguese Code on Special Taxes on Consumption.

Table 9: Estimated budgetary support for biodiesel 2011 per EU-MS

Biodiesel	2011		
	Biodiesel excise reduction (€/hectolitre)	Consumption / Quota for tax exemption million litre	Budgetary support thousand €
Austria	42.40	479	203,038
Belgium	18.03	2	394
Bulgaria	20.44	20	3,992
Cyprus	24.50	18	4,529
Czech Republic	53.55	280	149,803
Denmark	3.00	96	2,878
Estonia	39.29	0	0
Finland	0.00	119	0
France	8.00	2,366	189,256
Germany	28.44	110	31,228
Greece	0.00	120	0
Hungary	0.00	128	0
Ireland	5.33	79	4,196
Italy	0.00	1,496	0
Latvia	33.88	17	5,770
Lithuania	31.34	41	12,888
Luxembourg	31.00	45	14,091
Malta	35.24	0	0
Netherlands	0.00	200	0
Poland	5.20	1,000	51,976
Portugal	0.00	361	0
Romania	0.00	161	0
Slovakia	51.40	114	58,421
Slovenia	43.20	37	15,790
Spain	33.10	1,714	567,446
Sweden	53.88	264	142,189
United Kingdom		848	140,655
EU-27		10,114	1,598,539

Sources: Member State progress reports 2011, EurObserver 2012, FNR 2012

The estimations on budgetary support for biofuels by Ecofys are significantly lower than the estimations by GSI/IISD. For 2010 the Ecofys outcomes are 53% lower and for 2011 the outcomes are 40% lower than the outcomes of GSI/IISD.

3 Review of “market transfers”

The other two components of the “EU Subsidies to the Biofuel Sector” included in the GSI/IISD study 2013 (section 5.1.2) are market transfers and support for research and development. The latter is not assessed in this study.

3.1 Market price support

The GSI/IISD study 2013 defines market transfers as an indicator that “[...] measures the intervention affecting both consumer and producer prices by artificially elevating the price of biofuels [...]”. It also indicates that “[...] In the European Union, among the most important instruments are mandatory blending rates and border protection through tariffs[...]”.

In our view, the current biofuels market faces sufficient supply and competition so that the resulting prices are not artificially high. The market price support should be seen as a stimulus to oil marketing companies to buy and sell the more expensive biofuels as part of their product portfolio.

Among the two categories for market transfers, the dominating category is market price support by guaranteeing a share for biofuels by means of mandatory blending rates. The Ecofys review therefore focussed on market price support and did not assess other market transfer cost, e.g. effects of countervailing duties against imports. Since the market price supports calculated by GSI/IISD are particularly high for biodiesel, we carefully assessed the basis of these calculations. It is important to note that market price support is not considered as a subsidy by the World Trade Organization (WTO) (GSI/IISD 2013).

GSI/IISD estimated the market price support for biodiesel by multiplying the price gap between an EU biodiesel wholesale average price and a world biodiesel average price with the EU biodiesel production of 2010 respectively 2011. The biodiesel production and not the consumption is used as a multiplier as the guaranteed market share by mandates encourages the biofuel production by “enhancing the predictability of market developments and reducing investment risks” (GSI/IISD 2013). Whereas the calculation for 2011 is outlined in a transparent manner, the data for the calculation of the market price support for 2010 are not provided. For 2010 GSI/IISD calculated a market price support for biodiesel of € 146 to € 699 million and for 2011 of € 2,114 to € 2,772 million. The huge range is explained by the fact that the “amount of subsidy is very sensitive to changes in either world or EU reference prices” (GSI/IISD, 2013). Therefore the authors included a minus 7.5 sensitivity for the EU wholesale price to get a lower bound reference price as well. It is important to note that higher EU biofuels prices also result from the need for compliance with demanding technical standards.

Ecofys is not convinced by the approach chosen by GSI/IISD for estimating a market price support. If market price support also defines measures that guarantee that a share of biofuels is sold in the transport fuels market, then the estimation has to be between EU biofuels and fossil fuels. According to the OECD market price support refers to monetary transfers from consumers and taxpayers to create a price gap between domestic producers' prices and reference prices of a specific agricultural commodity.⁷ For our analysis this means that the total price gap between biodiesel and diesel should be defined as market price support, consisting of budgetary support paid by taxpayers and consumer costs due to mandates.

In addition, the GSI/IISD method, as it examines the gap between EU and world prices for biofuels, implicitly includes EU import taxes on biofuels and their feedstocks. Indeed, import taxes on many products, including fossil fuel products, keep EU prices artificially high compared to world prices. On the other hand, the world market price on some biofuels is, in turn, artificially low because of production/blending subsidies in their production regions. Abolishment of import taxes could possibly lead to dumping biofuels on the EU market below production costs. All in all, we find that the gap between world and EU market prices for biofuels is not a good measure to understand price support.

In order to get a better understanding for the figures on market price support by GSI/IISD we conducted our own estimation for 2011 according to the conditions presented above. Ecofys used the price gap of € 0.22 between the average EU biodiesel wholesale price and the EU net diesel price in 2011, as mentioned by GSI/IISD with reference to Platts and the European Commission. The biodiesel production volume was taken from the European Biodiesel Board (EBB).⁸

For the estimation of the market price support for biodiesel Ecofys multiplied the price gap between the EU biodiesel wholesale price and the EU net diesel price with the biodiesel production volume.

Table 10: Estimated market price support for biodiesel 2011

<i>Estimation of EU biodiesel market price support</i>	2011
Average price gap EU biodiesel wholesale price & average EU net diesel price (€)	0.22
EU Biodiesel production (Mill L)	10,008
Market price support (Mill €)	2,202
<hr/>	
- Budgetary support	1,599
Consumer costs €	603

The price gap of € 2.2 billion is the market price support, which consists of around € 1.6 billion budgetary support and consumer costs of € 603 million.⁹ Our estimated market price support,

⁷ <http://stats.oecd.org/glossary/detail.asp?ID=1600>

⁸ <http://www.ebb-eu.org/stats.php>

⁹ Due to higher prices biodiesel generates more VAT than fossil diesel. Ideally this would also have to be taken into account for estimating the market price support.

defined as the price gap following the OECD definition is within the range estimated by GSI/IISD. However it has to be noted that a direct comparison is not feasible due to the different parameters used. Ecofys is convinced that the market price support, i.e. the price gap, already includes the budgetary support so the budgetary support should not be added to the market price support as done by GSI/IISD.

As mentioned above, the price gap is bridged by a variety of measures in the different Member States, including the budgetary support measures of the previous chapter. The price gap is very sensitive and is for instance influenced by feedstock prices as well as by the interaction between the prices for fossil fuels and biofuels.

4 Review of “Government Revenue Foregone Due to Tax Breaks for Biofuels”

Section 5.1.4 in the GSI/IISD report aims to “highlight the burden of tax exemptions on government coffers” until 2015. For this purpose, GSI/IISD carries out a “hypothetical calculation” based on the assumption that tax exemptions and biofuel consumption in 2011 remain until 2015 without any changes. GSI/IISD assume that the foregone revenue from tax exemption will be the budgetary support as estimated for 2011 for each year until 2015. This calculation results in a total of € 13,052 and € 15,968 aggregated foregone tax revenues due to tax exemptions to bioethanol and biodiesel respectively.

It has to be noted that a calculation of future foregone tax revenues cannot lead to reliable and robust outcomes, as future changes in tax policies are almost impossible to predict due to the variety of influencing parameter over time (e.g. political changes due to elections, policy changes influence from lobbyists, etc.). Instead, conclusions on future scenarios, based on the actual announced tax policy changes were feasible. In this case, the individual policy changes need to be documented and included in the scenario calculation. Otherwise the results are misleading. Ecofys therefore briefly assessed whether the underlying assumption by GSI/IISD that the tax exemptions will continue could be justified for an estimation of foregone taxes until 2015.

GSI/IISD argues that large producing or consuming countries like Finland, France, Germany, Italy, Spain and the Netherlands still have reduced tax rates in place for biofuels and assumes that this will be the case until 2015.

As shown above Finland has already introduced taxation according to energy content, thereby enabling a truly fair taxation of fossil fuels and biofuels. Since the calorific value of biofuels is lower than for fossil fuels, in several cases, tax exemptions intend to level the playing field especially for bioethanol with an energy content of around 27% below petrol. For biodiesel with energy content of 10% below diesel the effect will be less significant. In addition the Finnish Government lowers the carbon tax for sustainable biofuels. On double-counting biofuels from waste and residues the Finnish Fuel Tax act levies no carbon tax at all.

Directorate General Taxation and Customs Union of the EC proposed a similar approach to “remove current imbalances [of the taxation of energy products] and take into account both their CO₂ emissions and energy content.”¹⁰ Ecofys is convinced that such a fair taxation will also lead to a reduction in budgetary support for biofuels.

¹⁰ http://ec.europa.eu/taxation_customs/taxation/excise_duties/energy_products/legislation/

The Netherlands stopped the temporal tax reduction of biofuels in 2007. In 2009 the Netherlands decided to reduce the excise duty of bioethanol by 27% thereby reflecting the lower energy content (Progress report The Netherlands, 2011).

Germany has implemented an Energy tax law (revised in 2009), which gradually aligns the taxation of pure biofuels (B100) with the level for fossil fuels. The amount of biodiesel in blends has been fully taxed since 2006. In 2011 and 2012 B100 in Germany was taxed with 18.6 €/hectolitre. From 2013 onwards biodiesel is taxed with 45.03 €/hectolitre, which is close to tax for diesel of 47.04 €/hectolitre. The budgetary support in Germany for biodiesel therefore has already decreased significantly, so that a simple continuation from 2011 onwards is not reflecting the reality.

In Spain the Special Duty Act levying a special rate of 0 €/hectolitre of hydrocarbon tax on biofuels was terminated in December 2012 (Progress Report, Spain 2012). Further excise reductions on biofuels have not been reported.

These examples demonstrate that the hypothetical calculation of foregone revenue due to tax exemption by GSI/IISD could not be justified. Instead the decreasing budgetary support from 2010 to 2011 is expected to continue.

5 Conclusions and key findings

The GSI/IISD estimated a total value of governmental support for biofuels in the EU of around € 7 billion in 2010 and up to € 10.6 billion in 2011. Ecofys assessed these figures in this report thereby focussing on the two factors with the highest figures on the total subsidies, i.e. budgetary support and market price support.

Due to the lack of data and a non-transparent description of the methodology a detailed re-calculation of the budgetary support was not feasible. Our results applying the assumed GSI/IISD approach already led to lower results than calculated by GSI/IISD. Furthermore, it seems very likely that there was a mistake in the GSI/IISD calculations, due to wrongly labelled columns in table 5 in the annex to that report. Ecofys applied two options to correct the possible mistake of using excise rate instead of the actual exemption, both led to a considerable lower budgetary support.

Ecofys' own estimations on budgetary support were significantly lower than those calculated by GSI/IISD. The budgetary support for biofuels estimated by Ecofys is 53% (2010) and 60% (2011) lower as the GSI/IISD outcomes. Especially the budgetary support for bioethanol is highly overestimated by GSI/IISD, with € 1.9 billion more in 2011 than what Ecofys estimates. For biodiesel we assessed the budgetary support and the market price support in detail, thereby following a different approach to GSI/IISD, by taking price gap between biodiesel and fossil diesel.

Table 11: Estimated biodiesel subsidies 2011

<i>Estimated biodiesel subsidies 2011 in Mill €</i>	GSI/IISD		Ecofys	Difference	
Budgetary support		3,194	1,599	1,595	1,595
Market price support (GSI/IISD)* / Consumer costs (Ecofys)	2,114	2,772	603	1,511	2,169
Total		5,966	2,202**	3,106	3,764

*with minus 7.5% price sensitivity leading to a lower bound reference price

** total market price support in the Ecofys estimation

Whereas GSI/IISD adds the budgetary support to the market price support, Ecofys has a different understanding. We are convinced that budgetary support is already included in the market price support. The market price support of € 2.2 billion estimated by Ecofys is within the range of the market price support estimated by GSI/IISD. However in total the biodiesel subsidies in 2011 estimated by Ecofys are € 3.1 to 3.7 billion lower than the results of GSI/IISD.

The continuation of the tax exemptions for biofuels until 2015 as supposed by GSI/IISD, could not be verified and we have falsified several underlying assumptions.

Although the review of Ecofys was only conducted on a rough basis, the roughness of our assessment does not explain the differences in the outcomes. We conclude that the outcomes of the GSI/IISD 2013 study on biofuels subsidies should be critically questioned.

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