



Guidelines for completing the form 45.85 appendix A2 Ecological requirements for biofuels

- » *These guidelines are intended for Swiss producers and importers of biofuels that submit an application for tax relief to the Directorate General of Customs (Oberzolldirektion, OZD) in accordance with the Mineral Oil Tax Act (MinOTA).*
 - » *All applicants must complete the form 45.85 appendix A2 if they are required to meet the ecological requirements under the Mineral Oil Tax Ordinance (MinOTO).*
 - » *The specific requirements are defined in the DETEC ordinance on proof of fulfilment of the ecological requirements for biofuels (BTrV).*
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1 General

1.1 About the guidelines

1.1.1 Purpose and use

A certain amount of persistence and meticulousness is required in completing the form 45.85 appendix A2 (*hereinafter*: application form). The fulfilment of the ecological requirements can only be verified if all of the required information has been provided. Therefore, it is important to make sure that the application form is not missing any information. To assist applicants with this task, the Federal Office for the Environment (FOEN) has developed these guidelines. The explanations and graphic examples provided are designed to help applicants complete the form and avoid time-consuming additional inquiries so that applications can be processed more rapidly as a result.

1.1.2 Structure of the guidelines

The guidelines are divided into three chapters. Chapter 1 presents the main legal bases and provides general instructions on completing the application form. Chapter 2 discusses the recognition of laws and standards for the simplified procedure. Finally, Chapter 3 offers explanations and examples of the various questions in the application form.

1.2 Obligations of applicants

1.2.1 Obligation to provide information

Under Articles 2-7 of the BTrV, applicants must provide information on the types and quality of biofuels, the areas used as well as the entire fuel production chain from feedstock cultivation to the

receipt of fuels by consumers. The information must be comprehensible, traceable and verifiable. It should enable the authorities to follow the entire production chain from feedstock cultivation and fuel production to import into Switzerland (including transport) and the domestic production plant. In the case of production chains with complex interactions between actors, it may be useful to provide a diagram of the production path so that it is easier to understand. Although applicants are not required to provide a diagram, it can clarify the situation and help prevent the need for further inquiries.

1.2.2 Completeness

The application form must be completed in full and accompanied by the required documentation. The fields that must be completed are in grey.

The FOEN may at any time request additional information or documentation, if this is necessary to verify the fulfilment of ecological requirements.

1.2.3 Obligation to report changes in information

Applicants must promptly notify the Directorate General of Customs (Oberzolldirektion, OZD) of any change in the biomass used or other renewable energy sources or changes in the production chain that may result in the non-fulfilment of ecological and social requirements as well as changes in the product flow or the persons involved in the trade (Art. 19h para. 2 subpara. a MinOTO).

1.2.4 Offences

Any violation of the obligation to provide proof, declarations, information and substantiation constitutes an offence in the meaning of the MinOTO. Anyone who provides false information concerning the fulfilment of minimum ecological or social requirements or has been granted the tax exemption but then violates the minimum requirements will be liable to a fine. The mineral oil tax will also be payable retroactively.

1.3 Important information for completion of the application form

This application form should be completed for fuel that is fully or partially produced from biomass or other renewable energy sources, even if the starting material is partially comprised of wastes or residues. A separate copy of Appendix A2 must be completed for each feedstock and fuel.

Unless otherwise specified, the figures provided in the application form should be annual averages. If the feedstocks, starting products, auxiliary substances or other materials used come from different producers, the figures provided should be weighted annual averages based on delivery quantities.

Where the application form does not provide enough space for answers, a separate sheet of paper may be used.

If applicants cannot provide any information in response to a question because the question does not apply to them, they should place a zero in the box or draw a line through it. It must be clear that no questions have been omitted.

2 Simplified procedure

Article 8 of the BTrV lays down a simplified procedure for proving compliance. The FOEN may in certain cases approve the simplified procedure. If applicants can prove that the fuels were produced in accordance with standards that are fully or partially equivalent to the requirements in Article 19c of the MinOTO (e.g. a national law or a nationally or internationally recognised standard), the FOEN may release them from the obligation to provide the information stipulated in Articles 3 to 7 of the BTrV. Furthermore, applicants must provide a copy of the relevant law or standard with their application and submit proof that the feedstocks were produced in accordance with it. The FOEN is responsible for recognising the equivalence of the law or standard with the requirements of the MinOTO.

If the feedstocks for biofuels were produced in accordance with a specific law or standard, some of the questions on the application form may not have to be answered. In that case, applicants should find out if the applied standard has been recognised by the FOEN for the simplified procedure. Previously verified laws and standards and their evaluations are published on the Web site of the Swiss Federal Customs Administration. (Note: This information is not published in English on the Web site.)

www.minoest.admin.ch → Biogene Treibstoffe

Applicants who produce biofuels in accordance with a standard that has not yet been verified may contact the FOEN. The FOEN will check the standard in order to determine whether it is equivalent to the legal requirements.

Furthermore, the FOEN may waive the provision of specific information under Art. 3–7, provided it is not required to verify whether the ecological requirements under Article 19c of the MinOTA are fulfilled due to the type and production process of the biofuels.

However, it should be noted that fuels must always be produced physically from feedstocks that have been the subject of an approved application in accordance with the application process. Mixtures with other feedstocks or fuels (fully segregated product flow) are never acceptable. Mass balance calculations – such as those in the EU – are never tolerated.

3 Explanations of individual questions

Information about the quality of biofuels

Question 1

Name the laws or standards that you have complied with in the production of feedstock or fuel.

If the fuel was produced in accordance with a national law, please specify which one. This law must apply to fuel production of fuel and not feedstock production. An example of this is the EU directive on the promotion of the use of energy from renewable sources.



An appropriate confirmation or certificate must be submitted with the application to prove your compliance with the particular law or standard.

If the feedstocks for biofuels were produced in accordance with a specific law or standard, some of the questions on the application form may not need to be answered. Therefore, you should find out from the FOEN if the applied standard has been recognised for the simplified procedure (see Chapter 2).

Example

1. Laws and standards		for feedstocks	for fuels
Environ. perform. record		<input type="checkbox"/>	
Cross compliance		<input checked="" type="checkbox"/>	
FSC		<input type="checkbox"/>	
Integrated production		<input type="checkbox"/>	
Biodynamic		<input type="checkbox"/>	
Organic		<input type="checkbox"/>	
National law:	<i>Directive 200/28/EC</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Quality standard:	<i>DIN EN 14214</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other:	<i>RSB</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Question 2

Enter the country and region where the feedstock is produced.

Example

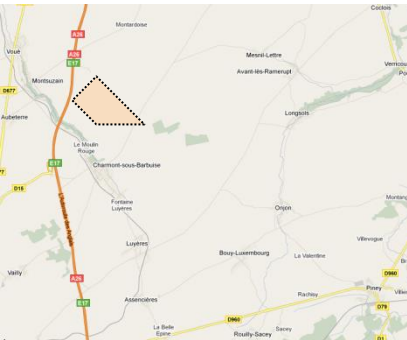
2. Country of origin and geography of the area where the feedstock used is cultivated			
Country:	<i>Switzerland</i>	Region:	<i>Vaud</i>



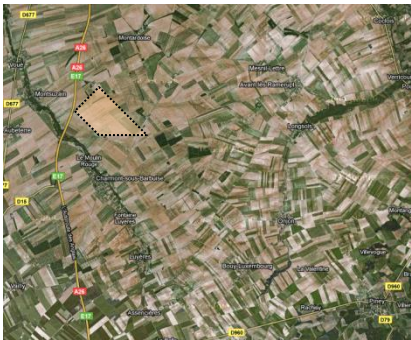
Attach a map or aerial image in which the cultivation area is demarcated.

Simplified examples

E.g. map



E.g. aerial view



To make it possible to locate the areas, it is important for corresponding reference points to be identifiable on the map or aerial image.

The following reference points are helpful:

- Natural elements (e.g. forests, rivers, lakes, marshes, etc.)
- Cities, towns, transport routes
- National, district and parcel boundaries and parcel numbers
- Longitudes, latitudes, coordinates

Provide maps and aerial images with as much of the following information as possible:

- The date on which the map was published or the aerial image was made
- Legend and scale

Question 3

Describe how the area used was used on 1 January 2008 [3.a)]. Then explain how it has been used each year since 2008 to present [3.b)].

Example

3. Land use		
a) Type of use on 1 January 2008		b) Type of use after 1 January 2008
<input checked="" type="checkbox"/> Agricultural land		2008: Agricultural land
<input type="checkbox"/> Pasture		2009: Agricultural land
<input type="checkbox"/> Forest		2010: Agricultural land
<input type="checkbox"/> Forested area		2011: Fallow
<input type="checkbox"/> Savanna		2012: Agricultural land
<input type="checkbox"/> Wetland		2013: Agricultural land
<input type="checkbox"/> Peat bog		2014: Agricultural land
<input type="checkbox"/> Mire		2015: Fallow
<input type="checkbox"/> Protected area		2016: Agricultural land
<input type="checkbox"/> Grassland		2017:
<input type="checkbox"/> Not used		2018:
<input type="checkbox"/> Other:		2019:
		2020:

Information on the cultivation and harvesting of biomass



If you produce a fuel from different renewable energy sources than biomass, you do **not** have to fill out page 2 of the form.

Question 4

Question 4 a)

For each activity (e.g. tillage, sowing, irrigation, fertilisation/crop treatment, harvesting, etc.), enter the type of machine used and the number of hours it was used per ha and year or the fuel consumption per ha and year.

Example

a) Machines used		
Activity/machine type	h/ha/y	o. kg fuel/ha/y
Tillage (tractor)	1.3	(20)
Seed bed preparation (tractor)	0.7	(8)
Sowing (tractor)	0.6	(4)
Fertilisation (tractor)	1	(3)
Crop treatment (tractor)	1	(3)
Harvesting (combine)	1	(17)

Then enter the percentage (%) of machines that are equipped with particle filters.

Percentage of machines with particle filters (%)	75%
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Question 4 b)

Enter all other energy sources that are used to cultivate the feedstock.

Example

b) Energy sources used			
Type	Use	kWh/ha/y	kg/ha/y
Electricity	Irrigation	600	
or			
diesel	irrigation		100

Question 4 c)

If the cultivation area is irrigated, answer “Yes” and enter the quantity of water per ha and year.

Then specify the water source. If all of the water comes from a river or ground water, enter the value 100% next to “Surface water” or “Ground water”.

Example

c) Irrigation required					
Irrigation required	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Surface water	%	60
Water quantity	m ³ /ha/y	1,000	Ground water	%	40

Question 5

Question 5 a)

Enter the total quantity of nitrogen per year and hectare that is spread to cultivate the feedstock. In this case, the quantity of N in kg should be indicated and not the quantity of fertiliser. Then enter the quantity of each type of fertiliser as a % or in kg/ha/y.

Example

a. Nitrogen (N)	%	kg/ha/y
Ammonium nitrate	13.0%	29.4
Urea	10.3%	23.3
Diammonium phosphate	6.9%	15.6
Calcium ammonium nitrate	62.9%	142.2
Ammonium sulphate	0.0%	0.0
Other	6.9%	15.6
Total	100%	226.1

Question 5 b)

Enter the total quantity of phosphate per year and hectare that is spread to cultivate the feedstock. In this case, the quantity of P₂O₅ in kg should be indicated and not the quantity of fertiliser. Then enter the quantity of each type of fertiliser as a % or in kg/ha/y.

Example

b) Phosphate (P ₂ O ₅)	Percentage	kg/ha/y
Triple superphosphate	42.6 %	51.5
Single superphosphate	14.2 %	17.2
Diammonium phosphate	21.6 %	26.1
Phosphorite	0.0 %	0.0
Thomas meal	0.0 %	0.0
Other:	21.6 %	26.1
Total	100%	120.9

Question 5 c)

Enter the total quantity of potassium per year and hectare that is spread to cultivate the feedstock. In this case, the quantity of K₂O in kg should be indicated and not the quantity of fertiliser. Then enter the quantity of each type of fertiliser as a % or in kg/ha/y.

Example

c) Potassium (K ₂ O)	Percentage	kg/ha/y
Potassium chloride	48.0 %	136.3
Potassium sulphate	52.0 %	147.7
Other:	0.0 %	0.0
Total	100%	284.0

Question 5 d)

If organic fertilisers are spread in the cultivation area, for solid fertilisers, enter the type of fertiliser (description of the type of livestock the fertiliser comes from) and the quantity in kg per ha and year. For the fluid fertilisers, enter the type of fertiliser and the volume in m³ per ha and year. In this case, the undiluted quantity in m³ should be indicated.

Example

d) Organic fertilisers	m ³ /ha/y	t/ha/y
Liquid manure dairy cattle	10	
Liquid manure rearing pigs	10	
Dung deep litter house dairy cows		15

Question 5 e)

For each crop treatment product, enter its active ingredient, the quantities used in the cultivation area in kg pro ha and year, and its type.

Example

e) Crop treatment product					
Active ingredient	Type	kg/ha/y	Active ingredient	Type	kg/ha/y
Metazachlor	Herbicide	1			
Cypermethrin	Insecticide	0.025			
Tebuconazole	Fungicide	0.25			

Question 6

List the quantity per ha, the value per kg and the planned type of use and disposal method for all main products, by-products and waste generated by cultivation.

Example

6. Products & Waste	Main products, by-products and waste	kg/ha/y	Value in CHF/kg	Use or disposal
	Rape	3,200	0.81	Fuel production
	Rape straw	9,000	-	Organic fertiliser

Information on the production of biofuels

Question 7

Question 7 a)

Briefly explain the production process and the technology used.

Example

a) Briefly describe the production process and the technology used
e.g. cold pressing followed by transesterification using methanol and potassium hydroxide and then vacuum distillation.

Question 7 b)

Please enter the renewable feedstock and the quantity used in fuel production as well as the quantity of fuel produced including the units of the quantities. For the quantity of the feedstock used, use units such as volume or weight of the feedstock per unit of fuel or per year. The quantity of fuel produced should be indicated as volume or weight pro year. Also indicate whether electrolysis occurs in the production process with electricity from the network.

Example

b) Type and quantity of the renewable feedstock used			
Type of renewable feedstock used	Rape		
Quantity of feedstock used	350	Unit	t/y
Quantity of fuel produced	150	Unit	m ³ /y
Does electrolysis occur with electricity from the network?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Question 7 c)

If the feedstock has to be dried, answer “Yes” and enter the quantity of energy consumed from the type of fuel (petrol, wood, gas, etc.) or electricity source (nuclear power, hydropower or electricity mix) as volume, weight or in kWh per kg of feedstock.

Example

c) Drying			
Energy consumed		Unit	
Energy source			

Frage 7 d)

Enter the required quantity of each auxiliary substance used to produce the fuel. Units should be indicated, such as volume or weight of the auxiliary substance per unit of fuel or per year.

Example

d) Auxiliary substance used to produce fuel					
Auxiliary substance	Quantity	Unit	Auxiliary substance	Quantity	Unit
Methanol	0.01	kg/kg fuel			
Na-Methylate	0.015	kg/kg fuel			
NaOH	0.045	kg/kg fuel			

Question 7 e)

Enter the information on the waste generated in the production of the fuel, its quantity and the planned disposal method. Units should be indicated, such as volume or weight of the waste per unit of fuel or per year.

Example

e) Waste			
Type of waste	Disposal method	Quantity	Unit

Question 7 f)

If greenhouse gases or pollutants are released in the production of the fuel, enter the quantity emitted for each of these substances. Units should be indicated, such as volume or weight of the emission per unit of fuel or per year.

Example

f) Greenhouse gas and pollutant emissions					
Emission	Quantity	Unit	Emission	Quantity	Unit
Methane	0.042	kg/kg fuel			

Question 8

Specify the means of transport used and the distance between the various processing sites in the production chain. In doing so, please take into account the entire process chain from cultivation of the feedstock to receipt by consumers.

Example

8. Transport	From	To	Means of transport	km
	<i>Cultivation area</i>	<i>Pressing</i>	<i>Truck</i>	<i>60</i>
	<i>Pressing</i>	<i>Transesterification</i>	<i>Rail</i>	<i>350</i>

Question 9

In the "Production step" column, enter the various steps in processing feedstock (A) into fuel (B_F).

Then specify for each production step the initial main product that is transformed into intermediate products – products and by-products (B₁, B₂, B₃ etc.). The first main product (A) must be the same as the feedstock that was named in question 1. The information in column [2] completes the beginning of the statement in column [1]: "Product (A) is used to produce product (B)." Add the names of the main products and by-products produced in each processing step in column [2]. You can also list biological fuel (B_F) as the end product in this column.

In column [3], enter the production steps that follow from the products and by-products in column [2]. "Waste" should be entered in column [3] for products that have to be managed. Only one line of the chart in question 17 ("Wastes") should be filled in for this.

9. Main products and by-products					
	[1]		[2]		[3]
Production step	Product (A) ...	Unit (A)	... is used to produce product (B).	Unit (B)	(B) is used in/for/as
Cultivation	<i>Rape</i>	<i>ha</i>	<i>Grain (B₁)</i>	<i>kg</i>	<i>Pressing</i>
			<i>Straw (B₂)</i>	<i>kg</i>	<i>Fodder</i>
Pressing	<i>Grain (B₁)</i>	<i>kg</i>	<i>Oil (B₄)</i>	<i>kg</i>	<i>Transesterification</i>
			<i>Press cakes (B₅)</i>	<i>kg</i>	<i>Fodder</i>
Trans-esterification	<i>Oil (B₄)</i>	<i>kg</i>	<i>RME (B_F)</i>	<i>kg</i>	<i>End product</i>
			<i>Glycerine (B₆)</i>	<i>kg</i>	<i>End product</i>
			<i>Gas (B₇)</i>	<i>kg</i>	<i>End product</i>

Question 10

Enter the yields in the columns. The cultivation phase in column [4] refers to the moist mass (not the dry matter). The quantities must correspond to 1 kg of each main product in each production step.

In column [5], enter the energy yields as heating values (H_i) in MJ or kWh per unit of each of the main products or by-products from column [2].

In column [6], enter the economic yields in CHF per kg of each of the main products and by-products from column [2].

Example

		10. Yield		
	[2]	[4]	[5]	[6]
Production step	...is used to produce product (B).	Yield B per unit A	Energy yield in MJ or kWh per unit B	Economic yield in CHF per unit B
Cultivation	Grain	3,500	27.40 MJ	0.30
	Straw	10,000	15.00 MJ	0.05
	Plant wastes			
Pressing	Oil	0.35	37.20 MJ	0.28
	Press cakes	0.65	15.00 MJ	0.19
Trans-esterification	RME	1.00	37.20 MJ	1.35
	Glycerine	0.10	19.00 MJ	1.10
	Gas	0.02	21.40 MJ	0.05

Question 11

Enter the type (column [7]) and quantity (column [8]) of energy, where applicable, **for each production step** that was used to produce the main and by-products in column [2].

Example

		11. Energy	
	[2]	[7]	[8]
Production step	...is used to produce product (B).	Type of energy used	kWh per kg (B)
Cultivation	Grain		
	Straw		
	Plant wastes		
Pressing	Oil	Electricity mix CH	0.0025
	Press cakes		
Trans-esterification	RME	Natural gas	0.017
	Glycerine	Electricity mix CH	0.075
	Gas		

Diagram of the production path and fuel production

Optional

For questions 7-11, you may either enter the information directly in the application form or submit a diagram. If you choose to submit a diagram, please make sure that it contains all of the requested information. A diagram is helpful but not required.

In cases of complex production chains, a diagram may be easier to understand. Although a diagram is helpful, it is not required.

Example

