



Evaluation and validation of sustainability and traceability tools

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1. Introduction and Objectives

During task 4.3. of the BIOMASUD project an on-line platform <http://trazabilidad.ciemat.es/> (although by this moment is in a provisional “pre-production” domain <Http://trazabilidad.grupotercerfase.com>) was developed to keep record of data related with batches and traceability (quantity, date of production, type of biomass, GHG emissions, etc.). The idea was to add some capabilities to the platform and keeping all the data about quality and sustainability in one database.

The objective of is that producers’ staff can easily calculate and upload on the platform all the sustainability and quality data without wasting too much time and without the necessity to hire expert personnel to do it. As specified in the proposal, the design must be very intuitive and easy to use so all producers can make use of it.

The features that have been included to the BIOMASUD platform are:

- New sustainability criteria defined in task 4.1.
- The **GHG calculation** tool developed in task 4.2. with the new calculation methodology in line with RED II Directive is included in the platform to calculate the GHG emissions along the supply chain.
- The **energy balance** calculation with the improved methodology developed in task 4.2. is included in the platform to calculate the energy balance along the supply chain.

Sensible information about the certified companies will not be accessible for the general public and only users with special profiles will be able to access.

Within task 6.3 “Commissioning of the system on the market: pilot label granting”, in every country where the consortium has been implementing the BIOmasud certification system, the partners have been organising pilot audits to test in the field the new requirements of the certification and bringing the feedback to the definitive version of the handbook and make its implementation feasible in the reality.

The partners responsible for the BIOmasud certification in all countries will have to use the BIOmasud sustainability and traceability tools developed in WP4 to pilot biofuel producers and traders to whom the label is being granted in Task 6.3. This pilot exercise was used in order to validate and, when necessary, to improve or adapt the tools to the different pilot cases that can be observed.

The result of this task is a revised sustainability calculation tool that will be incorporated to the renewed BIOmasud certification system (web application in Task 4.3)

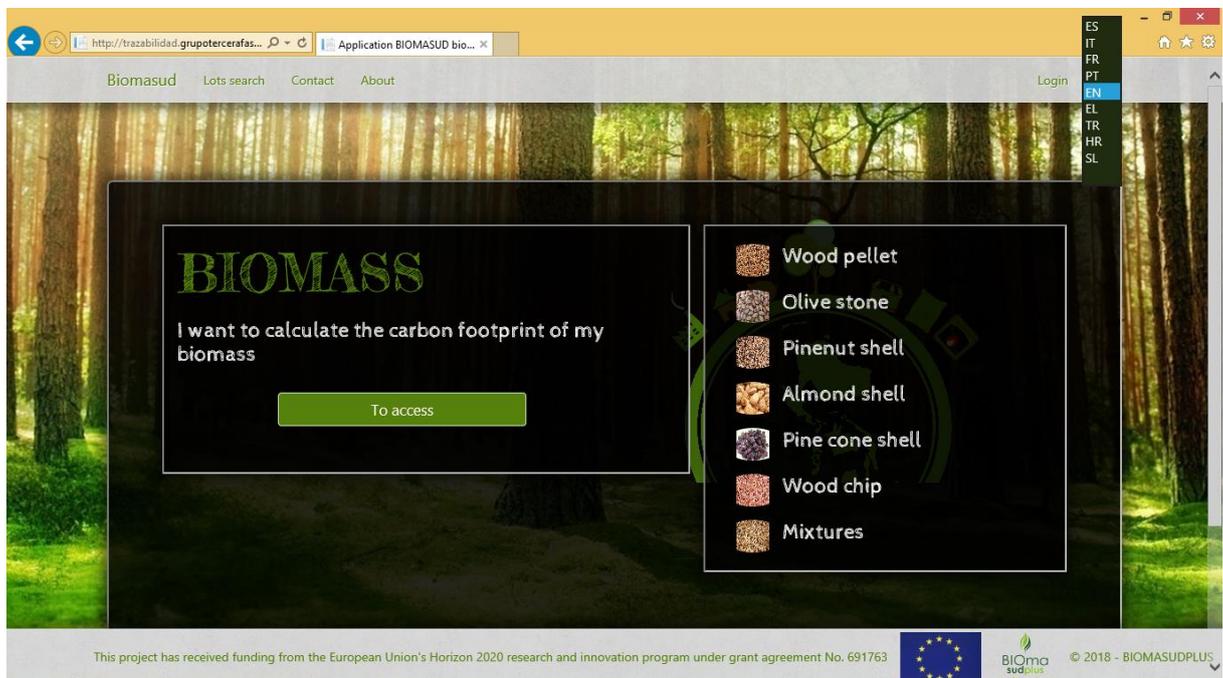
2. Main Modifications

With the feedback of the partners implementing BIOMASUD certification in their respective countries we have collected the main modifications or adds that have been introduced in the On-line platform.

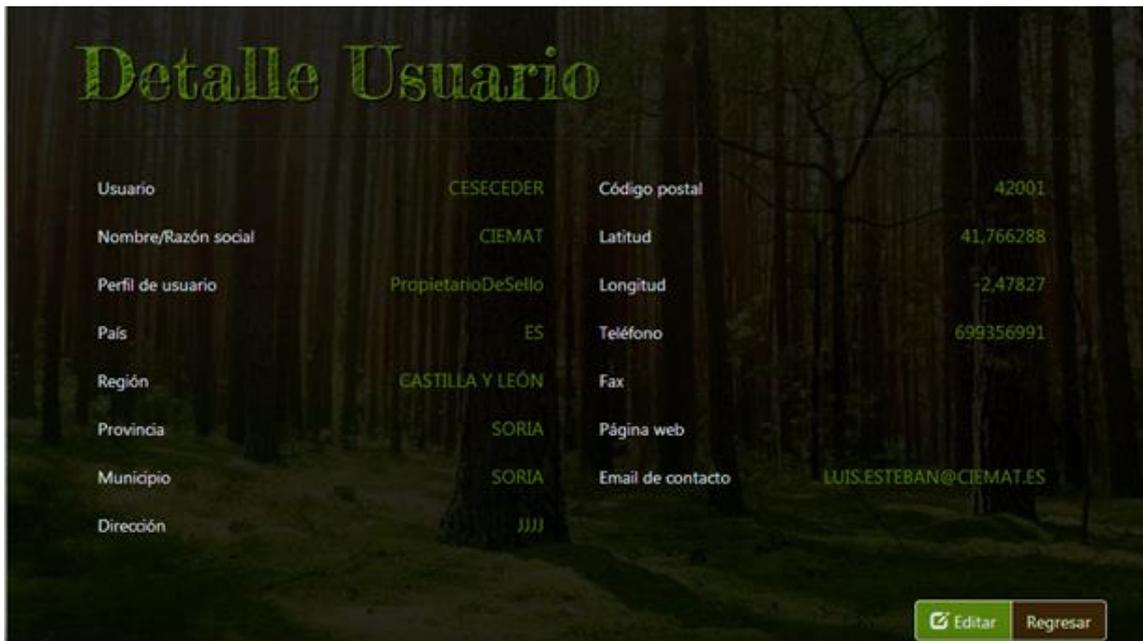
Still in this test phase, the platform is on the domain of TFS, partner of the project and the one specialized in programming this kind of applications <http://trazabilidad.grupotercerfase.com>. Once corrections will be finished it will be transferred to <http://trazabilidad.ciemat.es> and linked to the certification's WEB.

On the following pages we can find the most important modifications:

- **Translations:** Now the platform is available in all the languages where BIOMASUD is being implemented: Spain, Italy, France, English, Portuguese, Greece, Slovenian, Croatian and Turkish. Corrections to the mentioned languages have been continuously correcting during these last months



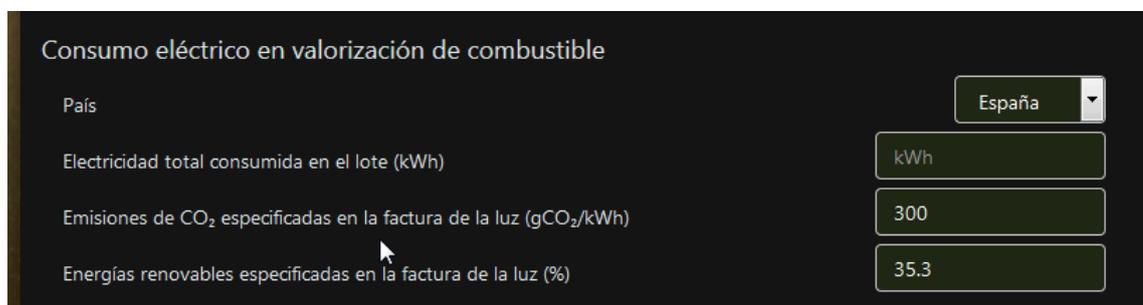
- Errors in some buttons like “edit” and “back” that were not working properly. Sometimes you couldn't edit the profile and if you tried to come back to the previous page it didn't work neither. They were corrected and now it's working ok.



Detalle Usuario			
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Dirección))))		

Buttons: Editar, Regresar

- There are different profiles: owners of the scheme, auditors, companies and general public. The permissions of each one were establish so there wouldn't be a confidentiality issue.
- In order to facilitate the entrance of data. After several pilot audit we proposed an easier way to enter all the information required to calculate the GHG. Now a new function to duplicate the lots and being able to change only the relevant information has been implemented.
- Error when creating certain kind of users with the owner profile. There was an error message although then the user was actually created.
- Some data entering was simplified because some general data were repeated and now only are requested once. For example the data consumption is the same for all the lot, it is therefore not necessary to enter it every time in every component of the lot.



Consumo eléctrico en valorización de combustible

País: España

Electricidad total consumida en el lote (kWh): kWh

Emissiones de CO₂ especificadas en la factura de la luz (gCO₂/kWh): 300

Energías renovables especificadas en la factura de la luz (%): 35.3

- There was an incongruence as the producer is request to enter the % in mass of every component of the lot and it could be more than 100%. Now a limitation has been implemented

Biomasa

Cálculo de la producción

Astillas y pellets

Tipo de Biomasa: Astillas de madera

% en Peso del Lote: 50

Biocombustible producido en el lote (t): 1000

Poder Calorífico Inferior en base seca (MJ/Kg): MJ/kg

Producción

Componente	% en Peso del Lote	Cálculo de GEI emitido		
Astillas de madera	50	78,61	Editar	Eliminar
Serrín	70	78,3	Editar	Eliminar

No debe dejar la aplicación que sea más del 100%
 Total CO₂ emitido en la producción [gCO₂-eq/Kg]: 78,43

+ (Add button)

- Some verifications were made to assure the fulfilment of the new data protection regulations (GDPR) that entered in force in May 2018
- Some calculations were corrected in the GHG calculation (in the diesel emission factor for the transport). There was a problem in the formula with the units so the results were wrong.
- When creating or erasing an user, under some conditions there was an error message
- Regarding calculation.
 - The part "From production to the end user" is an estimate (it is not real) but it helps the producer / distributor to know in an estimated way the energy consumed and the emissions in a part of the supply chain (from the producer to the consumer final) so when the final consumer enters the application in the part "Search for lots" should not take into account this data (The part "From production to the end user") if not in that case should be to take into account for both the "energy demanded" and the "CO2 emitted in transport [gCO₂-eq / Kg]"
 - a) Distance from the producer to the establishment of purchase and quantity transported

- b) Distance from the purchase establishment to the point of consumption and quantity acquired



Gases de efecto invernadero
 Por favor, introduzca los siguientes datos:

Nombre del establecimiento de compra

Código postal/País del establecimiento de compra

Cantidad de biocombustible adquirido, kilogramos (kg)

Marca de su estufa o caldera

Porcentaje de eficiencia energética de su estufa o caldera

Código postal/País del punto de consumo

Si desea recibir más información sobre el sello de calidad BIOMASUD, introduzca un e-mail de contacto aquí

Email

Through the following factors, the corresponding part is calculated, to points a and b previously described, both for "energy demanded" and for "CO2 emitted in transport":

Factors	Emissions (gCO ₂ -eq/t.km)	Energy (MJ/t.km)
Diesel truck 40 t MS (road transport)	81,95	0,872
Diesel truck 12 t MS (road transport)	176,18	1,875
River transport	37,76	0,402
Maritime transport	17,77	0,189
Train transport	24	0,122

In the results, both for the energy demanded and for the GHG emissions, the corresponding should be added, to points a and b previously described, for transport, calculated as explained above, and in the data of the batch it will have to be subtracted the part "From production to the end user" which is an estimate (it is not real).

Distancia aproximada entre punto de producción/distribución y punto de consumo [Km]: 223,23

CO₂ emitido en el transporte [gCO₂-eq/Kg] 0,03

Resultados		
% en Peso del Lote	100	%
Energía demandada	5,81	MJ/Kg
Energía demandada	34,18	%
Emissiones GHG	0,03	gCO ₂ -eq/Kg
Ahorro de emisiones GHG	91,63	%

Calcular Regresar

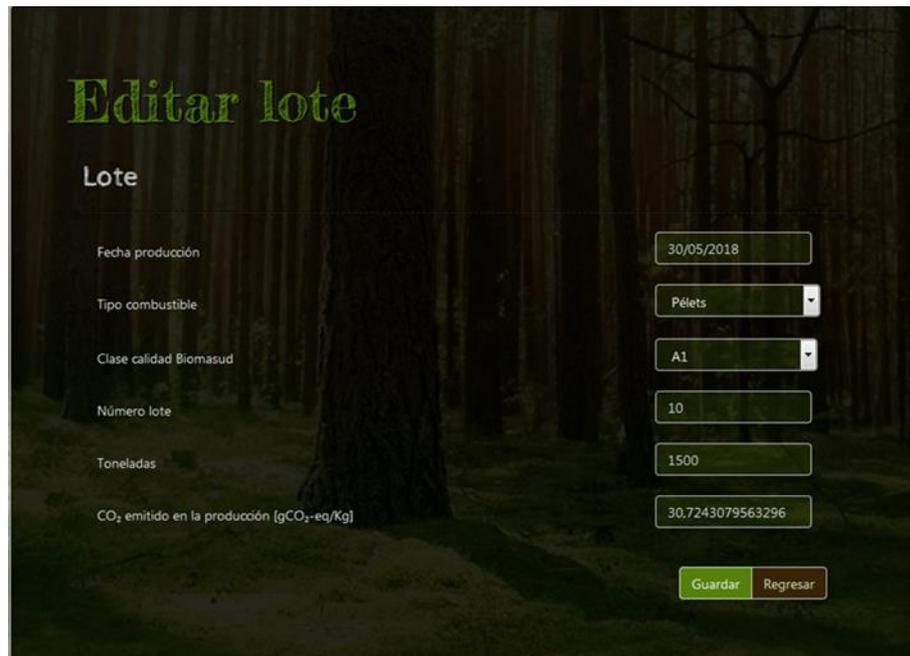
- Now the "edit" button works but it does not let you edit any of the batch components.

Lotes

+ Nuevo lote

Código	Nombre/Razón social	Fecha producción	Número lote	Toneladas	Acciones
ES10000	CEDER	04/05/2018	1	4	Detalles Editar Borrar
ES10000	CEDER	04/05/2018	2	5	Detalles Editar Borrar

Only allows to change data of the batch in general (screenshot below)



The screenshot shows a web form titled "Editar lote" (Edit lot) set against a dark forest background. The form contains several input fields and dropdown menus for editing lot details. At the bottom right, there are two buttons: "Guardar" (Save) and "Regresar" (Return).

Field	Value
Fecha producción	30/05/2018
Tipo combustible	Pélets
Clase calidad Biomassud	A1
Número lote	10
Toneladas	1500
CO ₂ emitido en la producción [gCO ₂ -eq/Kg]	30.7243079563296

- Checked that the distance between the purchase establishment and the point of consumption was NOT well calculated. The procedure has been reviewed.