



- Alexander Döring, Secretary General, Fédération Européenne des Fabricants d'Aliments Composés

Development of an EU biomass factsheet, state of play



Partners



Content

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Definitions

- **Biomass** = is derived from organic material such as trees, plants, and agricultural and urban waste. It can be used for heating, electricity generation, and transport fuels. Increasing the use of biomass in the EU can help diversify Europe's energy supply, create growth and jobs, and lower greenhouse gas emissions. It is also needed in the electricity production to balance variable renewables;
- **Biofuel** = energy made from living matter, usually plants. Types of biofuels: bioethanol, biodiesel, and biogas;
- **Biogas** = created as a by-product of decomposing plant and animal waste in environments with low levels of oxygen;
- **Bioethanol** = alcohol produced from corn, sorghum, potatoes, wheat, sugar cane, even cornstalks and vegetable waste. It is commonly blended with gasoline;
- **Biodiesel** = oil from plants or animals used as an alternative to or blended with petroleum diesel in automobiles and industrial fleets with diesel engines;

Context

- The Russian invasion of Ukraine jeopardizes both EU energy & food/feed security security.
- EU developments:
 - *Versailles Declaration, 11/03/2022 - Council*
 - *Communication on food security (COM(2022)133), 23/03/2022 – EC*
 - *Commission´s communication on the “Solidarity Lanes”, 12/05/2022*
 - *RePowerEU Plan (COM(2022)230), 18/05/2022 – EC*
 - *EU Council Declaration 31 May 2022*
 - *European Commission´s a new plan “Save Gas for a Safe Winter”, 20 July 2022*
 - *Commission proposes a temporary short-term derogation from certain agricultural policy rules to increase the production of cereals, 22 July 2022*
- The European renewable energy targets set to reach the EU climate objectives covering bioenergy production. EU developments:
 - *Recast of REDII – EC*
 - *Revision of REDIII – EP & Council*
- **As a result: need to provide accurate estimate of biomass availability and to monitor production and use for food, feed, bioenergy and other industrial uses at the EU agregate level**

Letter from DG AGRI (November, 2022)

I value your suggestion to analyse thoroughly the EU energy autonomy objectives and their impacts on the resilience of our EU agri-food systems. In particular, your idea of developing a fully comprehensive EU biomass balance sheet covering all biomass sources for EU renewable energy and feed and food production is very interesting. This tool could indeed play an important part in a fact-based discussion on the use of biomass for energy purposes.

Yours sincerely,



Janusz WOJCIECHOWSKI

Brussels, 4.1.2023
SWD(2023) 4 final

COMMISSION STAFF WORKING DOCUMENT

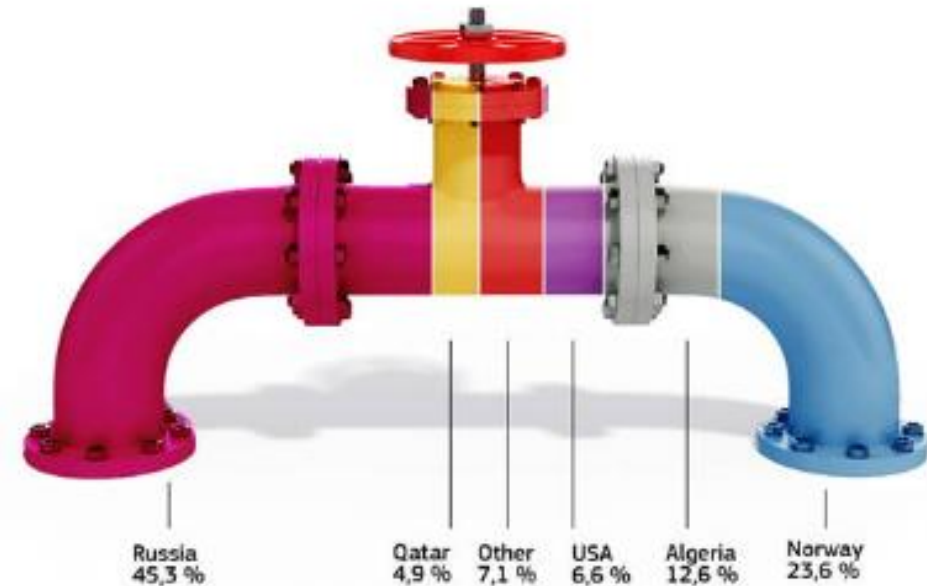
Drivers of food security

- Set up roundtable of the key European Biomass producers & users to share our knowledge as part of fact finding mission, in order to develop comprehensive tool to allow for a robust assessment of availability of biomass meeting the new EU political « autonomy » ambitions & targets for the energy and agri-food sectors.

REPowerEU

- EU commission strategy from March to decrease dependency on Russian gas imports.
- One of the main actions: to increase EU biomethane production to 35 billion m³ before 2030.
- Increase of 100 % from 2021 production.
- If increase is only to come from crops, we expect an additionally 5-7 Mio. ha. of arable land will be needed.
- EU production today is around:
 - 3,5 billion m³ Biomethane.
 - 17 billion m³ Biogas.
- How much biomass is required to reach the EU target?

Share in EU natural gas imports, 2021



Source: European Commission



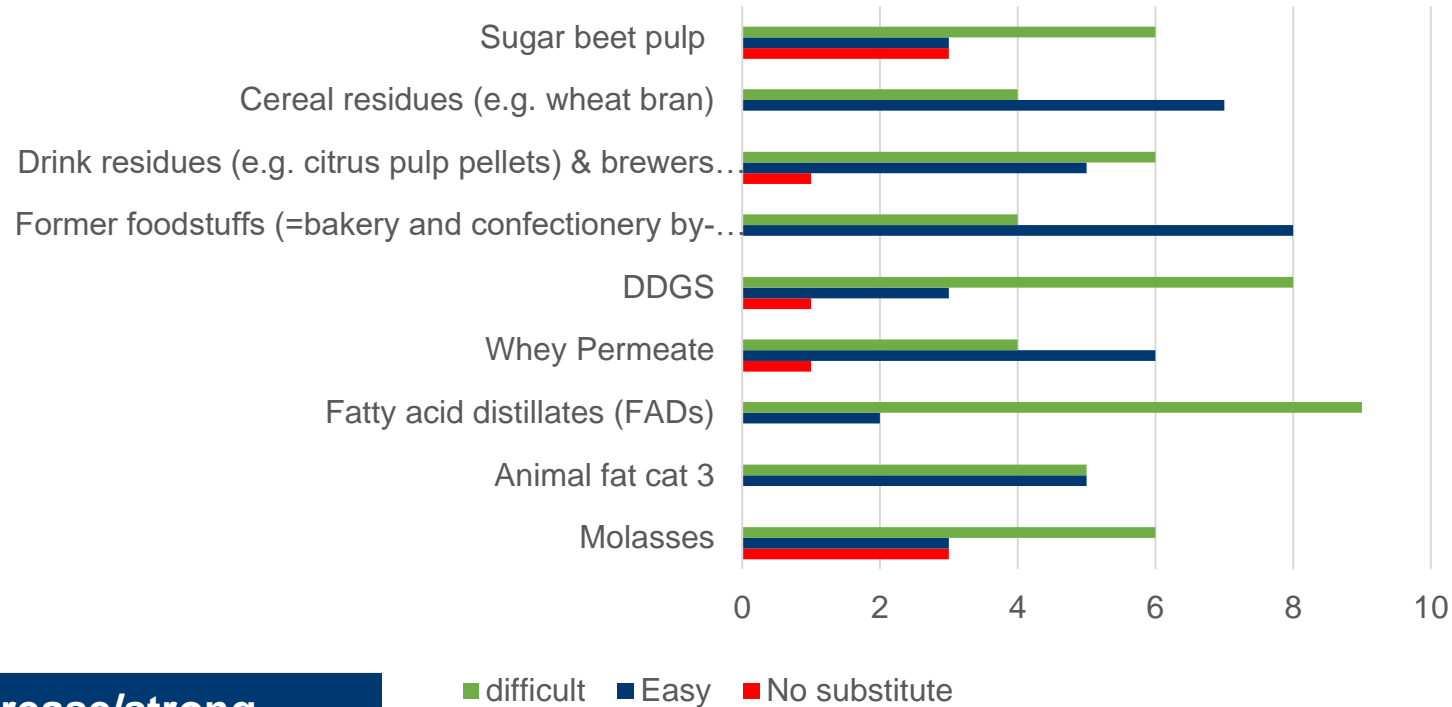
New record for biomethane production in Europe shows EBA/GIE Biomethane Map 2022-2023

Nearly 30% more biomethane plants compared to the 2021's edition



Do other stakeholders discuss energy targets for biomethane/biogas sector?	11 yes : 1 no
Do authorities plan any legislative change in regards to food/fuel/food discussion? (e.g. increasing renewable energy targets, phasing out or capping the first-generation biofuels, adjusting blending levels etc.)	10 (91%)
Are your members involved in biogas/bioethanol/biofuels production?	10 (82%)
Do you expect the % of feed materials being used in bioenergy sector to rise by 2030?	10 (100%)
If yes by how much do you expect the % would rise by 2030?	up to 10 %: 5 10-30 %: 3 more than 30 %: 2

How difficult is it to find substitutes?



Feed ingredient	Increase/strong increase
Crops: Maize	↑↑
Hi fibre co-products: Beet pulp, Other food co-products (DDGS, wheat bran etc.)	↑↑
Liquid materials: Molasses, Oils (palm, soy oils) & animal fats	↑↑

Internal survey

Circular feed



Food/feed grade status



Land use ratio



The proximity of origin to feed mill



Nutrient digestibility

Food Waste Platform

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• DG SANTE (2020)

A sustainable livestock sector will certainly play a key role in a sustainable European food system and will be able to meet the evolving demands of European consumers. The livestock sector indeed not only produces essential products, it provides livelihoods for many and a substantial part of the production is based on sustainable feed sources, which are not competing with food use.

Yours sincerely,

Stella Kyriakides

Points to address at the EU level

Biomass balance/fact sheet challenges

- What do we miss?
 - integrated balance sheet or monitoring system at EU level to provide a clear assessment on Biomass production/availability and use (food/feed, Bioenergy, other non-food uses)

2021/22										
Protein source	Total EU (million t)			EU (million t)			Protein (million t)			% of total feed
	EU	EU	EU	EU	EU	EU	EU	EU		
CROPS	168.2	151.4	17.00	15.48	91%	23%				
CEREALS (of which)	288.7	21.3	44.5	252.5	183.3	146.8	15.70	14.29	91%	21%
Cereals	100.8	7.7	36.0	96.8	41.3	36.6	11.0%	4.44	4.20	
Barley	10.8	1.2	0.1	28.4	0.8	34.9	10.0%	3.48	1.48	
Buckwheat	0.7	0.0	0.0	0.1	0.0	0.0	0.0%	0.00	0.00	
Maize	70.6	15.0	3.4	80.0	84.0	80.6	8.8%	0.12	4.04	
Rye	0.9	0.0	0.0	1.6	2.0	1.9	11.0%	0.06	0.26	
Sorghum	1.0	0.1	0.0	1.0	0.0	0.0	11.0%	0.10	0.09	
Oats	2.7	0.0	0.0	2.6	0.7	0.7	11.0%	0.03	0.02	
Tritic	10.8	0.0	0.0	10.8	0.0	0.0	11.0%	1.08	1.08	
Others	3.2	0.0	0.0	3.1	0.0	0.0	11.0%	0.40	0.00	
OILSEEDS (of which)	39.1	21.6	0.9	29.9	1.6	1.6	0.46	0.46	100%	1%
Columbin (EU and PF)	2.9	14.6	0.2	17.2	1.2	1.2	100%	0.40	0.40	
Rapeseed	16.7	6.2	0.1	20.8	0.2	0.2	100%	0.03	0.03	
Sunflower	19.5	0.8	0.6	18.8	0.2	0.2	100%	0.03	0.03	
PULSES (of which)	4.6	1.0	0.5	0.1	3.4	3.0	0.85	0.73	87%	1%
Field peas	2.3	0.5	0.2	2.6	1.7	1.5	200%	0.38	0.34	
Broad beans	1.3	0.1	0.0	1.0	0.0	0.0	200%	0.32	0.32	
Lupins	0.9	0.2	0.0	0.5	0.4	0.2	100%	0.14	0.07	
Other pulses	0.1	0.2	0.0	0.1	0.4	0.0	200%	0.00	0.00	
CO-PRODUCTS	78.6	41.5	23.88	9.00	36%	32%				
OILSEED MEALS (of which)	29.7	21.4	2.0	49.1	49.9	14.1	19.48	4.92	25%	25%
SOYA BEAN MEALS (of which)	11.3	16.3	0.7	24.9	0.0	0.1	12.11	0.26	4%	16%
Soybean meal (based on 48% protein)	9.9	0.7	0.1	8.9	0.0	0.0	100%	0.00	0.00	
Soybean meal (based on 44% protein)	0.3	16.3	0.0	16.3	0.0	0.0	100%	7.42	0.00	
Soybean protein concentrate	0.0	0.0	0.0	0.0	0.0	0.0	100%	0.19	0.00	
RAPESEED MEALS (of which)	12.8	0.4	0.6	12.4	0.0	0.0	4.09	2.82	69%	5%
Rapeseed meal (EU rapeseed production)	0.1	0.0	0.0	0.0	0.0	0.0	200%	2.82	2.82	
Rapeseed meal (imported rapeseed crushing)	3.4	0.4	0.0	3.4	0.0	0.0	100%	1.13	0.00	
Rapeseed meal (based on 48% protein)	0.0	0.0	0.0	0.0	0.0	0.0	100%	0.00	0.00	
SUNFLOWER MEALS (of which)	5.2	3.0	0.5	7.7	7.7	4.3	2.77	1.95	95%	4%
Sunflower meal (from EU rapeseed production)	4.9	0.0	0.0	4.9	4.3	4.3	100%	1.06	1.06	
Sunflower meal (imported rapeseed crushing)	0.4	3.0	0.5	3.0	0.0	0.0	100%	1.14	0.00	
Sunflower meal (based on 48% protein)	0.0	0.0	0.0	0.0	0.0	0.0	100%	1.08	0.00	
OTHER OILSEED MEALS (of which)	0.6	1.7	0.2	2.1	2.1	0.1	0.46	0.06	12%	1%
Peanut meal	0.0	1.6	0.1	1.6	1.6	0.1	100%	0.04	0.01	
Lentil meal	0.4	0.0	0.0	0.4	0.4	0.0	100%	0.10	0.00	
Other oilseed meals	0.2	0.0	0.1	0.2	0.2	0.2	100%	0.07	0.07	
OTHERS CO-PRODUCTS	30.3	4.1	1.8	31.8	0.0	2.74	4.70	0.10	93%	6%
Dairy industry's liquid protein products (15-20%)	4.1	0.0	0.0	4.1	4.1	4.1	100%	0.17	0.17	
Dairy industry's super protein products (80-85%)	1.0	0.0	0.0	1.0	0.7	0.7	100%	0.49	0.49	
Cattle and sheep grain with vitamins	0.1	0.0	0.0	0.1	0.0	0.0	100%	1.02	0.01	
Wet distiller's grain	0.0	0.0	0.0	0.0	0.0	0.0	200%	0.44	0.33	
Wheat bran	7.4	0.0	0.0	7.2	7.2	7.2	100%	1.11	1.11	
Other grain	0.0	0.0	0.0	0.0	0.0	0.0	100%	0.00	0.00	
Beet pulp pellets	0.7	1.2	0.2	0.7	0.7	0.5	100%	0.03	0.44	
Miscellaneous	0.1	1.2	0.2	0.1	0.0	0.0	100%	0.14	0.14	
NON-PLANT SOURCES	7.7	7.5	1.85	1.74	94%	2%				
Feedstocks (on farm use)	0.4	0.2	0.2	0.5	0.4	0.4	100%	0.01	0.01	
Crop residues	0.2	0.1	0.1	0.0	0.0	0.0	100%	0.07	0.07	
Distiller's wet residue	1.6	0.0	1.0	0.6	0.1	0.1	100%	0.05	0.05	
Processing by-products	2.7	0.1	0.9	1.9	1.0	1.0	100%	0.06	0.06	
Formic acid	0.0	0.0	0.0	0.0	0.0	0.0	100%	0.48	0.48	
ROUGHAGE	1091	1091	32	32	100%	43%				
Oats	786	786	786	786	24%	20	20	20	20	
Maize	21	21	21	21	73%	5	5	5	5	
Other roughage	3	0.0	2.0	1.0	1.0	1.0	100%	0.0	0.0	
TOTAL	75	68	78%							

Terminology challenges

- Policy makers, bioenergy industry and feed industry & waste sector use different terminologies & legal definitions (sometimes for the same feedstocks)
- EU Perspective – current legislative definitions:
 - EU Waste catalogue
 - EU Waste Framework & Waste Directives
 - EU Feed material catalogue
 - CN Codes for crop residues
 - RED Annex IX
 - EU food waste accountability framework



Denmark: the current biomass balance

Food Waste Platform

Product	Dry matter in millions of tons
Grain	7.92
Oilseed rape	0.55
Legumes	0.10
Potatoes	0.63
Beets	0.60
Maize	2.43
Grass in rotation	2.50
Permanent grass	0.47
Woody biomass	1.4
Timber	0.8
Straw (energy, feed and bedding)	2.7
Straw (incorporation)	2.3
Total	22.39

Source: AU, 2022

Bioresource	Extra dry matter in millions of tons
Straw ¹	1.5
Catch crop	1
Bioresources from forestry ²	0
Industrial waste products	1.3
Manure, wastewater and biowaste	2.5
Perennial crops, legumes, turnips etc.	2-3
Total	8.3 - 9.3

Food Waste Platform

Listing key Biomass categories for potential balance sheet

- Agriculture
- Forestry
- Fisheries & Aquaculture
- Primary processing
- Residual flows
- Other

Biomass	Food	Feed	Fuel/Energy	Other (fertilisers,	Other residues (the	Descriptions	Other Comments
Residual flows							
Food waste							
Households (Municipal solid waste)							
Wholesale & Retail						only for feed (catering reflux	
Food service							
Industrial waste							
Industrial waste products							
Industrial wastewater							
sewage sludge							
digestate from industrial wastewaters or sewage sludge							

3								
4	used	Potential	future use					
5								
	Biomass	Food	Feed	Fuel/Energy	Other (fertilisers,	Other residues (the	Descriptions	Other Comments
6								
99	Food manufacturing & Retail							
100	Products from the confectionery industry							
101	Products and by-products from the savoury snacks industry							
102	Products of the breakfast cereal manufacture							
103	Products from the bakery and pasta industry							
104	Products from the pastry industry							

TF3 at a glance

Assessing sustainable potential for innovative biomass sources to produce biomethane

SCOPE OF THE WORK

Task Force 3 aims to identify the potentials across the EU for innovative biomass sources and the conditions under which these potentials could be unlocked.

Deliverables			
3.1	3.2	3.3	3.4
Biomethane potential from the deployment of novel cropping systems across Europe (rotational/sequential cropping and sustainable farming practices)	EU-wide potential assessment for feedstock production on marginal and contaminated land;	The Environmental Co-Benefits of Integrated Food and Fuel Cropping Systems	Identification of additional innovative sustainable biomethane feedstocks. These include wastes and residues.

Objective is to share the first drafts with relevant experts between September and October and then publish them by the end of the year

The first drafts are expected for end of this year, while publications will follow in 2024.



The last liason group meeting on 5th meeting on 25 September 2023

- Meeting participants stressed the importance of creating a comprehensive biomass balance sheet.
- The tool is intended to provide an overview of major biomass production trends and usage in key sectors, prioritizing a broad perspective over high accuracy. It would aim to help stakeholders navigate the complexities of biomass and biogas production.
- Participants were encouraged to provide feedback on unified measurement units, data sources, and suggestions to improve understanding of biomass availability.
- Collaboration among stakeholders, including the Biomethane Industrial Partnership and relevant regulatory bodies (DG AGRI, DG SANTE, DG ENERGY), is crucial for success.
- The comprehensive balance sheet will be distributed to participants for additional input, aiming to finalize it before the end of the current year.
- The next meeting to endorse the final version is scheduled for late November/early December (TBC).

Challenges

- Sources of data on biomass produced, sourced and used are numerous
- Scope and structure
 - how to assess the overall available biomass if we don't use the same terminology ?
- How to avoid double counting?
- Uniform unit?

Questions

- Do we all share the need for such a monitoring system for biomass?
 - If yes, how can work together? Would you agree to share respective sectoral outlooks/estimates for biomass production and use?
- Do you agree with identified main categories?
- Do we monitor the end use?
- Who is taking the leadership?

Thank you for your attention



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