



BIO CIRCULAR CITIES

Exploring the circular
bioeconomy potential
in cities

Местно заключително събитие - Област
Пазарджик. Представяне на уеб
приложението на ВСС

08 Юни 2023 – Пазарджик

Цел и обхват на насоките на ВСС

- Подпомагане на определянето на по-добра стратегия за управление на биологичните отпадъци в съответствие с принципите на биоикономиката, кръговия цикъл и устойчивостта чрез идентифициране на най-подходящите варианти за третиране на биологичните отпадъци.

Биологични отпадъци



Как да избегнем депонирането на отпадъци и да създадем стойност



Съществуват много възможности

- Рециклиране в химикали и продукти на биологична основа с висока стойност
 - Рециклиране на хранителни вещества в компост, биогаз и биометан
 - Изгаряне с оползотворяване на енергия
- Коя от тях е най-подходяща в конкретен случай?

Методологичен подход

- Анализ на обхвата на глобалните концепции за кръгова икономика и биоикономика, на свързаните с тях европейски цели и стимули, както и на взаимовръзките, които могат да бъдат установени между тях.
 - Преглед на съществуващите подкрепящи стратегии, насоки и инструменти с цел позициониране на насоките за ККП и ясно определяне на техните цели..
 - Актуално състояние на основните движещи сили и пречки пред развитието на устойчиви кръгови вериги за създаване на стойност в областта на биоикономиката за управление на отпадъци от биомаса
- **ВСС рамка за насоки**

Определяне на насоки за идентифициране на най-подходящите варианти за третиране на биоотпадъци



Достъп: <https://bcc.list.lu/>

➤ ВСС формат:

Уеб приложение, подпомагащо идентифицирането на най-подходящите варианти по отношение на технологиите за управление и валоризация на биоотпадъците.

➤ Целеви потребители :

Мениджъри на (био)отпадъци, специалисти, които са или се отчитат пред публични/частни лица, вземащи решения.

➤ Очаквани резултати :

Определяне на набор от най-подходящи технологии, които да бъдат допълнително проучени.

Home

Available feedstock charact...

Type of end product targeted

Environmental performances

Other political and economic...

Results

The context:

The BioCircularCities tool is developed in the framework of the H2020 Bio-based Industries Joint Undertaking project BioCircularCities (Grant agreement n° 101023516).

The project ultimate goal is to unlock the circular economy potential of unexploited bio-based waste streams by exploring the development of economically and environmentally efficient models for organic waste (food and kitchen waste, garden waste, agricultural waste from agrobased industrial sector, wood waste and forestry residues, etc.) in three pilot areas: Metropolitan Area of Barcelona (Spain), Metropolitan City of Naples (Italy), Province of Pazardzhik (Bulgaria).

The tool purpose:


BioCircularCities tool supports the identification of the most suitable technological options (bio-circular technologies) for improving the biowaste management.


The BioCircularCities tool relies on the consideration of a list of influential criteria which was established from what have emerged from the analysis of a literature-based state of the art of the main drivers and barriers towards the development of biocircular value chains for biomass waste management, and on the the experiences of the pilot areas. This is fully detailed in Deliverable D4.1 of the project. These criteria can be intrinsic to the feedstock properties (e.g. composition and quality in terms of content of high-value substances or molecules, presence of contaminants...). The efficiency of technological options for recycling or recovery is also of influence, as well as the potential associated technical constrains. Finally, the most convenient pathway towards waste biomass valorisation strongly depends on drivers and barriers related to the local surrounding political and socio-economic context, and on the potential sustainability strategic targets for the local authorities and private stakeholders endorsing the responsibility of waste biomass management.


How it works:

The tool screens the socio-economic, political and environmental context of the territory in which the value chain shall be implemented according to the list of influential criteria, and evaluate which technological pathway(s) for the biowaste valorization would be potentially compatible with the described surrounding context, based on their own specificities in regard to each criteria. The background mechanisms of the tool and the full characterisation of technologies will be available in Deliverable D4.2 of the project.

This project has received funding from the Bio-based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101023516. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio-based Industries Consortium.

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 Horizon 2020 European Union Funding for Research & Innovation

 BBI JU

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Стимули и пречки пред развитието на устойчива и кръгова биоикономика



Необходимо е да се определят стимулите и бариерите, за да се разбере кои са критериите за влияние, които трябва да се вземат предвид при избора на технологичен път, като се има предвид конкретният градски или териториален план.

- " Стимулите" се определят като силни страни или възможности
 - Вече изпълнени полезни действия или практики
 - Потенциална добавена стойност, която би донесла по-нататъшното развитие на устойчиви и кръгови вериги за създаване на стойност.
- " Пречките" пред развитието на кръговите вериги за създаване на стойност се определят като слаби страни или заплахи.
 - Забавяне на разработването и прилагането на кръгови решения.
 - Потенциално създават проблеми или възпрепятстват развитието на кръговите вериги за създаване на стойност.

Критерии за въздействие

Избор на подходяща биокръгова технология за валоризация на биоотпадъците, в зависимост от

- Специфичен контекст на градовете и градските райони,
- И за специфични характеристики от технологиите.

1. Характеристика на суровините и текущата система

2. Тип на целевия краен продукт

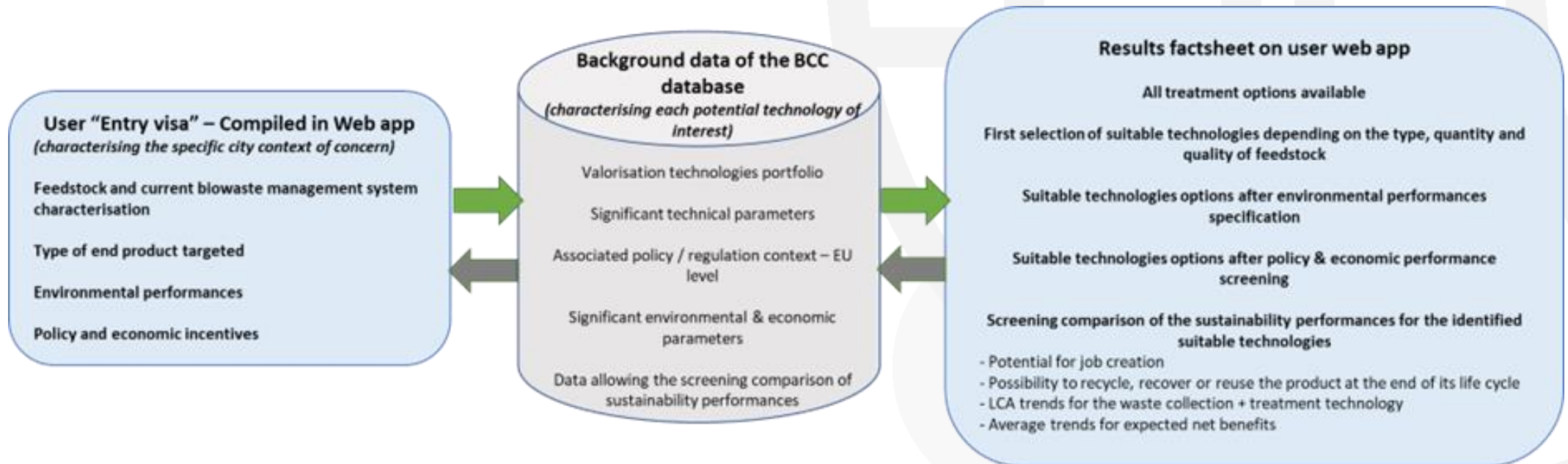
3. Екологични показатели

4. Политически и икономически стимули

Определяне на насоки за идентифициране на най-подходящите варианти за третиране на биоотпадъци



- Формат на насоките на ВСС: Уеб приложение, подпомагащо определянето на най-подходящите варианти по отношение на технологиите за управление и валоризация на биологични отпадъци.



Насоки на ВСС: Технологии, разглеждани в ОКОНЧАТЕЛНИЯ ВАРИАНТ на приложението

	Biorefinery			Other
	Biochemical processes	Thermochemical processes	Chemical processes	
<i>Bulk/Specialty chemicals obtained from food related waste or from wood bark, cellulose, lignin or woody sidestreams</i>	Enzymatic process	Gasification	Heterogeneous catalysis	Pulping
	Industrial fermentation	Hydrothermal process*		
	Solid state fermentation	Pyrolysis**		
<i>Bio-based functional ingredients / Food ingredients obtained from food related waste</i>	Enzymatic process			
	Industrial fermentation			
	Solid state fermentation			
<i>Biogas obtained from food related waste or from wood bark, cellulose, lignin or woody sidestreams</i>			Anaerobic digestion	
			MBT+AD	
<i>Biomethane obtained from food related waste or from wood bark, cellulose, lignin or woody sidestreams</i>			Anaerobic digestion + Biomethanation	
<i>Compost obtained from food related waste or from wood bark, cellulose, lignin or woody sidestreams</i>			MBT + Composting	
<i>Other</i>				Landfill
				Incineration of MSW including unseparated organic waste - with energy recovery

*only applicable to food related waste
**only applicable to wood based waste and residue

Уеб приложение BIOCIRCULARCITIES на практика



Случаят с област Пазарджик

Потребител: Местните власти (регионален съвет) търсят начини за подобряване на управлението на потоците от дървесни остатъци от горското стопанство и дейностите по преработка на дървесина..

Обем на отпадъците, налични в редовно количество през годината: 15 000 тона годишно директно от горското стопанство.

Понастоящем тези отпадъци се оставят в гората, не се събират и не се оползотворяват.

Ако бъдат събрани, няма да се изисква специално сортиране, тъй като те ще бъдат събрани специално.

Следователно няма да останат никакви примеси..

Случаят с област Пазарджик



- Тази информация може да бъде в "Стъпка 1" на Уебприложението за насоки на ВСС

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LOAD ANSWERS EXPORT ANSWER

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Step 1: Characterisation of a... (selected)

Step 2: Type of end product...

Step 3: Environmental perfor...

Step 4: Other political and e...

Results

Step 1: Characterisation of available feedstock and current existing biowaste management system

This series of questions aims at characterizing the available biowaste or feedstock, and to characterise the current existing biowaste management system. The questions aim at specifying the type of biowaste of concern, and at characterising the level of purity of the biomass feedstock, which is influenced by the type of collection and the occurrence of a sorting process. It is also possible to specify if the waste is available in regular quantity along the year or if it is e.g. seasonal – since it can influence the efficiency of a technology, and how it is valorised or treated in the current situation.

Which type of biowaste will serve as feedstock to the biocircular technology that could be implemented?

After the biowaste is collected, is there a specific sorting in order to isolate the organic fraction? If yes tick the box, otherwise tick 2 times the box, to leave it empty.

Is there a specific sorting in order to isolate the organic fraction after it is collected?

After the biowaste has been collected and sorted, are there remaining impurities? If yes tick the box, otherwise tick 2 times the box, to leave it empty.

If you know the information, specify or estimate the waste composition after being collected and sorted. If you don't know, leave it as is.

Organic fraction (%)

Plastic impurities (%)

Metal impurities (%)

Paper impurities (%)

Other impurities (%)

Confirm the biowaste flow is available continuously and in regular quantity along the year by ticking the box, otherwise tick 2 times the box, to leave it empty.

Which amount of the selected biowaste, in tons, is generated in total, annually?

If the feedstock biowaste was not used as raw material for the technology, it could be landfilled. Are you ready to accept equivalent, lower or higher costs for a better valorisation of biowaste than the landfill tax?

Does the feedstock availability and/or its supply chain is exclusively local (from the urban area or region of concern) or is it larger (multi-regional, country, international)?

Please describe how the biowaste under consideration is currently managed, by associating percentage to each valorisation or treatment options.

High value products from biorefinery (materials / chemicals recycling)

Medium value products from recycling (Energy recovery through biofuels production - Materials recovery through bioplastics, cellulose, commodity chemicals production)

Low value products from Materials recovery (Compost, digestate)

Low value products from Energy recovery from waste incineration

Landfill or incineration without energy recovery

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Подобряването на управлението и оползотворяването на отпадъците е основен приоритет за провинцията, както за създаване на икономическа стойност, така и за подобряване на екологичната устойчивост на нейните практики.

Случаят с област Пазарджик

➤ Тази информация може да бъде зададена в "Стъпка 2" и "Стъпка 3" на уеб приложението за насоки на ВСС

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Step 1: Characterisation of a...

Step 2: Type of end product targeted

Step 3: Environmental perfor...

Step 4: Other political and e...

Results

Step 2: Type of end product targeted

This series of questions aims at specifying your expectations regarding the type of end product(s) that would result from the biocircular technology that would be implemented. You can specify the type of value you would like to target, the market readiness level, the level of social acceptance regarding the product and the technology, and the level of competitiveness of the end product with conventional counterpart.

The end product can be of different types and values:

- Bio-based fine and specialty chemicals, to be used for high technology applications – classified as high (economic) value products, and generally produced in limited quantities.
- Biofuels and bio-based materials – biogas and biomethane, bioplastics, cellulose, and commodity chemicals – classified as medium (economic) value, and generally produced in medium or moderate quantities.
- Compost and solid digestate – classified as low (economic) value, which can be produced in high quantities, locally, and have a high functional value (e.g. improving soil structure, microbial diversity, water retention capacity, storing carbon dioxide).

Considering the product values definitions developed in the introduction of this page, which value would be your priority target for the end product resulting from the biocircular technology potentially implemented for your concerns?

Please specify if biocircular processes available only at the pilot scale could be of interest for you. Tick the box if yes, otherwise tick 2 times the box, to leave it empty.

Select in the drop-down menu one or several level(s) of quality and safety standards available for the products.

Select in the drop-down menu one or several category of products in regard to the social acceptance.

Would you like to focus exclusively on end products which are competitive economically with their conventional counterpart? If yes tick the box, otherwise tick 2 times the box, to leave it empty.

Случаят с област Пазарджик

- Тази информация може да бъде зададена в "Стъпка 2" и "Стъпка 3" на веб приложението за насоки на ВСС

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Step 1: Characterisation of a...

Step 2: Type of end product ...

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Step 3: Environmental performances

This series of questions is dedicated to identify the potential objectives targeted in terms of environmental performances.

Which conventional counterpart the obtained end product should substitute in priority?

Which magnitude of Greenhouse Gases reduction would you target, compared to the production of a conventional product counterpart?

Which range of resource efficiency is acceptable for the process to be implemented (Cumulative Energy Demand consumed vs Cumulative Energy Demand created)

Which environmental impacts that could be induced by the technology or the outcome product use or consumption, would be a barrier to its development in your urban area / region / country

Случаят с област Пазарджик

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Местните власти

- Разполага с ограничени финансови ресурси, но е готов да инвестира в наемането на специфични компетенции и търси сътрудничество с технологични партньори (не иска сам да обработва отпадъците).
- Бихте искали да се съсредоточите върху ефективно решение (от икономическа и екологична гледна точка) в краткосрочен и средносрочен план.

Случаят с област Пазарджик

➤ Тази информация може да бъде посочена в "Стъпка 4" на веб приложението на насоките на ВСС.

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Step 1: Characterisation of a...
Step 2: Type of end product ...
Step 3: Environmental perfor...
Step 4: Other political and e...
Results

Step 4: Other political and economic incentives

This last series of questions is dedicated to refine your statement on some criteria related to policy incentives and economic issues.

Will your region / institution / company be able to significantly invest on its own fund for the development of competences in relation to the implementation of a new value chain, or for modifying an existing one?

Is there any opportunity to collaborate locally with :

Will your region / institution / company be able to significantly invest on its own fund for the development of infrastructures, equipments or any other material needs, required in support to the implementation of a new value chain, or for modifying an existing one?

Can your company or institution support all the costs by itself or the project cannot happen without subsidies or any supportive public funding instrument?

Which range of net benefits are you targeting? (Value added vs. processing and overhead costs, considering available subsidies)

Случаят с област Пазарджик




- В резултат на това технологичните опции, налични в инструмента, се класират в зависимост от степента им на съвместимост с информацията, предоставена от потребителя.

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Name	Score		
Mechanical Biological Treatment (MBT) with Composting	17	MORE INFO	⋮
Anaerobic digestion	15	MORE INFO	⋮
Chemical treatment	13	MORE INFO	⋮
Landfilling	12	MORE INFO	⋮
Incineration of MSW including unseparated biowaste - with energy recovery	Disqualified	MORE INFO	⋮
Mechanical Biological Treatment with Anaerobic digestion	Disqualified	MORE INFO	⋮

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  Horizon 2020
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In case you have questions or remarks to provide on the content of the tool, feel free to contact the project team at bcc-contact@list.lu.

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Благодаря за вниманието!

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