CE0200857

GreenChemForCE

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A - Project identification

A.1 Project identification

Project ID (automatically created)	CE0200857
Name of the lead partner organisation	Univerzita Karlova
Name of the lead partner organisation (in English language)	Charles University
Project title	Bringing Green Chemical Production Forward in Central Europe
Project acronym	GreenChemForCE
Programme priority	Cooperating for a greener central Europe
Programme priority specific objective	SO2.3: Taking circular economy forward in central Europe
Project duration (nr. of months)	30

A.2 Project summary

Please give a short overview of the project and describe:

- the common challenge of the programme area your project is tackling;
- the overall project objective and the expected change your project will make to the current situation;
- what is innovative about your project;
- the main outputs and results your project will develop and who will benefit from them;
- the implementation approach you plan to take and why transnational cooperation is needed.

The aim of the GreenChemForCE project is to help reduce the negative environmental impact of the chemical industry in Central Europe. Chemical production in the region is currently far from sustainable and its significant portion had been relocated to Asia. In addition, the public image of this sector is extremely poor. This project's objective is to tackle the chemistry issues of local producers, including the generation of excessive waste and greenhouse gas emissions, their dependence on petroleum-derived materials, and the use of toxic chemicals and inefficient energy-intensive processes.
To address the above-mentioned territorial challenges, a transnational consortium of experts from the academia and industry from four countries, the Czech Republic, Slovenia, Hungary and Austria, will identify the specific problems of chemical producers in the selected regions and search for approaches to solve them. We will find ways to minimize the waste production and to valorize the remaining one, to recycle critical raw materials, to eliminate the use of hazardous solvents, and also to implement advanced technologies into the processes to make them more efficient and sustainable in the long term.
Transnational cooperation is crucial to the success of our efforts, as it allows for maximum integration of knowledge, expertise and experience from all the partners and countries involved. In addition, our partner industry support organizations will disseminate the results to a wider group of chemical companies and experts in the field, in order to trigger a change in the whole sector and enhance environmentally conscious chemical production throughout the Central European region. Thus, the project will contribute to the revitalization of the local chemical industry, transforming the current linear economic streams into the closed-loop circular systems, and establishing conditions for the return of chemical production back to Europe thanks to the developed green and cost-effective processes.
Moreover, by raising public awareness of the green chemistry principles and training a new generation of experts, the project aims to improve the perception of the regional chemical industry by the general public and the adoption of sustainable practices by the future employees of regional companies. This may eventually lead to the desired behavioral change in both industry and end consumers. The project will also facilitate stronger connections between the partners, leading to long-term collaboration between universities, chemical companies and other organizations.

A.3 Project partner overview

Partner Number	Status	Name of the organisation in English	Partner role in the project	Country (NUTS 0)	Partner total eligible budget
1	Active	Charles University	LP	Česko (CZ)	352700.00
2	Active	Association of Chemical Industry of the Czech Republic	PP	Česko (CZ)	61854.00
3	Active	Zentiva k.s.	PP	Česko (CZ)	201847.00
4	Active	The Servier Research Institute of Medicinal Chemistry	PP	Magyarország (HU)	151850.00
5	Active	Eötvös Loránd University	PP	Magyarország (HU)	201847.00
6	Active	TU Wien	PP	Österreich (AT)	211850.00
7	Active	University of Ljubljana	PP	Slovenija (SI)	301850.40
8	Active	Chamber of Commerce and Industry of Štajerska	PP	Slovenija (SI)	136852.00
9	Active	VTL GmbH	PP	Österreich (AT)	151853.00

A.4 Project budget overview

Programme funding			Contribution					Total eligible budget
Funding source	Funding amount	Co-financing rate (%)	Automatic public contribution	Public contribution	Total public contribution	Private contribution	Total partner contribution	
ERDF	1.418.002,72	80,00 %	0,00	219.834,88	219.834,88	134.665,80	354.500,68	1.772.503,40
Total EU funds	1.418.002,72	80,00 %	0,00	219.834,88	219.834,88	134.665,80	354.500,68	1.772.503,40
Total eligible budget	1.418.002,72	80,00 %	0,00	219.834,88	219.834,88	134.665,80	354.500,68	1.772.503,40

A.5 Project outputs and result overview

Programme output indicator	Aggregated value per Programme output indicator	Measurement unit	Output number	Output title	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
Strategies and action plans jointly developed	3,00	strategy /action plan	Output 1.2	Strategies for sustainable plastic management in Central Europe	1,00	Joint strategies and action plans taken up by organisations	0,00	3,00	joint strategy /action plan
			Output 2.1	Strategies for low carbon footprint chemical industry in CE	1,00				
			Output 3.1	Strategies for green production of chemical products in Central Europe	1,00				
Organisations cooperating across borders	15,00	organisations	Output 1.1	Expert consortium for sustainable plastic management in Central Europe	15,00	Organisations cooperating across borders after project completion	0,00	12,00	organisations
Jointly developed	4,00	solutions	Output	Solutions for	1,00	Solutions taken	0,00	4,00	solutions

Programme output indicator	Aggregated value per Programme output indicator	Measurement unit	Output number	Output title	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
solutions			1.4	sustainable plastic management		up or up-scaled by organisations			
			Output 2.3	Technological solutions for low carbon footprint chemical industry in CE	1,00				
			Output 3.3	Reduction of waste in preparation of fine chemicals	1,00				
			Output 3.5	Advanced technologies towards effective processes	1,00				
Pilot actions developed jointly and implemented in projects	4,00	pilot actions	Output 1.3	Pilot actions for sustainable plastic management in Central Europe	1,00				
			Output 2.2	Technologies for minimizing CO2 impact on the	1,00				

Programme output indicator	Aggregated value per Programme output indicator	Measurement unit	Output number	Output title	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
				Central European region					
			Output 3.2	Pilot actions for reduction of the waste material in preparation of fine chemicals	1,00				
			Output 3.4	Pilot actions for greener preparation of fine chemicals	1,00				

B - Project partners

B.0 Partners overview

Partner Number	Status	Name of the organisation in English	Country (NUTS 0)	Abbreviated name of organisation	Partner role in the project	B.2 Associated partners	Partner total eligible budget
1	Active	Charles University	Česko (CZ)	CU	LP	Santiago chemikalie, s.r.o.	352.700,00
2	Active	Association of Chemical Industry of the Czech Republic	Česko (CZ)	SCHP CR	PP	CO2 Czech Solution Group, z.s. Česká technologická platforma PLASTY	61.854,00
3	Active	Zentiva k.s.	Česko (CZ)	Zentiva	PP		201.847,00
4	Active	The Servier Research Institute of Medicinal Chemistry	Magyarország (HU)	SRIMC	PP	Egis Gyógyszergyár Zártkörűen Működő Részvénytársaság	151.850,00
5	Active	Eötvös Loránd University	Magyarország (HU)	ELU	PP		201.847,00
6	Active	TU Wien	Österreich (AT)	TU Wien	PP		211.850,00
7	Active	University of Ljubljana	Slovenija (SI)	UL	PP	AquafilSLO, d.o.o. Belinka Perkemija, d.o.o.	301.850,40
8	Active	Chamber of Commerce and Industry of Štajerska	Slovenija (SI)	CCIS	PP		136.852,00
9	Active	VTL GmbH	Österreich	VTL	PP		151.853,00

Partner Number	Status	Name of the organisation in English	Country (NUTS 0)	Abbreviated name of organisation	Partner role in the project	B.2 Associated partners	Partner total eligible budget
			(AT)				

B.1 Project partner 1

B.1.1 Partner Identity	
Partner number	1
Partner role	LP
Name of the organisation in original language	Univerzita Karlova
Name of the organisation in English	Charles University
Abbreviated name of organisation	CU
Department / unit / division	Department of Organic Chemistry, Faculty of Science
B.1.2 Partner main address	
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	Ovocný trh 560/5 116 36 Praha 1
Homepage	https://cuni.cz/
Address of department / unit / division (if applicable)	
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	Hlavova 2030/8 128 00 Praha 2
B.1.3 Legal and financial information	
Type of partner	Higher education and research organisations
Subtype of partner	
Legal status	Public
Sector of activity at NACE group level	P.85.42
Co-financing rate (%)	80
VAT number (if applicable)	CZ00216208

B.1.3 Legal and financial information	
Other identifier number (if VAT number is not available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	999923434

B.1.4 Legal Representative	
Legal representative	

B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

Charles University is a leading academic institution in the Czech Republic (one of the top three universities in Central/Eastern Europe, according to the QS rankings), consisting of 17 faculties and 4 institutes. It is part of the 4EU+ Alliance, one of the 17 pilot "European Universities" alliances supported by the European Commission to enhance the quality and attractiveness of European higher education.

One of its largest faculties, the Faculty of Science now employs nearly 800 research and education staff and provides training for more than 5300 students, out of that more than 1500 are doctoral students. Its research activities include fundamental and applied research in biology, chemistry, geology, geography, and environmental studies. The Chemistry section of the Faculty of Science with its Department of Organic Chemistry has trained experts in organic synthesis and catalysis. They have extensive experience in supervising students, managing research groups, and organizing projects. As a part of a university, it has a background in holding conferences and lectures for chemists and students.

Charles University is a public institution with an overlap with the private sector in the area of knowledge and technology transfer. Intellectual property rights are managed by the Centre of Knowledge and Technology Transfer established by Charles University.

What is the role and involvement (contribution and main activities) of your organisation in the project?

Charles University (CU) will be the lead partner within the project consortium. It will also take a lead role in the activity 3.1. (WP 3). Besides that, CU will be active in several activities, namely activity 2.2. (WP2), activities 3.1., 3.2., and 3.3. (WP3). CU will provide its expertise in the development of strategies for greener production of fine chemicals, and industrial R&D. Particularly, CU will contribute to the

B.1.6 Partner motivation, expertise and contribution

development of pilot actions and solutions relevant to the valorization of the waste chemicals, arising from the chemical production (activity 2.2., WP2), further to the advancement of strategies, pilots and solutions linked to the development of and implementation of modern technologies to minimize or avoid the high consumption and formation of waste solvents, and development of modern technologies for effective processed within the chemical production and industrial R&D (activities 3.1., 3.2., and 3.3. WP3). CU will bring an associated partner (Santiago), who will be involved in the activities 3.2. and 3.3., WP3.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

Regarding international projects, Charles University has been involved in 103 Horizon 2020 projects, 17 Horizon Europe projects, and 26 Erasmus+ projects so far. The Faculty of Science has also a long-time experience with EU co-financed projects from National Operational Programmes; recently we have established Charles University Center of Advanced Materials (CUCAM), ESIF-ERDF - OP VVV CZ.02.1.01 /0.0/0.0/15_003/0000417 (8.2 mil EUR, 2016-2022).
The Chemistry Section of Charles University has successfully participated in several FP7 projects and other international networks, such as COST and MSCA Internation Training Networks. The Faculty of Science as such has been involved in 20 Horizon 2020 and 5 Horizon Europe projects, 4 Interreg collaborative projects, and many more.

The Faculty has established its own Project Management Department which provides informative, administrative, and organizational support for the grant activities of scientific and academic employees of the faculty. The administrative departments of the Faculty of Science also include administrative facilities, such as the Project Management Department, the Human Resources Department, the Legal Department, the Public Procurement Department or the External Relations Department, which will support the project team during the implementation of the project in financial, legal, popularization and administrative matters of the project. Close collaboration with these departments will ensure that all activities and related documentation comply with organizational regulations, national legislation, and public tender documentation methodology.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	282.160,00	80,00 %
Partner contribution	70.540,00	20,00 %

B.1.8 Cofinancing

Source	Amount	Percentage
Partner total eligible budget	352.700,00	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
CU	Public	35.270,00	10,00 %
Ministry of regional development	Public	35.270,00	10,00 %

Contribution

Sub-total public contribution	70.540,00	20,00 %
Sub-total automatic public contribution	0,00	0,00 %
Total	0,00	0,00 %
Total eligible budget	70.540,00	20,00 %

State Aid

B.1.9 State Aid information (Partner self-check)

A. Is the partner involved in economic activities within the project?

1. Will the partner implement activities and/or offer goods/services for which a market exists?	No
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No

B. Does the partner and/or any third party receive a selective advantage within the project?

1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No

C. State aid relevant activities (select from drop-down menu based on C.4 entries)	
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	

B.1 Project partner 2

B.1.1 Partner Identity	
Partner number	2
Partner role	PP
Name of the organisation in original language	Svaz chemického průmyslu České republiky
Name of the organisation in English	Association of Chemical Industry of the Czech Republic
Abbreviated name of organisation	SCHP CR
Department / unit / division	
B.1.2 Partner main address	
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	Rubeška 393/7 190 00 Praha 9
Homepage	https://www.schp.cz/
Address of department / unit / division (if applicable)	
Country (NUTS 0)	
Region (NUTS 2)	
NUTS 3	
Street, House number, Postal code, City	
B.1.3 Legal and financial information	
Type of partner	Sectoral agency
Subtype of partner	
Legal status	Private
Sector of activity at NACE group level	C.19.2
Co-financing rate (%)	80
VAT number (if applicable)	CZ16193725

B.1.3 Legal and financial information	
Other identifier number (if VAT number is not available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	942672579
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

The Association of the Chemical Industry of the Czech Republic (hereinafter referred to as SCHP CR) was established in 1992 as a voluntary association of production, trade, design, research, education, and consulting organizations related to the chemical, pharmaceutical, petrochemical industries and plastics and rubber processing. SCHP CR now associates 135 companies and its members represent more than 70% of the total production of the above-mentioned industries in the Czech Republic. SCHP CR has experience with a number of European projects, currently in the field of training the employees of member companies. In the past, SCHP CR was also involved in the international project SpiCE3, focused on energy efficiency and Interreg (3 consecutive projects related to transport issues from the European chemical industry (the last one was the project Chemmultimodal completed in 2019).

What is the role and involvement (contribution and main activities) of your organisation in the project?

SCHP CR will be a leader of the WP2 and it will play a key role in the communication between the chemical industrial community and the consortium. The reachability to the portfolio of the chemical companies and the ability to extract the relevant data will be crucial in particular within the activities 1.1. (WP1) and 2.1. (WP2), where SCHP CR will actively participate in the creation of the outcomes. In addition, the SCHP CR will play a role in the dissemination of all the outputs among the chemical companies. SCHP CR will bring two associated partners (Czech Technological Platform Plastics, and CO2 Czech Solutions), who will be involved in the activities of WP 1 and WP2.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the

B.1.6 Partner motivation, expertise and contribution

project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	49.483,20	80,00 %
Partner contribution	12.370,80	20,00 %
Partner total eligible budget	61.854,00	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
SCHP CR	Private	6.185,40	10,00 %
Ministry of Regional Development	Public	6.185,40	10,00 %

Contribution

Sub-total public contribution	6.185,40	10,00 %
Sub-total automatic public contribution	0,00	0,00 %
Total	6.185,40	10,00 %
Total eligible budget	12.370,80	20,00 %

State Aid

B.1.9 State Aid information (Partner self-check)

A. Is the partner involved in economic activities within the project?

1. Will the partner implement activities and/or offer goods/services for which a market exists?	No

B.1.9 State Aid information (Partner self-check)	
A. Is the partner involved in economic activities within the project?	
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No
B. Does the partner and/or any third party receive a selective advantage within the project?	
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No
C. State aid relevant activities (select from drop-down menu based on C.4 entries)	
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	

B.1 Project partner 3

B.1.1 Partner Identity	
Partner number	3
Partner role	PP
Name of the organisation in original language	Zentiva k.s.
Name of the organisation in English	Zentiva k.s.
Abbreviated name of organisation	Zentiva
Department / unit / division	
B.1.2 Partner main address	
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	U Kabelovny 130/22 102 37 Praha-Dolní Měcholupy
Homepage	https://www.zentiva.cz/
Address of department / unit / division (if applicable)	
Country (NUTS 0)	
Region (NUTS 2)	
NUTS 3	
Street, House number, Postal code, City	
B.1.3 Legal and financial information	
Type of partner	Enterprise, except SME
Subtype of partner	Large enterprise
Legal status	Private
Sector of activity at NACE group level	C.21.1
Co-financing rate (%)	80
VAT number (if applicable)	CZ49240030
Other identifier number (if VAT number is not	

B.1.3 Legal and financial information	
available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

Zentiva is a pharmaceutical company with a specialization in the development, manufacturing, and distribution of generic and over-the-counter (OTC) medications. Its activities reach across many parts of the region, including the Czech Republic, Slovakia, Hungary, Poland, Italy, and Germany. The development and production target various therapeutic areas, including cardiovascular, respiratory, central nervous system, and gastrointestinal disorders.

What is the role and involvement (contribution and main activities) of your organisation in the project?

The involvement of Zentiva is important for accomplishing of specific objectives within WP2, in particular activity 2.2., as well as achieving the objectives of activities 3.1., 3.2., and 3.3., relevant for WP3. Within this cooperation, it is aimed to develop greener solutions in the production of starting materials, intermediates, and/or final pharmaceutical products. In particular, pilots and solutions related to waste minimalization (activity 2.2., WP3), application of modern technologies, and instrumentation to streamline processes, with an emphasis on sustainability and greening of processes will be sought. Zentiva will play the role of the end-user and will take-up the developed outputs.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	161.477,60	80,00 %
Partner contribution	40.369,40	20,00 %
Partner total eligible budget	201.847,00	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
Zentiva	Private	40.369,40	20,00 %

Contribution

Sub-total public contribution	0,00	0,00 %
Sub-total automatic public contribution	0,00	0,00 %
Total	40.369,40	20,00 %
Total eligible budget	40.369,40	20,00 %

State Aid

B.1.9 State Aid information (Partner self-check)

A. Is the partner involved in economic activities within the project?

1. Will the partner implement activities and/or offer goods/services for which a market exists?	Yes	The knowledge gained within the Interreg program in the field of development of effective synthetic processes, waste reduction, or recycling of catalysts, will be tested on specific, existing products. This ensures that the results of the development could be applied in practice. However, the aim of the development activities will not be to increase the profitability of products, but to minimize the impact on the environment.
2. Are there activities/goods/services that could have been undertaken by an operator	No	

B.1.9 State Aid information (Partner self-check)	
A. Is the partner involved in economic activities within the project?	
with the view of making profit (even if this is not the partner's intention)?	
B. Does the partner and/or any third party receive a selective advantage within the project?	
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No
C. State aid relevant activities (select from drop-down menu based on C.4 entries)	
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	GBER Article 20

B.1 Project partner 4

B.1.1 Partner Identity	
Partner number	4
Partner role	PP
Name of the organisation in original language	Servier Gyógyászati Vegytani Kutatóintézet Zártkörűen Működő Részvénytársaság
Name of the organisation in English	The Servier Research Institute of Medicinal Chemistry
Abbreviated name of organisation	SRIMC
Department / unit / division	
B.1.2 Partner main address	
Country (NUTS 0)	Magyarország (HU)
Region (NUTS 2)	Budapest (HU11)
NUTS 3	Budapest (HU110)
Street, House number, Postal code, City	Záhony utca 7 1031 Budapest
Homepage	http://www.servier.hu/pages/srimc.aspx
Address of department / unit / division (if applicable)	
Country (NUTS 0)	
Region (NUTS 2)	
NUTS 3	
Street, House number, Postal code, City	
B.1.3 Legal and financial information	
Type of partner	Enterprise, except SME
Subtype of partner	Large enterprise
Legal status	Private
Sector of activity at NACE group level	M.72.1
Co-financing rate (%)	80
VAT number (if applicable)	HU13735630

B.1.3 Legal and financial information	
Other identifier number (if VAT number is not available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	968826495
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

The Servier Research Institute of Medicinal Chemistry (SRIMC, established in 2007) is a part of the Servier Laboratories. Its activity is focused on the chemical aspects of original drug discovery. In this process the institute's The Institute hosts four divisions working on Drug Discovery (2), Process Chemistry and Analytical Chemistry.
The majority of SRIMC's 60 co-workers are engaged in synthetic chemical activities on a daily basis, which is directly connected with the project's objectives. Around 100 synthetic reactions are initiated every day, each using chemicals on the milligram to hundred gram scale, and solvents on the ten-gram to kilogram scale. More than 98% of the used chemicals (by weight) will end up as waste. The synthetic transformations run in the laboratories are very diverse, and the drug discovery process requires rapid delivery, which makes the individual optimization of these processes impossible. SRIMC collaborators have broad expertise in synthetic chemistry covering diverse areas such as biocatalysis, metal catalysis, working with sensitive materials, natural product chemistry, small molecule organic chemistry. The preparative instrumentation covers multiple microwave and microfluidics reactors of different scale, parallel reactors and evaporators, temperature-controlled reaction vessels of various sizes, etc. The synthetic activities are supported by open access analytical (~20) and preparative (~25) chromatographs, LC-MSs (5) and GC-MSs (2), and a 400 MHz NMR. The analytical division houses high performance instruments including a 500 MHz NMR with cryo probe, chiral preparative HPLC, high resolution mass spectrometers coupled with LC and GC equipment, 8-chanel parallel chromatograph, ion chromatograph, IR spectrometer, and elementary analyser.
SRIMC does not perform any economic activities on the market. It's sole focus is research.

What is the role and involvement (contribution and main activities) of your organisation in the project?

B.1.6 Partner motivation, expertise and contribution

The Servier Research Institute of Medicinal Chemistry is a research organization, performing synthetic chemical activities on from the milligram to hundred-gram scale. From the sustainability and green chemistry perspective the key challenges of these activities are:
i) How to improve the atom economy of the synthetic transformations
ii) How to minimize the waste production in these synthetic transformations
iii) How to minimize the ecological impact by using more environmentally-friendly chemicals

The key role of SRIMC in the project will be to bring the perspective of an industrial research organization into the consortium. This will include contributions to the:
i) Identification of the major obstacles that hinder the creation of chemical processes that are both environmentally friendly and economically sustainable
ii) Identification of break-through points, which might lead to a non-incremental improvement in the eco-sustainability and greenness of our chemical processes.
iii) Execution of studies that can result in more atom economic synthetic transformations in the industrial research environment
iv) Execution of studies that help to minimize the waste production in the synthetic transformations used in the industrial research environment.
v) Execution of studies that help to switch from common to more environmentally-friendly chemicals in the industrial research environment.

SRIMC also plans to play a key role in the dissemination of the project's results and raising the professional and public awareness of green chemical technologies. We plan to actively participate in the:
i) Spreading the results of the project to the broader professional community through conference presentations and publications.
ii) Training of the next generation of professionals participating in the higher education as part of the curriculum or through dedicated training events.

The activities of SPIMC will fall into work packages 2 and 3.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	121.480,00	80,00 %

B.1.8 Cofinancing			
Source		**Amount**	**Percentage**
Partner contribution		30.370,00	20,00 %
Partner total eligible budget		151.850,00	100,00 %
Origin of partner contribution			
Source of contribution	**Legal status**	**Amount**	**% of total partner budget**
SRIMC	Private	30.370,00	20,00 %
Contribution			
Sub-total public contribution		0,00	0,00 %
Sub-total automatic public contribution		0,00	0,00 %
Total		30.370,00	20,00 %
Total eligible budget		30.370,00	20,00 %
State Aid			
B.1.9 State Aid information (Partner self-check)			
A. Is the partner involved in economic activities within the project?			
1. Will the partner implement activities and/or offer goods/services for which a market exists?		No	
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?		No	
B. Does the partner and/or any third party receive a selective advantage within the project?			
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?		No	
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?		No	

C. State aid relevant activities (select from drop-down menu based on C.4 entries)	
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	

B.1 Project partner 5

B.1.1 Partner Identity	
Partner number	5
Partner role	PP
Name of the organisation in original language	Eötvös Loránd Tudományegyetem
Name of the organisation in English	Eötvös Loránd University
Abbreviated name of organisation	ELU
Department / unit / division	Kémiai Intézet
B.1.2 Partner main address	
Country (NUTS 0)	Magyarország (HU)
Region (NUTS 2)	Budapest (HU11)
NUTS 3	Budapest (HU110)
Street, House number, Postal code, City	Egyetem tér 1-3 1053 Budapest
Homepage	www.elte.hu
Address of department / unit / division (if applicable)	
Country (NUTS 0)	Magyarország (HU)
Region (NUTS 2)	Budapest (HU11)
NUTS 3	Budapest (HU110)
Street, House number, Postal code, City	Pázmány Péter sétány 1/A 1117 Budapest
B.1.3 Legal and financial information	
Type of partner	Higher education and research organisations
Subtype of partner	
Legal status	Public
Sector of activity at NACE group level	P.85.42
Co-financing rate (%)	80
VAT number (if applicable)	HU15308744

B.1.3 Legal and financial information	
Other identifier number (if VAT number is not available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	999896468
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

ELU has a strong track record of successful project management, demonstrated expertise in navigating the complexities of EU funding programs, and possesses the relevant communication competencies and experiences necessary for effective project coordination. ELU, as a leading research-intensive university, has a robust infrastructure and well-established administrative systems that support the management of large-scale projects. The university's experienced project management team possesses the necessary expertise to handle the intricacies of EU-funded projects, ensuring efficient coordination and compliance with relevant regulations and guidelines. ELU has a wealth of experience in managing EU co-financed projects across various funding programs, such as Horizon 2020 and Erasmus+. The university has successfully coordinated numerous projects involving multiple international partners, demonstrating its ability to establish effective consortiums and lead collaborative efforts towards project goals. In addition to EU-funded projects, ELU has a strong presence in international collaborations beyond the European Union. The university has actively participated in joint research initiatives, bilateral projects, and academic networks worldwide. This extensive experience has provided ELU with a deep understanding of international cooperation dynamics and has strengthened its intercultural communication competencies. ELU has a strong tradition of disseminating project outcomes through academic publications, conferences, workshops, and public engagement activities. The university understands the importance of reaching both scientific communities and wider audiences to maximize the impact of project results. ELU's capacity and experience in managing and coordinating EU co-financed and international projects, coupled with its strong communication competencies, position the university as an ideal partner for collaborative initiatives.

What is the role and involvement (contribution and main activities) of your organisation in the project?

B.1.6 Partner motivation, expertise and contribution

The role and active involvement of our research laboratory is the development of sustainable chemical production methods for fine chemicals, such as active pharmaceutical ingredients (APIs) based on transition metal catalysis and biodegradable micellar systems (activity 3.2., WP3). Considering sustainable API production, our research group aims to develop innovative synthetic designs and processes that promote sustainability throughout the production of APIs. This includes the reduction of hazardous substances, energy consumption, and waste generation (activities 2.2., 3.3., WP2, and WP3). We intend to focus on designing APIs synthetic routes that possess improved environmental profiles, emphasizing the use of environmentally benign solvents such as micellar systems and reducing the environmental impact of API synthesis. By implementing efficient reaction pathways and exploring novel techniques, we will strive to minimize waste generation during API production. Green chemistry aspects will be in the focus while we will employ principles, such as the use of renewable feedstocks, benign catalysts, and energy-efficient processes. Additionally, the project will explore the potential of micellar chemistry to enhance reaction efficiency and reduce environmental impact. Our laboratory will investigate strategies for the reuse and recycling of environmentally critical raw materials, reducing resource consumption and minimizing environmental footprint. This project's outcomes will contribute to the advancement of the sustainable chemical production of APIs, aligning with the European Union's goals of promoting green and circular economy principles. The research laboratory's involvement will drive innovation, provide solutions to environmental challenges, and contribute to the development of a skilled workforce. By bridging academia and industry, the laboratory will facilitate knowledge transfer, technology adoption, and economic growth. Ultimately, this project will foster a more sustainable pharmaceutical industry and benefit society as a whole.

If you are the project lead partner, please describe here your organisation’s capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation’s relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	161.477,60	80,00 %
Partner contribution	40.369,40	20,00 %
Partner total eligible budget	201.847,00	100,00 %

Origin of partner contribution			
Source of contribution	Legal status	Amount	% of total partner budget
ELU	Public	40.369,40	20,00 %

Contribution		
Sub-total public contribution	40.369,40	20,00 %
Sub-total automatic public contribution	0,00	0,00 %
Total	0,00	0,00 %
Total eligible budget	40.369,40	20,00 %

State Aid	
B.1.9 State Aid information (Partner self-check)	
A. Is the partner involved in economic activities within the project?	
1. Will the partner implement activities and/or offer goods/services for which a market exists?	No
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No
B. Does the partner and/or any third party receive a selective advantage within the project?	
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No
C. State aid relevant activities (select from drop-down menu based on C.4 entries)	
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	

B.1 Project partner 6

B.1.1 Partner Identity	
Partner number	6
Partner role	PP
Name of the organisation in original language	Technische Universität Wien
Name of the organisation in English	TU Wien
Abbreviated name of organisation	TU Wien
Department / unit / division	Institute for Applied Synthetic Chemistry
B.1.2 Partner main address	
Country (NUTS 0)	Österreich (AT)
Region (NUTS 2)	Wien (AT13)
NUTS 3	Wien (AT130)
Street, House number, Postal code, City	Karlsplatz 13 1040 Wien
Homepage	https://www.tuwien.at/
Address of department / unit / division (if applicable)	
Country (NUTS 0)	Österreich (AT)
Region (NUTS 2)	Wien (AT13)
NUTS 3	Wien (AT130)
Street, House number, Postal code, City	Getreidemarkt 9/163 1060 Wien
B.1.3 Legal and financial information	
Type of partner	Higher education and research organisations
Subtype of partner	
Legal status	Public
Sector of activity at NACE group level	P.85.4
Co-financing rate (%)	80
VAT number (if applicable)	ATU37675002

B.1.3 Legal and financial information	
Other identifier number (if VAT number is not available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	999979888
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

TU Wien represents the largest Austrian University of Science and Technology conducting research, teaching, and innovation under the motto 'Technology for people' for over 200 years. Over the years TU Wien has evolved into an open academic institution built on strong foundations of basic and applied research as well as research-oriented teaching at the highest level. With its eight faculties (57 institutes and about 2.800 researchers) TU Wien covers the whole value-added chain within the classical engineering and natural science fields - basic as well as applied research projects provide the newest findings and innovations.
Research at TU Wien is based on twin pillars: fundamental research at the subject level together with the interdisciplinary integration, and application-orientated research built on this fundamental research. Together, they represent the key elements of the research output of TU Wien. With respect to the main role of university research, namely "generating knowledge to increase understanding and for the benefit of society", these elements are directed towards utilizing this understanding and knowledge.
In addition to basic research for the development of new methods and strategies of synthesis, the focus of the Institute of Applied Synthetic Chemistry is on practice-oriented synthetic chemistry. The cornerstones of its activities are the synthesis and characterization of products that are industrially and technologically exploitable and marketable as well as the development of technical manufacturing processes. The minimization of the input of both energy and material resources is a key feature in many of the institute's projects.
At the EU level, TU Wien is the leading Austrian university in terms of EU schemes (2007 to 2013: 369 EU projects with a total volume of approx. EUR 125 million, ranking 42nd to become the only Austrian university in the FP7 Top 50 Higher Education Institutions (HES) ranking for 2013), and in terms of Austrian patents awarded (with 16 entries in the 2013 inventors' ranking issued by the Austrian patent office, the university is at number five, making it the only Austrian university in the top ten, and also the

B.1.6 Partner motivation, expertise and contribution

only university achieving main INVENTUM prizes for patent of the year).
In June 2020, TU Wien was awarded the "HR Excellence in Research Award" by the European Commission. This award recognizes those European research institutions that are successful in adapting their HR policies to the 40 principles of the "European Charter for Researchers & Code of Conduct for the Recruitment of Researchers" with a tailor-made action plan or HR strategy. By continuously implementing the principles of the Charter & Code, TU Wien positions itself as an attractive employer in the heart of Europe for researchers from all over the world.

What is the role and involvement (contribution and main activities) of your organisation in the project?

TUW will provide expertise in several directions, relevant to work packages 2 and 3. The Institute of Applied Synthetic Chemistry (IAS) at TU Wien is the lead of activity 2.2., WP2, where it also actively contributes. Moreover, TUW will participate in activities 3.2. and 3.3., WP3, where the expertise related to the development of effective processes will be provided. The expertise includes in particular the biotechnologies (relevant to activity 3.3., WP3), the flow processes (relevant to activity 3.3., WP3), or advanced technologies such as cascade reactions.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	169.480,00	80,00 %
Partner contribution	42.370,00	20,00 %
Partner total eligible budget	211.850,00	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
TU Wien	Public	42.370,00	20,00 %

Contribution

Sub-total public contribution	42.370,00	20,00 %

Contribution		
Sub-total automatic public contribution	0,00	0,00 %
Total	0,00	0,00 %
Total eligible budget	42.370,00	20,00 %
State Aid		
B.1.9 State Aid information (Partner self-check)		
A. Is the partner involved in economic activities within the project?		
1. Will the partner implement activities and/or offer goods/services for which a market exists?	No	
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No	
B. Does the partner and/or any third party receive a selective advantage within the project?		
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No	
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No	
C. State aid relevant activities (select from drop-down menu based on C.4 entries)		
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)		

B.1 Project partner 7

B.1.1 Partner Identity	
Partner number	7
Partner role	PP
Name of the organisation in original language	Univerza v Ljubljani
Name of the organisation in English	University of Ljubljana
Abbreviated name of organisation	UL
Department / unit / division	Faculty of Chemistry and Chemical Technology
B.1.2 Partner main address	
Country (NUTS 0)	Slovenija (SI)
Region (NUTS 2)	Zahodna Slovenija (SI04)
NUTS 3	Osrednjeslovenska (SI041)
Street, House number, Postal code, City	Kongresni trg 12 1000 Ljubljana
Homepage	https://www.uni-lj.si/
Address of department / unit / division (if applicable)	
Country (NUTS 0)	Slovenija (SI)
Region (NUTS 2)	Zahodna Slovenija (SI04)
NUTS 3	Osrednjeslovenska (SI041)
Street, House number, Postal code, City	Večna pot 113 1000 Ljubljana
B.1.3 Legal and financial information	
Type of partner	Higher education and research organisations
Subtype of partner	
Legal status	Public
Sector of activity at NACE group level	M.72.1
Co-financing rate (%)	80
VAT number (if applicable)	SI54162513

B.1.3 Legal and financial information	
Other identifier number (if VAT number is not available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	999923240

B.1.4 Legal Representative	
Legal representative	

B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

The University of Ljubljana (UL) is the central and largest educational institution in Slovenia. It is also the central and largest research institution in Slovenia with 30 percent of all registered researchers. University with its rich tradition was founded in 1919. UL is renowned for its quality social and natural sciences and technical study programmes, structured in accordance with the Bologna Declaration.
The Faculty of Chemistry and Chemical Technology (http://www.fkkt.uni-lj.si/en/) (FKKT) is committed to basic, applied, and development research, trying to achieve excellence and the highest quality standards in the areas of chemistry, biochemistry, chemical engineering, fire safety, and occupational safety. Besides 1st and 2nd cycle study programmes in these areas, it runs 3rd cycle study doctoral programme in Chemical Sciences. The Faculty co-operates with companies and promotes its own research and pedagogical achievements and contributes its share to the general social development. The research and education activities of the faculty are very much oriented towards green chemistry and circular economy. Since 2023 the faculty is involved in the "NextGenerationEU" program by implementation of sustainable production in the curriculum.
UL is very active in international research and education programmes, mostly (co-)financed by EU. In the programming period 2007-2013, the UL altogether cooperated in 745 European projects, including 160 FP7 projects, followed by 165 projects in the frame of H2020, which ranked UL in the first place in the EU-13 countries among the research organisations. University's and Faculty's Research Support Offices take care that all projects are implemented in accordance with project rules. Our double-checking processes ensure that all expenses are incurred in an identifiable and verifiable way and recorded separately for each project. Important achievements and events are communicated in numerous ways, primarily via webpages of the University (https://www.uni-lj.si/eng/) and Faculty (https://www.fkkt.uni-lj.si/sl/o-fakulteti/).

B.1.6 Partner motivation, expertise and contribution

What is the role and involvement (contribution and main activities) of your organisation in the project?

UL is the key academic institution that will be the lead of the WP3, and the lead of activity 1.2. (WP1). Together with their associated partner Aquafil, UL will be involved in activity 1.2 (WP1), where a sustainable production of the plastic material will be aimed and together with their associated partner Belinka Perkemija UL will be involved in activity 2.2 (WP2), where the utilization of the natural material for the carbon capture will be explored. Moreover, UL will provide the expertise within activities 3.2. and 3.3. (WP3).

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	241.480,32	80,00 %
Partner contribution	60.370,08	20,00 %
Partner total eligible budget	301.850,40	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
UL	Public	60.370,08	20,00 %

Contribution

Sub-total public contribution	60.370,08	20,00 %
Sub-total automatic public contribution	0,00	0,00 %
Total	0,00	0,00 %
Total eligible budget	60.370,08	20,00 %

State Aid

B.1.9 State Aid information (Partner self-check)	
A. Is the partner involved in economic activities within the project?	
1. Will the partner implement activities and/or offer goods/services for which a market exists?	No
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No
B. Does the partner and/or any third party receive a selective advantage within the project?	
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No
C. State aid relevant activities (select from drop-down menu based on C.4 entries)	
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	

B.1 Project partner 8

B.1.1 Partner Identity	
Partner number	8
Partner role	PP
Name of the organisation in original language	Štajerska gospodarska zbornica
Name of the organisation in English	Chamber of Commerce and Industry of Štajerska
Abbreviated name of organisation	CCIS
Department / unit / division	
B.1.2 Partner main address	
Country (NUTS 0)	Slovenija (SI)
Region (NUTS 2)	Vzhodna Slovenija (SI03)
NUTS 3	Podravska (SI032)
Street, House number, Postal code, City	Ulica talcev 24 2000 Maribor
Homepage	http://www.stajerskagz.si
Address of department / unit / division (if applicable)	
Country (NUTS 0)	
Region (NUTS 2)	
NUTS 3	
Street, House number, Postal code, City	
B.1.3 Legal and financial information	
Type of partner	Business support organisation
Subtype of partner	
Legal status	Private
Sector of activity at NACE group level	S.94.11
Co-financing rate (%)	80
VAT number (if applicable)	SI29710065
Other identifier number (if VAT number is not	

B.1.3 Legal and financial information	
available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

CCIS represents the business community of Podravje Region, provides support and advice to companies as well as a full range of professional services aimed at strengthening competitiveness of its members. Chamber has a lot of experiences in providing services for companies, entrepreneurs and employers, among them also providing seminars and training courses, business consultancy, advocacy towards the state, it facilitates collaboration and business networking, organizes business conferences, business delegations in a very various range of topics/contents. It has more than 450 members under non-obligatory membership. The Chamber also developed a wide range of partnerships with local and national institutions, contacts with politicians, municipalities, educational institutions, research institutions and other stakeholders that are important for the economy in the region.

What is the role and involvement (contribution and main activities) of your organisation in the project?

Our organisation will be involved as the stakeholder identifier and connector to ensure greater impact in terms of know-how spill-over and outreach of the project outputs. We have the capacity and communication expertise to involve actors from the quadruple helix in order to promote circular chemistry solutions to speed up the transition to a circular
economy in all involved regions/countries.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

CCIS possesses extensive expertise in management, communication, networking, and cooperation

B.1.6 Partner motivation, expertise and contribution

within the field of circular economy at both national and international levels. We have established strong connections with various stakeholders, including the business sector, R&D institutions, government bodies, universities, and schools in Slovenia. Over the past five years, we have actively participated in numerous local, regional, national, and international projects, making us well-equipped for project management. Notable among our experiences are the SRIP-Circular Economy project, Interreg projects (SI-AT, SI-HU), Horizon 2020 initiatives, and the Danube program, all of which have received co-financing from EU funds. In the GreenChemForCE project, we will leverage our comprehensive knowledge, expertise, competences, and skills in circular economy practices, communication management, and fostering strong partnerships and networks. Additionally, CCIS will assume the role of the project's communication partner, drawing on our extensive communication references from the SRIP-Circular Economy and international projects like Interreg SI-AT H2GreenTECH. To effectively reach and engage our target groups, we employ a range of communication tools, including our website, social media platforms (Facebook, Twitter, LinkedIn, Instagram, YouTube), newsletters, emails, telephone or personal interactions, and various informational materials such as online and printed leaflets, magazines, handbooks, and newspapers tailored to different target audiences. With our knowledge, competences, and experience, CCIS is well-equipped to develop a comprehensive communication strategy. Thus, our contribution to the GreenChemforCE project will be highly valuable, as we will bring our expertise and potential in communication to enhance the project's communication activities across WP1, WP2, and WP3. Other project partners will also contribute their expertise and experience in communication with specific target groups and stakeholders, ensuring a collaborative approach.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	109.481,60	80,00 %
Partner contribution	27.370,40	20,00 %
Partner total eligible budget	136.852,00	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
CCIS	Private	27.370,40	20,00 %

Contribution

Sub-total public contribution	0,00	0,00 %

Contribution		
Sub-total automatic public contribution	0,00	0,00 %
Total	27.370,40	20,00 %
Total eligible budget	27.370,40	20,00 %

State Aid		
B.1.9 State Aid information (Partner self-check)		
A. Is the partner involved in economic activities within the project?		
1. Will the partner implement activities and/or offer goods/services for which a market exists?	Yes	There is a market for the services that are subject to the project, but we will not profit from their implementation in the project. These services will be freely, publicly available to everyone.
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No	
B. Does the partner and/or any third party receive a selective advantage within the project?		
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No	
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No	
C. State aid relevant activities (select from drop-down menu based on C.4 entries)		
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)		

B.1 Project partner 9

B.1.1 Partner Identity	
Partner number	9
Partner role	PP
Name of the organisation in original language	VTL GmbH
Name of the organisation in English	VTL GmbH
Abbreviated name of organisation	VTL
Department / unit / division	
B.1.2 Partner main address	
Country (NUTS 0)	Österreich (AT)
Region (NUTS 2)	Wien (AT13)
NUTS 3	Wien (AT130)
Street, House number, Postal code, City	Rudolf-von-Alt-Platz 4/13 1030 Wien
Homepage	https://www.viennatextilelab.at
Address of department / unit / division (if applicable)	
Country (NUTS 0)	
Region (NUTS 2)	
NUTS 3	
Street, House number, Postal code, City	
B.1.3 Legal and financial information	
Type of partner	SME
Subtype of partner	Small enterprise
Legal status	Private
Sector of activity at NACE group level	C.20.12
Co-financing rate (%)	80
VAT number (if applicable)	ATU76693017
Other identifier number (if VAT number is not	

B.1.3 Legal and financial information	
available, some other organisation identifier should be used)	
Other identifier description (specification of the type of identifier)	
PIC (from EC Participant Register), if available	885676446
B.1.4 Legal Representative	
Legal representative	
B.1.5 Contact person	
Contact person	
Email	
Telephone	

B.1.6 Partner motivation, expertise and contribution

Please describe the organisation's thematic competences and experiences relevant for the project. Please also describe what is the main business of the organisation and if the organisation is normally performing economic activities on the market.

Vienna Textile Lab is a biotech/fashion tech company that focuses on the research, development and production of textile dyes and pigments manufactured from microorganisms.
Our goal is to successfully combine sustainability, safety and performance and to generate a commercially viable alternative to synthetic dyes and pigments.
Vienna Textile Lab enables their customers to create more circular products that are less toxic, support biodiversity and zero waste as they shift towards improved production practices.
VTL stands for Vienna Textile Lab and its purpose is to develop novel textile dyes and pigments and new dyeing processes. The Vienna Textile Lab has collaborated with designers for several EU funded projects. In 2019, they began collaborations with Industrial clients, such as fashion companies, chemical companies and textile mills to create more circular products in the fashion industry.
VTL works on proof-of-concept projects, capsule collections, preindustrial runs in order to build a business for selling dyes and pigments. The first commercial product will be launched in 2025.
Commercial success:
- Working with industrial clients and designers since 2019.
- Many successful projects closed and we continue to work with our key customers, including integrated fashion brands, sport brands and textile mills.

Funding success:
- Raised more 1,6 Million EUR in European, and Austrian funds such as Climate KIC, Austrian Seed funds, Austrian research grants, ESA OSIP, ELIIT, WORTH Partnership Program, Small but Perfect and Galactica.

Austrian Entrepreneur Prize Phönix 2022
National and International Recognition:
- Winners at the Climate Launchpad in 2017: 1st Place in Austria and 3rd Place globally.
- Winner of the BOKU Startup Prize 2019.

B.1.6 Partner motivation, expertise and contribution

- Speaker at TEDx Canggu

VTL has successfully completed WORTH Partnership Project, ELIIT and Small but Perfect all of which are partnership projects between technology companies and creatives.
VTL has also participated in an ESA-OSIP Project (European Space Agency Open Space Innovation Platform) as a partner.
VTL is involved in various initiatives in regard to Green Chemistry and Circular Economy. Additionally, VTL and Greenly a sustainability service company are working on LCA and Carbon accounting. We will be working on various upscaling routes, in order to improve the environmental footprint of the overall process and the product.

What is the role and involvement (contribution and main activities) of your organisation in the project?

VTL as a SME with an interest in the development of dyes will participate in the program part relevant to the sustainable production of fine chemicals. We will actively contribute to activity 2.2., WP2, where the biotechnologies will be utilized for carbon capture and utilization (Employment of cyanobacteria for production of dyes). We will also contribute to activity 3.2., WP3, where the biotechnologies will be utilized for streamlining the processes for greener production of fine chemicals.

If you are the project lead partner, please describe here your organisation's capacity and experience in managing and coordinating EU co-financed projects or other international projects. If you are the project partner that will coordinate communication (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

B.1.7 Budget

Partner budget options	Percentage
Other costs Flat Rate	40%

The partner budgets overview table can be separately exported as an Excel file

B.1.8 Cofinancing

Source	Amount	Percentage
ERDF	121.482,40	80,00 %
Partner contribution	30.370,60	20,00 %
Partner total eligible budget	151.853,00	100,00 %

Origin of partner contribution

Source of contribution	Legal status	Amount	% of total partner budget
VTL	Private	30.370,60	20,00 %

Contribution		
Sub-total public contribution	0,00	0,00 %
Sub-total automatic public contribution	0,00	0,00 %
Total	30.370,60	20,00 %
Total eligible budget	30.370,60	20,00 %

State Aid		
B.1.9 State Aid information (Partner self-check)		
A. Is the partner involved in economic activities within the project?		
1. Will the partner implement activities and/or offer goods/services for which a market exists?	Yes	VTL is a company with running client projects. They will continue during the period of this project. The activities in this project though will aid only the improvement of the sustainability of the processes.
2. Are there activities/goods/services that could have been undertaken by an operator with the view of making profit (even if this is not the partner's intention)?	No	
B. Does the partner and/or any third party receive a selective advantage within the project?		
1. Does the partner gain any benefits (or is relieved of any costs) from the economic activities mentioned under section A, which it would not have received in the normal course of business, i.e. in the absence of funding granted through the project?	No	
2. Does any economic operator (e.g. SMEs) that is outside the partnership (i.e. not listed as partner in the application form) receive an advantage through activities carried out by the partner within the project?	No	
C. State aid relevant activities (select from drop-down menu based on C.4 entries)		
D. Direct State aid regime as in Subsidy Contract (to be filled in ONLY after project selection)	GBER Article 20	

B.2 Associated partners

Associated partner number	Status	Name of the organisation in original language	Associated to project partner
1	Active	Santiago chemikalie, s.r.o.	CU
2	Active	CO2 Czech Solution Group, z.s.	SCHP CR
3	Active	Česká technologická platforma PLASTY	SCHP CR
4	Active	AquafilSLO, d.o.o.	UL
5	Active	Belinka Perkemija, d.o.o.	UL
6	Active	Egis Gyógyszergyár Zártkörűen Működő Részvénytársaság	SRIMC

Santiago chemikalie, s.r.o. AO1	
Partner number	LP1
Name of the organisation in original language	Santiago chemikalie, s.r.o.
Name of the organisation in English	Santiago lab
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	Radiová 1285/7 102 00 Praha 15
Legal representative (not applicable - not to be filled in)	
Contact person	
Email	
Telephone	
Partner role	Santiago will be an industrial partner associated to Charles University. The main aim of this cooperation is to develop greener processes for industrial application, e.g. to exchange heavy metals in the processes for their greener alternatives, or to replace chlorinated or other environmentally critical solvents, especially for scale-up. The involvement of

Santiago chemikalie, s.r.o. AO1	
	Santiago will fall into activities 3.2. and 3.3., of the WP3. It is expected that the cooperation with Santiago as an associated partner will lead to deliverables such as a case or feasibility studies. Together with other partners, Santiago will actively attend workshops that will lead to identifying and addressing industrial problems. Implementation of the resulting know-how into industrial processes will directly impact the environment in the region, and by sharing the knowledge with other associated industrial partners, the solutions will be disseminated among other areas of Central Europe.

CO2 Czech Solution Group, z.s. AO2	
Partner number	PP2
Name of the organisation in original language	CO2 Czech Solution Group, z.s.
Name of the organisation in English	CO2 Czech Solution Group, z.s.
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	Rubeška 393/7 190 00 Praha 9
Legal representative (not applicable - not to be filled in)	
Contact person	
Email	
Telephone	
Partner role	CO2 Czech Solution Group is an association focused on creating an action expert group to effectively connect the Czech industrial and scientific potential. Other goals of the association are the involvement of the Czech Republic in international cooperation in the areas of low-carbon and circular economy and the creation of an effective cooperative environment in the Czech Republic. Within the consortium it will play a role of the industrial partner associated to Association of Chemical Industry of the Czech Republic. The involvement of CO2 Czech Solution Group is important for the fulfilment of the bjectives of specific objectives within WP1, specifically within activities 2.1. and 2.2. whereas the aim of the association is to support basic research, applied research or experimental development and subsequently promote their results through specific teaching, publishing and especially in the form of real applications and applicability of specific technology solutions in reducing emissions and CO2 reuse in the Czech Republic into industrial practice. CO2 Czech Solution Group also helps solve the efficient processing of plastic and mixed waste and thus promote material recycling as an alternative to

CO2 Czech Solution Group, z.s. AO2	
	waste incineration and landfilling. This will achieve lower greenhouse gas emissions and ensure the circularity of raw materials. The cooperation of CO2 Czech Solution Group with other similarly focused associations within the EU is expected. Therefore, it will have an impact on the whole region.

Česká technologická platforma PLASTY AO3	
Partner number	PP2
Name of the organisation in original language	Česká technologická platforma PLASTY
Name of the organisation in English	Czech Technology Platform Plastics
Country (NUTS 0)	Česko (CZ)
Region (NUTS 2)	Praha (CZ01)
NUTS 3	Hlavní město Praha (CZ010)
Street, House number, Postal code, City	Rubeška 393/7 190 00 Praha 9
Legal representative (not applicable - not to be filled in)	
Contact person	
Email	
Telephone	
Partner role	The Czech Technology Platform Plastics (abbreviated as CTPP) was established in 2011 as an association of legal entities with the aim of supporting the development of the plastics and related processing industry in the Czech Republic and related scientific, research, technological, and innovative activities, including activities aimed at protecting the environment and improving the positive perception of the plastics industry. CTPP acts as a platform for the exchange of views and experience in the field of plastics production, processing, use and recycling. To this end, it supports research, development and innovation and encourages the dissemination of its results through teaching, publishing or technology transfer. The mission of the CTPP is also to support and promote the interests of the plastics sector in the field of national and European legislation. Within the consortium, it will play the role of the research and industrial partner associated to the Association of Chemical Industry of the Czech Republic. The involvement of CTPP is important for accomplishing the aims of specific objectives within WP1, specifically within activities 1.1. and 1.2. addressing the questions connected with collecting of post-

Česká technologická platforma PLASTY AO3	
	consumer waste plastics and its smart recycling, including chemical recycling, and addressing the questions connected with replacing fossil resources by renewable materials for the production of plastics.

AquafilSLO, d.o.o. AO4	
Partner number	PP7
Name of the organisation in original language	AquafilSLO, d.o.o.
Name of the organisation in English	AquafilSLO, d.o.o.
Country (NUTS 0)	Slovenija (SI)
Region (NUTS 2)	Zahodna Slovenija (SI04)
NUTS 3	Osrednjeslovenska (SI041)
Street, House number, Postal code, City	Letališka cesta 15 1001 Ljubljana
Legal representative (not applicable - not to be filled in)	
Contact person	
Email	
Telephone	
Partner role	Aquafil has been one of the leading players, both in Italy and globally, in the production of polyamide 6: a landmark in terms of quality and product innovation. The group is leader in the reserach of new production models for sustainable evelopment. The role of AquafilSLO in the project is related to WP1, where sustainable management of plastics will be addressed. More specifically, the challenges of caprolactam production process by using only renewable, plantbased materials to replace petroleum-derived materials commonly used in the nylon industry will be addressed. Based on the principles of the circular economy, nylon waste, such as fishing nets that can no longer be used or waste from textile production that would normally have to be disposed of, will be recycled, and transformed into a new yarn that has the same properties as nylon made from virgin raw materials. A model-based design approach using time scale analysis and characteristic times will be used to optimize process conditions for industrial applications.

Belinka Perkemija, d.o.o. AO5	
Partner number	PP7
Name of the organisation in original language	Belinka Perkemija, d.o.o.
Name of the organisation in English	Belinka Perkemija, d.o.o.
Country (NUTS 0)	Slovenija (SI)
Region (NUTS 2)	Zahodna Slovenija (SI04)
NUTS 3	Osrednjeslovenska (SI041)
Street, House number, Postal code, City	Zasavska cesta 95 1231 Ljubljana – Črnuče
Legal representative (not applicable - not to be filled in)	
Contact person	
Email	
Telephone	
Partner role	The role of Belinka Perkemija d.o.o. in the project is related to WP2. More specifically, the challenges of CO2 capture by carbonation of lime will be addressed using microstructured reactors to achieve process intensification. Studies at the controlled conditions in the microstructured devices will allow finding the conditions that enhance the CO2 uptake yield and kinetics in the carbonation process. This case study will attempt to provide more insight into the mechanisms of carbonation of lime, using also green solvents to reduce carbon footprint. This work is in line with the regional efforts in nature conservation and a clean environment. Belinka Perkemija d.o.o. is a member of the European Helios Group, one of the top 10 coating companies in the European market and part of the KANSAI PAINT Group and was also presented with the FDI Award Slovenia 2020 in the category “green” for their contribution to this field.

Egis Gyógyszergyár Zártkörűen Működő Részvénytársaság AO6	
Partner number	PP4
Name of the organisation in original language	Egis Gyógyszergyár Zártkörűen Működő Részvénytársaság
Name of the organisation in English	Egis Pharmaceuticals Plc
Country (NUTS 0)	Magyarország (HU)
Region (NUTS 2)	Budapest (HU11)
NUTS 3	Budapest (HU110)
Street, House number, Postal code, City	Keresztúri út 30-38 1106 Budapest
Legal representative (not applicable - not to be filled in)	
Contact person	
Email	
Telephone	
Partner role	EGIS Pharmaceuticals is one of the leading companies in its sector in Hungary. The operations of EGIS, which are international, cover all areas of the pharma industry from research through development and manufacturing to marketing. The complementarity of EGIS as the associated partner and Servier as the corresponding project partner origins from their different activities. By involving EGIS in the joint activities they can bring in the unique view and expertise of a medium-sized pharma company, which has been operating in the Central European region for over a century. In the running of the project we would count on the active collaboration of EGIS experts in the following areas: i) Identification of the major obstacles that hinder the creation of chemical processes that are both environmentally friendly and economically sustainable ii) Identification of break-through points, which might lead to a non-incremental improvement in the eco-sustainability and greenness of our chemical processes. iii) Collaboration in the execution of studies that can result in more atom economic synthetic transformations in the industrial research environment (resource provided by SRIMC)

Egis Gyógyszergyár Zártkörűen Működő Részvénytársaság AO6	
	iv) Collaboration in the execution of studies that help to switch from common to more environmentally-friendly chemicals in the industrial research environment. (resource provided by SRIMC) EGIS can also participate actively in the exploitation of the project's deliverables. As a company with significant chemical production and a commitment to a sustainable economy, the results of the joint activities, as well as the results arising from the other actions within this proposal could find their way into everyday use at EGIS. The contribution of EGIS falls into activities 2.2. (WP2), 3.2. and 3.3. (WP3).

C - Project description

C.1 Project overall objective

Programme priority specific objective (as selected in section A.1.).

SO2.3: Taking circular economy forward in central Europe

Project overall objective

Please define the overall objective of the project.

- Make sure that it clearly contributes to the selected programme specific objective.
- The overall objective should provide the general context for what your project aims to achieve.
- It should describe the broader goal of the project for the benefit of its target group(s) and should point to the results (change) to be achieved by the project.

The project aims to unify the industrial and academic sectors to achieve greener chemical production in Central Europe by developing strategies and solutions for more sustainable processes and resource management, which will result in reduced pollution and minimized environmental damage in the region. Moreover, our intention is to encourage the regional chemical companies to adopt circularity principles in production and to help a better reception of the chemical industry by the general public.

C.2 Project relevance and context

C.2.1 What are the territorial challenge(s) that will be tackled by your project?

Please describe which specific challenges and needs are addressed by your project and why they are relevant for the overall programme area, (please refer to chapter 1 and 2 of the Interreg CENTRAL EUROPE Programme document).

Ever since the industrial revolution, chemistry has predominantly been following a linear make-use-dispose path of production, being dependent on large amounts of raw materials (to a great extent petroleum-derived) and toxic chemicals, and, at the same time, creating significant amounts of waste and emissions. The chemical industry, therefore, carries an enormous environmental burden, and its reputation among the general public is extremely poor. This has led to the relocation of a big part of chemical production to Asia, which has a negative political and sociological impact on Central Europe, reducing the number of jobs in the region and creating a dangerous dependence on other countries, creating vulnerabilities in supply chains. Moreover, this fact further contributes to the growing problem of global climate change due to less stringent environmental regulations in Asian countries, and by increasing carbon dioxide emissions and energy consumption as a result of longer transportation routes.
Yet another problem is the behavior of consumers who overuse products of the chemical industry, like plastics and medicines, which leads to accumulation of huge amounts of plastic waste, including microplastics, in the environment as well as to larger production of waste in general, and even greater greenhouse gas emissions.
To change this unfortunate state of the local chemical industry, behavioral change is necessary both in the industrial sector and in the public. We believe that solving the described challenges is not only of great importance in general but also highly relevant for the Interreg CE Programme, more specifically for the specific objective 2.3, since the need for more eco-friendly production processes and smarter waste management is shared by all the Central European countries.

C.2.2 How does the project tackle identified challenges and needs and what is new about the approach of your project?

Please describe the project approach chosen to address the challenges and needs described above. Please also explain how the approach goes beyond existing practice in the sector/programme area /participating countries demonstrating the innovativeness of the approach.

GreenChemForCE project will deal with the above-mentioned territorial challenges by involving a transnational consortium of experts from academia and industry, who will identify the particular problems, develop strategies to tackle them, and translate the results into practical solutions that will be implemented by the partner chemical companies. The partner organizations will be responsible for the dissemination of the solutions between other chemical producers in the Central European area.
As to the specific challenges described above, we will assess resources, waste, and emissions of chemical processes used by the local industrial partners and find ways how to minimize the overall amount of waste generated by the companies and how to valorize the remaining waste by the recovery and reuse, especially in the case of the environmentally critical raw materials, or by using them as a carbon source in the production of other fine chemicals. The latter use will be sought e.g. for carbon dioxide (CO_2) which will thus be utilized as a reagent in chemical production instead of being released into the atmosphere.
These solutions, when implemented, will not only help preserve the ecosystems surrounding the involved chemical companies but thanks to the reduction of costs due to resource reduction and process efficiency increase, they will be attractive to other producers in the sector. Thus, we believe that disseminating our solutions in the chemical industry by our partner organizations will spread sustainable practices throughout the Central European regions. Moreover, this project will contribute to returning chemical production back to Europe because the developed cost-effective processes can compensate for higher labor expenses in the region compared to Asian countries.
The enhancement of environmentally conscious production also represents an important condition to improve the public reputation of the regional chemical industry. At the same time, by raising public awareness of the environmental problems, we hope to simultaneously achieve some improvement in consumer behavior which is partially caused by the lack of information.
The innovativeness of the project lies in the collaborative approach of different types of organizations that goes beyond one region or country. Although many of the technologies for green chemistry are known on a laboratory scale, their application in the industry is still very limited, and especially SMEs cannot afford to develop the new technologies alone. Therefore, in order to promote change in the whole region and to achieve the implementation of eco-friendly processes in the companies throughout the Central European area, strong transnational cooperation, such as the one proposed in the GreenChemForCE project, is essential.
To the best of our knowledge, there are no Interreg CE projects focusing on chemistry issues, while those European projects that are chemistry-related are of either strictly research-oriented, e.g. ERC projects, or predominantly knowledge-transfer nature (COST).

C.2.3 Why is transnational cooperation needed to achieve the project objectives and results?

Please explain why the project objectives cannot be efficiently reached acting only on a national/regional /local level and describe what is the added value for the partnership and the project area in taking a transnational cooperation approach.

The challenges this project deals with are common for the whole Central Europe, but there can be some country-specific details. Transnational cooperation enables to collect the data from more chemical companies in more countries, so the developed strategies can meet the needs of various producers and tackle the problems in a larger area within Central Europe.
The international cooperation of more expert teams allows for sharing their expertise, taking into account different viewpoints in order to set up international standards and priority orders and come up with solutions that are more equitable and sustainable in the long term. The unique experience of the involved partners will enable a more detailed assessment of the studied problems, ensuring, in turn, efficient progress towards project goals. To some extent, the techniques and instrumentation can also be shared among the partners. Last but not least, transnational collaboration is necessary for the effective dissemination of the results and green chemistry principles in all the involved Central European countries.

C.2.4 Who will benefit from your project outputs and results?

Please select the target groups from the drop-down list, which are relevant for your project. For each of them please provide a more detailed specification and explain how they will benefit from your project outputs and results. Please ensure consistency with the target groups defined in the work plan (section C4).

Target group	Specification
Enterprise, except SME	Enterprises can benefit in many ways from developments in green and circular chemistry achieved within the GreenChemForCE project, for example, i) an improved competitiveness of chemical manufacturers and their customers; ii) increased consumer sales by earning and displaying a safer-product label (e.g., safer choice labelling); iii) better performance so that less product is needed to achieve the same function; iv) reduced waste, eliminating costly remediation, hazardous waste disposal, and end-of-the-pipe treatments; v) fewer synthetic steps, often allowing faster manufacturing of products, increasing plant capacity, and saving energy and water; vi) higher yields for chemical reactions, consuming smaller amounts of feedstock to obtain the same amount of product; and, vii) a long-lasting and enduring positive image change of the chemical industry that goes beyond mere greenwashing.
SME	Implementation of circular chemistry technologies as green alternatives will lead to significant improvement of process parameters. Although many of the technologies for green chemistry are known on a laboratory scale their application in industry worldwide is still very limited, and not every company, especially SME can afford to develop the new technologies alone. SMEs will thus strongly benefit from the distribution of know-how in the form of best solution manuals, and from the dissemination through open innovation workshops.
Higher education and research organisations	Academia is one of the key stakeholders and will benefit from the scientific aspects, the exchange of know-how solutions and from establishing strong relations for future collaborations, leading to follow-up projects within the frame of Horizon Europe, COST actions or comparable transnational programs. The GreenChemForCE project will also facilitate interaction and information exchange among academic institutions and industrial communities in order to support potential technology transfers. Additionally, the interconnection with industrial partners will provide the involved universities with the opportunity to bridge fundamental research with applications at a higher technology readiness level.
General public	One of the critical issues for social sustainability of the GreenChemForCE project will be public acceptance of circular chemistry systems and products. As this is a developing technology, it is to be expected that the public in Europe has a low level of awareness of these results. Such a poor understanding of green and circular chemistry within society may hinder its future deployment. However, it also means that there is considerable potential for public perception to be shaped by relevant stakeholders, mostly universities. Ultimately, the greatest benefit for the participating regions will lie in the improvement of the environment, minimizing the risk of environmental accidents and "returning" chemical production processes to the Central European regions and thus increasing their competitiveness and independence.

C.2.5 How does the project contribute to wider strategies and policies?

Please indicate to which strategies and policies your project will contribute and briefly describe in what way.

Strategy	Contribution
European Green Deal	The project will effectively contribute to achieving the targets set in Chemical Strategy for Sustainability being a part of the European Green Deal. i) The development of greener methods to produce biodegradable plastics is aligned with the European Council policy to reach the target of recycling 50% of plastics packaging by 2025 and 55% by 2030 in the European Union. By producing packaging plastics that can be easily recycled, the goal is to decrease the amount of landfill in central Europe (work package 1). ii) Minimization of waste and redesigning of industrial systems will contribute to the new EU Circular Economy Action Plan (2020) by reducing toxic waste in chemical processes, reducing energy requirements and consumption of precious transition metals, which also constitute key points of sustainable chemistry (work package 2 and 3). iii) The introduction of greener solvents are key requirements for sustainable development in the production of fine chemicals and advanced materials with new or improved physical and chemical properties. Additionally, the development of synthetic processes avoiding the generation of waste materials or, if this is not possible, finding ways to convert these to value-added compounds is consistent with the goals of green, and specifically circular, chemistry (work package 2 and 3).

C.2.6 How will your project make use of synergies with EU and other projects or initiatives?

Project or initiative (including funding instrument, if applicable)	Synergies foreseen
Chemmultimodal (Multimodal Transports in the Chemical Industry in Central Europe, SCHP CR)	Chemmultimodal was focused on the more effective and safe transport of chemical goods. Products analysed with the current project are applicable also to outcomes of the Chemmultimodal project.
Biomates (Reliable Biobased Refinery Intermediates, SCHP CR)	The Biomates project was focused on the development of motor fuel based on renewable sources. Products analysed with the current project are extending the scope and options for such an application.

Project or initiative (including funding instrument, if applicable)	Synergies foreseen
BLUETOOLS - a 4-year EU HORIZON (HE-CL6-2022-CIRCBIO-01-07) project (SRIMC)	A 48-month project whose objective is to unravel the potential of the marine microbiome for healthier oceans and the Blue Bioeconomy. The activities include the identification of new biocatalysts of marine origin for industrially relevant synthetic transformations. The identified enzymes could be applied directly in some of the planned activities of this project.
PLATIRUS, H2020-SC5-2016-2017 (TU Wien)	The project dedicated to platinum group metals recovery using secondary raw materials brought know-how for the extraction of valuable components from industrial waste that can be directly applied to this project.
COLABATS, FP7 ENV.2013.6.3-1 (TU Wien)	The developed processes for the recycling of the critical metals cobalt and lanthanides and key economic metals nickel and lithium, from waste batteries will provide input for waste valorization in this project.
CARBOFLOW, H2020 I.1. ERC-2020-COG Consolidator Grant (TU Wien)	Development of catalytic procedures for streamlined CO2 conversion brings key know-how on catalyst design and continuous flow processes, valuable tools for process intensification, a key aspect in the GreenChemForCE project.
GreenDigiPharma – Horizon Europe MSCA Doctoral network project (UL)	The project on Green and digital continuous-flow pharmaceutical manufacturing (2023-2026) offers a significant opportunity to boost productivity, improve competitiveness and reduce the large environmental footprint of the pharmaceutical industry by promoting the adoption of novel technologies, i.e. flow synthesis instead batch processes, heterogeneous nano and biocatalysis in lieu of homogeneous catalysts, renewable carbon sources, novel purification methods, and digitalization tools. Synergies with WP3 of this proposal are expected.
BioInDES – Slovenian – Croatian project ARRS J4-4562 (UL)	In the project Biocatalytic process intensification using deep eutectic solvents in microflow systems for sustainable waste valorization (2022-2025), a continuous bioconversion of CO2 into methanol and of furfural to its high-value derivatives using deep eutectic solvents (DES) and immobilized biocatalysts in microflow systems comprising multienzymatic reactions and integrated product removal is envisaged. Synergies with WP3 of this proposal are expected.
H2O2 on a chip – Slovenian project ARRS L2-3161 (UL)	The outcomes of the project H2O2 on a chip: intensification of continuous synthesis of high-purity hydrogen peroxide by application of an electrocatalytic microreactor funded by the Slovenian Research Agency (2021-2024), which is performed in collaboration with Belinka Perkemija, might be further upgraded in this project (WP2).

Project or initiative (including funding instrument, if applicable)	Synergies foreseen
COMPETE - H2020 ERA Chair project (UL)	In 2019, a Chair of Micro Process Engineering and Technology – COMPETE centre was established at UL, aiming to build on and extend existing expertise within UL to form a new knowledge centre that will significantly improve research performance in the field of micro-process engineering, microfabrication, and micromachining. The outcome of the project that has finished in 2022 might be upgraded in WP2 and WP3 of the current project.
SRIP CE (Research and Innovation Partnership – Networks for the Transition to a Circular Economy) - a long-term project (CCIS)	SRIP CE is a connection of all relevant stakeholders in Slovenia aiming to transition to circular economy. CCIS is the manager, NIC (National Institute of Chemistry, Slovenia) is the co-founder. It focuses its activities towards three important areas for the proposed project, Sustainable energy, Biomass and alternative raw materials and Green processes and technology. It functions as innovation cluster and provides advocacy to its members. We will make use of the experiences of SRIP as well as intertwine the already on-going activities.
REBUILT- a 3-year Interreg Cetral Europe project (CCIS)	The synergy between projects could address plastic waste management and promote a circular economy through knowledge exchange, research, and pilot projects, seeking practical solutions for plastic waste recovery, advocating for stronger regulations, raising awareness, and building capacity to reduce plastic waste to create economic opportunities from recycling.

C.2.7 How does your project build on available knowledge?

Please describe the experiences/lessons learned that your project draws on, and other available knowledge your project capitalises on. If relevant, please specify the projects to be capitalised and which project partner(s) have been involved.

All consortium members are global players in their field. The GreenChemForCE project will, among other sources, benefit from the experience and findings of various R&D projects and integrate their results into new, economically viable processes. The partners' extensive background and know-how, including the lessons learned from their participation in many international projects, as described above (C.2.6), has bestowed them with the expertise required for the success of this project. Their expertise within the fields of green chemistry and sustainability covers the areas of catalysis, material chemistry, biorefinery, or the design of waste-minimization strategies on a laboratory scale. Laboratory and associated infrastructure, partly funded by projects, and partly by core funding, creates the perfect environment for this collaboration and cements the experience of all partners with different technologies at the interface between research and industry.
Although all non-industrial partners are experienced in long-term collaboration with the chemical industry at the local scale, this transnational project will enable more efficient knowledge transfer and revitalization of the chemical industry across a wider area within Central Europe.

C.3 Project partnership

What is the rationale of the partnership composition and how are partners complementary to each other? Please describe the structure of your partnership and why the involved partners are needed to implement the project and to achieve the project objectives.

The transnational GreenChemForCE consortium is well-balanced in relation to both geographical distribution and specific objectives of the project, allowing the maximum integration of knowledge, expertise, and experience from all the partners and countries involved. The consortium connects academic and industrial partners, who will work together to develop action plans and solutions for the greener chemical industry, with sectorial business-supporting organizations which will disseminate the results among other non-partner chemical companies.
University partners can offer broad theoretical knowledge and outreach to students and the general public, therefore will develop new sustainable methods for industrial application, raise public awareness of green chemistry principles, and educate both students and end consumers in environmentally-friendly behavior. Generally, universities already have some smart solutions, which could improve the state of the processes used in the chemical industry, but are lacking strong bonds with the industry which impairs their practical use/implementation. The goal of this project is to make such bonds and retain them even after the project's lifetime.
Industrial partners have the best knowledge of the current situation of chemical production, therefore will help universities to formulate particular needs and cooperate in developing solutions. Moreover, they will implement these solutions to ignite the change in the whole sector.
The involved organizations, a business support organization, and a sectoral agency, have close connections with a number of chemical companies, therefore being in an ideal position for disseminating the results to revive the chemical industry in the whole Central European area, making it more sustainable and environmentally responsible. They have wide experience in organizing workshops for industry representatives and have formed media partnerships which will help to publicize and promote the outcomes of this project. Cooperation of these organizations with universities, enabled by this project, will widen the impact of both sectors.

C.4 Project work plan

WP number	Work package name
WP1	Sustainable management of plastics
WP2	Carbon dioxide management in industry: emission reduction and utilization
WP3	Streamlining processes for the production of fine chemicals

C.4.1 Work package 1

Workpackage number

WP1

Work package title

Sustainable management of plastics

Objectives

Please define one project specific objective that will be achieved by your project through the implementation of the work package. The specific objective should be:

- realistically achievable during the project lifetime;
- specific;
- be verifiable and measurable.

Project specific objective

The specific objective is to tackle the problems related to the management of plastic material. On one hand, the production of plastic material is not a sustainable process, as it relies widely on non-renewable resources and is perceived rather negatively by the broader public. On the other hand, the overuse of plastics by end consumers and the cumulation of plastic waste is an alarming problem of modern society. Therefore, behavioral change in the entire production-consumption system is necessary. Transformation of the linear make-use-dispose systems to a closed-loop circular system as well as the utilization of sustainable resources is a logical step. Within this work package, this will be tackled on several levels, including the identification and analysis of the problems, and developing the strategic and technical solutions by means of case studies, dissemination of the gained knowledge, and training of the next generation of experts.

WP lead: CCIS.

In addition, please define one or more communication objective(s) that will contribute to the achievement of the specific objective and include reference to the relevant target group(s). Communication objectives aim at changes in a target audience's awareness and behaviour.

Communication objective(s) and target audience

The communication between the regional chemical industry and the project consortium will be conducted by the involved organizations (SCHP CR and CCIS). They will collect the data from the companies (which will be crucial for activity 1.1.) and disseminate the outputs amongst them, with the aim to encourage both partner and non-partner chemical companies in Central Europe to take up the developed strategies and solutions.
The gained knowledge will also be spread to experts in the field, by publishing in open-access scientific journals, to expand our target audience further.
The dissemination to the broader public will be taken care of by academic institutions with the intention to raise public awareness about the activities and contribute to behavioral change in the consumers. Since the universities are involved in the training of the new generation of experts, they will increase their adherence to green chemistry principles.

Activities

Please describe the activities foreseen in order to achieve the above project specific objective and related communication objective(s) considering also the involvement of the relevant target groups as identified in section C2.4.

Activity 1.1	
Title	Analysis of the current state and new strategies for sustainable development
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24
Description	Lead: CCIS Full members: SCHP CR, CCIS, UL Associated member(s): Czech Technology Platform Plastics The focus of activity 1.1. is the analysis of the current state of plastic management practices within the industry and development of a joint strategy for the valorization of plastic material waste, as well as for the sustainable de novo production of plastics in Central Europe. The cooperation between the academic and industrial partners will aim to analyze and identify the existing problems. For example, the linear make-use-dispose streams, leading to plastic waste production and cumulation, will be identified, and new strategies will be developed aiming for their substitution with the

Activity 1.1	
	closed-loop systems (for example chemical recycling technologies) and the creation of circular economy value chains. The valorization of the byproducts formed during the production of plastic products will be analyzed and explored. Further attention will be paid to the sustainable product design. The key consideration will be the identification of the critical resources for plastic production in the region and their possible replacement with sustainable non-petroleum sources. The CCIS will be the leader of the activity, other participating partners will be UL, CU (peer review) as academic representatives, and Czech Technology Platform Plastics (as a member associated with SCHP CR). The developed action plans and strategies will be incorporated into the organization's agendas and their effects on the production of plastics in the involved chemical companies will be manifested after the end of the project. Moreover, the incorporation of strategies by organizations outside the project consortium is expected. The outcomes of the analysis will also serve as the base for the development of action plans and jointly developed strategies, which will tackle the above-outlined problems.

Deliverables 1.1

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.1.1.1	Analysis report	The deliverable will be provided as an analysis report. In the report, the weak spots of the regional chemical industry, which are related to the production of plastics will be described.	Period 2 , 7 - 12
D.1.1.2	Strategy document	The deliverable will be provided as a written strategy document, which will serve as a guideline for further tackling the problems relevant to the management of plastics.	Period 4 , 19 - 24

Activity 1.2	
Title	Development of sustainable technologies for key plastic components and circularity in plastic production
Start period	Period 1, 1 - 6

Activity 1.2	
End period	Period 5, 25 - 30
Description	Lead: UL Full members: UL, SCHP CR, CCIS Associated member(s): Czech Technology Platform Plastics, AquafilSLO, d.o.o. Activity 1.2. will tackle existing problems that have already been identified by the project partners and their associate partners, by developing technologies fulfilling the principles of circular economy, sustainable project design, and waste valorization. The case studies will be carried out, related to the production of the strategic plastic material. The state-of-the-art principles of green chemistry will be utilized within the production of key components for the preparation of nylon-based materials, namely polyamide 6 and caprolactam. In particular, the production of caprolactam from sustainable sources, other than petroleum-derived sources, will be explored. The technology will be developed in collaboration between academic and industrial partners (UL, Aquafil). In addition, the terminal, non-usable nylon products of the linear make-use-dispose chains (nylon-based waste, such as nylon textiles, fishing nets, etc.) will be explored as a source to produce new materials, creating a model for the circular economy value chains and closed-loop systems. These pilot actions will serve as a base for the development of broader solutions that will be disseminated across the borders by SCHP CR, Czech Technology Platform Plastics, and CCIS and implemented by the chemical industry in the Central European region which will improve the sustainability of plastic production in the region.

Deliverables 1.2

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.1.2.1	Pilot action report	The report on feasibility of the use of sustainable sources in the production of new plastic materials, including recycled nylon-based waste, will be carried out. It will summarize results of the lab-scale experiments which will provide the basis for the development of the solution.	Period 3 , 13 - 18
D.1.2.2	Report on i mplemente	The deliverable will be provided as a case study report on the use of non-petroleum sources and nylon waste use as a	Period 5 , 25 - 30

Deliverables 1.2			
Deliverable Number	**Deliverable title**	**Deliverable description**	**Delivery period**
	d solution	starting materials for producing new plastic material. The report will also describe how the solution was disseminated among other organizations.	

Outputs

Please define the outputs which will be realised through the activities foreseen in this work package and link them to the related programme output indicators.

Output number 1.1	
Output title	Expert consortium for sustainable plastic management in Central Europe
Programme output indicator	RCO87_2.3: Organisations cooperating across borders
Measurement unit	organisations
Output target value	15,00
Delivery period	Period 1, 1 - 6
Output description	Organizations of various statuses from different countries (universities, industrial enterprises, business support organizations, and public sectorial agencies) connect to streamline the current situation related to plastic material management in the Central European region.

Output number 1.2	
Output title	Strategies for sustainable plastic management in Central Europe
Programme output indicator	RCO83_2.3: Strategies and action plans jointly developed
Measurement unit	strategy/action plan
Output target value	1,00
Delivery period	Period 4, 19 - 24
Output description	The strategies developed in a transnational academic-industrial cooperation will identify problems in nylon production in the CE region and provide means to improve its current unsatisfactory state. The international nature of the project will

Output number 1.2	
	enable identification of appropriate target audiences in more countries and dissemination of the plans for sustainable production of plastic materials among them, which will lead to a wider implementation of green practices. (deliverables D.1.1.1, D.1.1.2)
Output number 1.3	
Output title	Pilot actions for sustainable plastic management in Central Europe
Programme output indicator	RCO84_2.3: Pilot actions developed jointly and implemented in projects
Measurement unit	pilot actions
Output target value	1,00
Delivery period	Period 3, 13 - 18
Output description	Pilot actions jointly developed will include planning of experiments and testing of procedures and approaches in laboratory scale to identify the sustainable starting materials for nylon production and methods for recycling of nylon waste. This will lead to the outline of methods suitable for developing the solution in the next phase of the project and serve as a showcase for the implementation of sustainable technologies and circularity within plastic production. (deliverable D.1.2.1)
Output number 1.4	
Output title	Solutions for sustainable plastic management
Programme output indicator	RCO116_2.3: Jointly developed solutions
Measurement unit	solutions
Output target value	1,00
Delivery period	Period 5, 25 - 30
Output description	The jointly developed technological solution for the sustainable and circular management of nylon material will be implemented in industrial processes by an organization within the consortium. The results will also be disseminated to other industrial organizations and appropriate stakeholders, to

Output number 1.4	
	enable a broader change in the plastics production in Central Europe. (deliverable D.1.2.2)

Investments

C.4.1 Work package 2

Workpackage number

WP2

Work package title

Carbon dioxide management in industry: emission reduction and utilization

Objectives

Please define one project specific objective that will be achieved by your project through the implementation of the work package. The specific objective should be:

- realistically achievable during the project lifetime;
- specific;
- be verifiable and measurable.

Project specific objective

The increase of the atmospheric carbon dioxide (CO_2) concentration is an alarming issue and the consequences resulting from it already have a dramatic impact on the regional environment and beyond. The local chemical industry contributes to the production of CO_2 and the amount of the gas is steadily increasing over the past years. The specific objective of this work package is to analyze the current state of CO_2 emissions in the regional chemical companies, and jointly develop strategies to reduce CO_2 waste production, together with technologies for CO_2 utilization as a carbon source to produce valuable chemicals through the use of circular economy principles. The long-lasting goal of this project is to achieve a general improvement in the CO_2 management in the Central European region.

WP lead: SCHP CR.

In addition, please define one or more communication objective(s) that will contribute to the achievement of the specific objective and include reference to the relevant target group(s). Communication objectives aim at changes in a target audience's awareness and behaviour.

Communication objective(s) and target audience

The communication between the regional chemical companies with SCHP CR and CCIS will ensure the data relevant to activity 2.1. The communication channel will reverse to disseminate the outputs from the consortium to the target audience, primarily the local chemical companies, via available channels (contributions to specialist periodicals, newsletters, workshops, websites, etc.). Raising awareness about our activities to the general public will also be a part of the communication package and it will be ensured by academic institutions. Communication with the public will be important to improve the generally bad reputation of the local chemical industry in their eyes.
The academic institutions will disseminate the achieved results amongst the experts as well, by the means of publishing in open-access journals, and it will provide the training of the next generation of specialists, which will ensure wider adoption of circularity concepts among the future employees of chemical companies.

Activities

Please describe the activities foreseen in order to achieve the above project specific objective and related communication objective(s) considering also the involvement of the relevant target groups as identified in section C2.4.

Activity 2.1	
Title	Analysis of carbon dioxide linear and circular
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24
Description	Lead: SCHP CR Full members: SCHP CR, CU, TUW, CCIS Associated member(s): CO2 Czech Solution Group The focus of the activity is the analysis of the current state and development of a joint strategy for the management of CO2 production and utilization within regional chemical companies. The activity is divided into two basic stages. In the first stage, the analysis of the current state will be carried out in a transnational collaboration of academic and industrial experts. The analysis will be focused on the identification of the critical points related to the production of CO2 across the sectors of the chemical industry. In the second stage, a strategy to minimize CO2 generation in the regional chemical producers and the applicability of carbon capture and utilization (CCU) technologies will be outlined.

Activity 2.1	
	SCHP CR will be the leader of the activity, coordinating the particular action steps. The CCIS and SCHP CR (together with their associated partner CO2 Czech solution group) will play a crucial role in collecting the relevant data from the portfolio of their collaborating industrial subjects. Academic institutions will contribute to both the analysis and the design of effective problem-solving approaches. The developed strategies will be implemented by the chemical enterprises during the project and they will take effect in a more distant future.

Deliverables 2.1

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.2.1.1	Analysis report	A report on the current state of CO2 emission production and utilization will be provided. The weak points will be pointed out.	Period 2 , 7 - 12
D.2.1.2	Strategy document	The strategy document report will be written, which will serve as a guideline for the greener and sustainable management of CO2, regarding its emission, capture, and utilization.	Period 4 , 19 - 24

Activity 2.2	
Title	Technologies towards atom circularity in CO2 management
Start period	Period 1, 1 - 6
End period	Period 5, 25 - 30
Description	Lead: TUW Full members: SCHP CR, UL, TUW, VTL, CCIS, CU, Zentiva, SRIMC Associated member(s): CO2 Czech Solution Group, Belinka Perkemija, EGIS Pharmaceuticals Activity 2.2 is focused on the development of sustainable technologies for CO2 management. One approach will aim at the development of advanced CCU technologies using renewable naturally abundant materials or biotechnologies. The other approach to reduce CO2 emissions will be focused on the revalorization of byproduct waste formed in the production of fine chemicals, such as active

Activity 2.2	
	pharmaceutical ingredients (APIs). The decreased production of gas emissions in the latter approach will be achieved by minimizing the incineration of chemical waste, which will be reused in the production of other chemical products instead. The experts from academia (UL, TUW, CU) will collaborate with full and associated industrial partners (Zentiva, SRIMC, Belinka Perkemija, VTL) to develop solutions.

Deliverables 2.2

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.2.2.1	Pilot action report	The deliverable will be provided as a feasibility study report on the utilization of the technologies towards atom circularity in CO2 management and reduction of CO2 waste. The data obtained during the testing phase, which will be later used in the development of the solution, will be provided.	Period 3 , 13 - 18
D.2.2.2	Report on i mplemente d solution	A case study report will be provided, describing the development and implementation of the solution that will lead to the reduction or reuse of CO2 emissions in the chemical company. Dissemination of the solution to other organizations will be included as well.	Period 5 , 25 - 30

Outputs

Please define the outputs which will be realised through the activities foreseen in this work package and link them to the related programme output indicators.

Output number 2.1	
Output title	Strategies for low carbon footprint chemical industry in CE
Programme output indicator	RCO83_2.3: Strategies and action plans jointly developed
Measurement unit	strategy/action plan
Output target value	1,00
Delivery period	Period 4, 19 - 24
Output description	The data on the CO2 emissions of the chemical industry collected in the participating countries will lead to the development of a strategy that will serve as a guideline for reducing the carbon footprint of

Output number 2.1	
	chemical production. The strategy will be disseminated to organizations within and outside the consortium in order to initiate a change in CO2 management in the Central European chemical industry sector. (deliverables D.2.1.1, D.2.1.2)
Output number 2.2	
Output title	Technologies for minimizing CO2 impact on the Central European region
Programme output indicator	RCO84_2.3: Pilot actions developed jointly and implemented in projects
Measurement unit	pilot actions
Output target value	1,00
Delivery period	Period 3, 13 - 18
Output description	Teams of experts will collaborate to develop technologies for carbon capture, utilization, and prevention of CO2 emissions through experimentation and testing of new procedures. These technologies will then be applied in the development of the solution. Chemical companies in Central Europe will be encouraged to implement these methods to further improve the state of CO2 management in the region. (deliverable D.2.2.1)
Output number 2.3	
Output title	Technological solutions for low carbon footprint chemical industry in CE
Programme output indicator	RCO116_2.3: Jointly developed solutions
Measurement unit	solutions
Output target value	1,00
Delivery period	Period 5, 25 - 30
Output description	The solution for the low carbon emissions and CO2 utilization will be developed and implemented through transnational cooperation. The solution will enable greener CO2 management for the industrial partners, and its dissemination to other chemical companies in the region will lead to greater change

Output number 2.3	
	in the future. (deliverable D.2.2.2)

Investments

C.4.1 Work package 3

Workpackage number

WP3

Work package title

Streamlining processes for the production of fine chemicals

Objectives

Please define one project specific objective that will be achieved by your project through the implementation of the work package. The specific objective should be:

- realistically achievable during the project lifetime;
- specific;
- be verifiable and measurable.

Project specific objective

The production of fine chemicals such as active pharmaceutical ingredients (APIs) is essential for Central European regional development. The independence of the region on the import of chemicals from often problematic regions is desired. However, the production of such chemicals is linked to a negative impact on the environment. Thus, the development of sustainable strategies and solutions is necessary. The objective is to address the problems associated with the production of chemicals and minimize the environmental burden linked to it. The weak points will be identified and the pilot plans and strategies will be developed. The collaborations will result in pilot actions which will lead to solutions. Attention will be paid to sustainable and clean product design (i.e. effective synthetic design), chemical waste prevention (solvent-free processes), effective use of resources, or the recovery and reuse of environmentally critical materials (such as heavy metals).

WP lead: UL.

In addition, please define one or more communication objective(s) that will contribute to the achievement of the specific objective and include reference to the relevant target group(s). Communication objectives aim at changes in a target audience's awareness and behaviour.

Communication objective(s) and target audience

The communication between industrial and academic partners, supported by the data obtained by CCIS from their portfolio of companies will lead to the identification of the critical points necessary for the creation of outputs. The transfer of knowledge to the industrial subjects outside the consortium will be ensured by CCIS and SCHP CR, via their established communication channels (workshops, specialist journals, newsletters). This should lead to wider implementation of the developed strategies and solutions and their future application to more processes used by the chemical producers in Central Europe, making them more environmentally conscious. Communication toward a larger group of experts will be ensured by universities via publishing in open-access journals. By propagation of the achieved results and explaining the importance of green chemical production to the general public, the industry will demonstrate its commitment to sustainability and improve its public perception.

Activities

Please describe the activities foreseen in order to achieve the above project specific objective and related communication objective(s) considering also the involvement of the relevant target groups as identified in section C2.4.

Activity 3.1	
Title	Current state analysis and strategies towards greener fine chemical production
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24
Description	Lead: CU Full members: CU, SCHP CR, CCIS Associated member(s): The core of Activity 3.1 is the analysis of current challenges in fine chemical production and industrial R&D and the development of a common strategy for streamlining the processes with an emphasis on the reduction of waste and sources. The planned collaboration between academic and industrial partners will include an analysis of environmental weaknesses in fine chemical manufacturing processes and the identification of existing problems on a regional basis. In addition, strategies on how to tackle these problems will be sought, for example, the production of fine chemicals independent on petroleum products,

Activity 3.1	
	eliminating the use of toxic reagents and solvents, or difficult-to-remove protecting groups that lead to the generation of large amounts of waste. The rate of recycling and recovery of resources, especially critical raw materials, during these processes, will also be analyzed. A key aspect will be the identification of critical sources of waste and pollution from chemical processes in individual regions and their possible reduction (ideally elimination) using solvent-free and environmentally benign production processes. The leader of activity 3.1. will be CU. The developed action plans and strategies will be incorporated into the industrial partners' agendas and they will begin to have a practical impact on the industrial processes in the years following the project finalization. Moreover, the incorporation of strategies by fine chemical producers outside the project consortium is expected.

Deliverables 3.1

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.3.1.1	Analysis report	The report will cover the analysis of the current state of chemical production and industrial R&D. The attention will be paid to the environmentally weak spots, which will be identified.	Period 3 , 13 - 18
D.3.1.2	Strategy document	The strategy document will serve the purpose of the guideline for a clean, environmentally benign chemical industry in Central Europe.	Period 4 , 19 - 24

Activity 3.2	
Title	Technologies towards reduction of waste solvents and other critical materials
Start period	Period 1, 1 - 6
End period	Period 5, 25 - 30
Description	Lead: ELU Full members: SCHP CR, CCIS, CU, TUW, UL, ELU, Zentiva Associated member(s): Santiago, EGIS Pharmaceuticals

Activity 3.2	
	The activity will focus on the minimization of chemical waste in the production and industrial R&D of fine chemicals. Solvents are critical materials in chemical production, as well as in research and development activities. One of our goals is to minimize solvent consumption and solvent waste production by utilization of modern technologies, such as solvent-free systems based on ball-milling, or replacement of environmentally harmful solvents by their eco-friendly variants (e.g. aqueous micellar systems). Moreover, technologies allowing scavenging, recovery, and reuse of problematic reaction components (e.g. heavy-metal-based catalysts) will be employed. The technologies will be developed on the basis of the collaboration between academic and industrial partners. The developed solutions will be disseminated by SCHP CR and CCIS to be taken up by the chemical companies.

Deliverables 3.2

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.3.2.1	Pilot action report	The deliverable will be provided in the form of a pilot action report and will focus on the feasibility of the implementation of tested modern technologies and instrumentation leading to the minimization of solvent waste in the production of important chemicals in industrial R&D.	Period 3, 13 - 18
D.3.2.2	Report on implemented solutions	The deliverable will be provided as a report on the implementation of new technologies and experimentation toward the recovery and reuse of environmentally critical chemicals, such as heavy metals or others. We will specify which organizations implemented the solutions into their portfolios.	Period 5, 25 - 30

Activity 3.3	
Title	Advanced technologies towards effective processes
Start period	Period 1, 1 - 6
End period	Period 5, 25 - 30
Description	Lead: SRIMC

Activity 3.3	
	Full members: TUW, CU, Zentiva, SRIMC, UL, ELU, VTL Associated member(s): Santiago, EGIS Pharmaceuticals The activity will focus on streamlining the processes within the production and preparation of fine chemicals, using modern technologies. This will reflect in the elimination of unwanted waste material, minimization of energy inputs, and safer procedures. The technologies applied will rely on biotechnology (where strong expertise can be provided by the partners), utilization of flow rectors, cascade transformations, or synthesis of chiral switches (by which up to 50% less wastes generation can be achieved). The technologies will be developed within a collaboration of academic and industrial partners, who will implement the successful solutions in their processes and results will be further disseminated to the portfolio of industrial companies by SCHP CR and CCIS.

Deliverables 3.3

Deliverable Number	Deliverable title	Deliverable description	Delivery period
D.3.3.1	Pilot action report	The deliverable will be in a form of a feasibility study report of the implementation of modern technologies for process optimization in the production of fine chemicals. The data will be collected through experimentation and will serve a purpose for future solution development.	Period 3 , 13 - 18
D.3.3.2	Report on implemented solutions	We will provide a description of how the selected pilot actions were developed into solutions and implemented by organizations involved. The work will be revolved around using new technologies and methods allowing a greener synthetic design.	Period 5 , 25 - 30

Outputs

Please define the outputs which will be realised through the activities foreseen in this work package and link them to the related programme output indicators.

Output number 3.1	
Output title	Strategies for green production of chemical products in Central Europe
Programme output indicator	RCO83_2.3: Strategies and action plans jointly

Output number 3.1	
	developed
Measurement unit	strategy/action plan
Output target value	1,00
Delivery period	Period 4, 19 - 24
Output description	The strategy for greener, circular, and sustainable production and preparation of fine chemicals will be developed in a joint collaboration of experts within the consortium and distributed among a broader industrial audience. The output is linked to deliverables D.3.1.1 and D.3.1.2.
Output number 3.2	
Output title	Pilot actions for reduction of the waste material in preparation of fine chemicals
Programme output indicator	RCO84_2.3: Pilot actions developed jointly and implemented in projects
Measurement unit	pilot actions
Output target value	1,00
Delivery period	Period 3, 13 - 18
Output description	This pilot action will serve as the foundational pillar for developing solutions aimed at reducing waste in the preparation of fine chemicals.. We will propose, evaluate, and select procedures (such as technically specified conditions, e.g., using encapsulated reusable catalysts), as well as effective instrumentation (e.g., flow reactors, ball milling reactors) applicable for enhancing processes in the desired direction, thereby making them more environmentally benign. (deliverable 3.2.1)
Output number 3.3	
Output title	Reduction of waste in preparation of fine chemicals
Programme output indicator	RCO116_2.3: Jointly developed solutions
Measurement unit	solutions
Output target value	1,00

Output number 3.3	
Delivery period	Period 5, 25 - 30
Output description	The solutions will be jointly developed by consortium members and will be implemented by the involved organizations. This will ensure a greener production of fine chemicals, such as pharmaceutical products. The findings will also be communicated to additional industrial entities outside the consortium, facilitating a wider transformation in fine chemical production across Central Europe. (deliverable 3.2.2)
Output number 3.4	
Output title	Pilot actions for greener preparation of fine chemicals
Programme output indicator	RCO84_2.3: Pilot actions developed jointly and implemented in projects
Measurement unit	pilot actions
Output target value	1,00
Delivery period	Period 3, 13 - 18
Output description	This pilot action will represent a stand pillar for solutions related to the activity. The practical aspects of the output will include experimentation and testing of new procedures and technologies (such as biotechnology, flow processes, cascade transformations, chiral switches, etc.) and the identification of those feasible for the future implementation in solutions. (deliverable D.3.3.1)
Output number 3.5	
Output title	Advanced technologies towards effective processes
Programme output indicator	RCO116_2.3: Jointly developed solutions
Measurement unit	solutions
Output target value	1,00
Delivery period	Period 5, 25 - 30
Output description	The jointly developed technological solution for the sustainable and greener production of fine

Output number 3.5	
	chemicals, such as pharmaceuticals. Solutions will be implemented in industrial processes by an organization within the consortium. We will aim to disseminate the solution among the group of experts from outside the consortium, to promote behavioral change within the production of the chemicals, an enable the greener production of the target products. (deliverable D.3.3.2)

Investments

C.5 Project results

Please select and quantify the relevant programme result indicators to which your project will contribute. For each selected result indicator, please briefly describe the contribution of the project and the relevant project results (change) you expect to achieve through the implementation of the foreseen activities and outputs as defined in the work plan. Please also specify the output(s) which are directly related to this result.

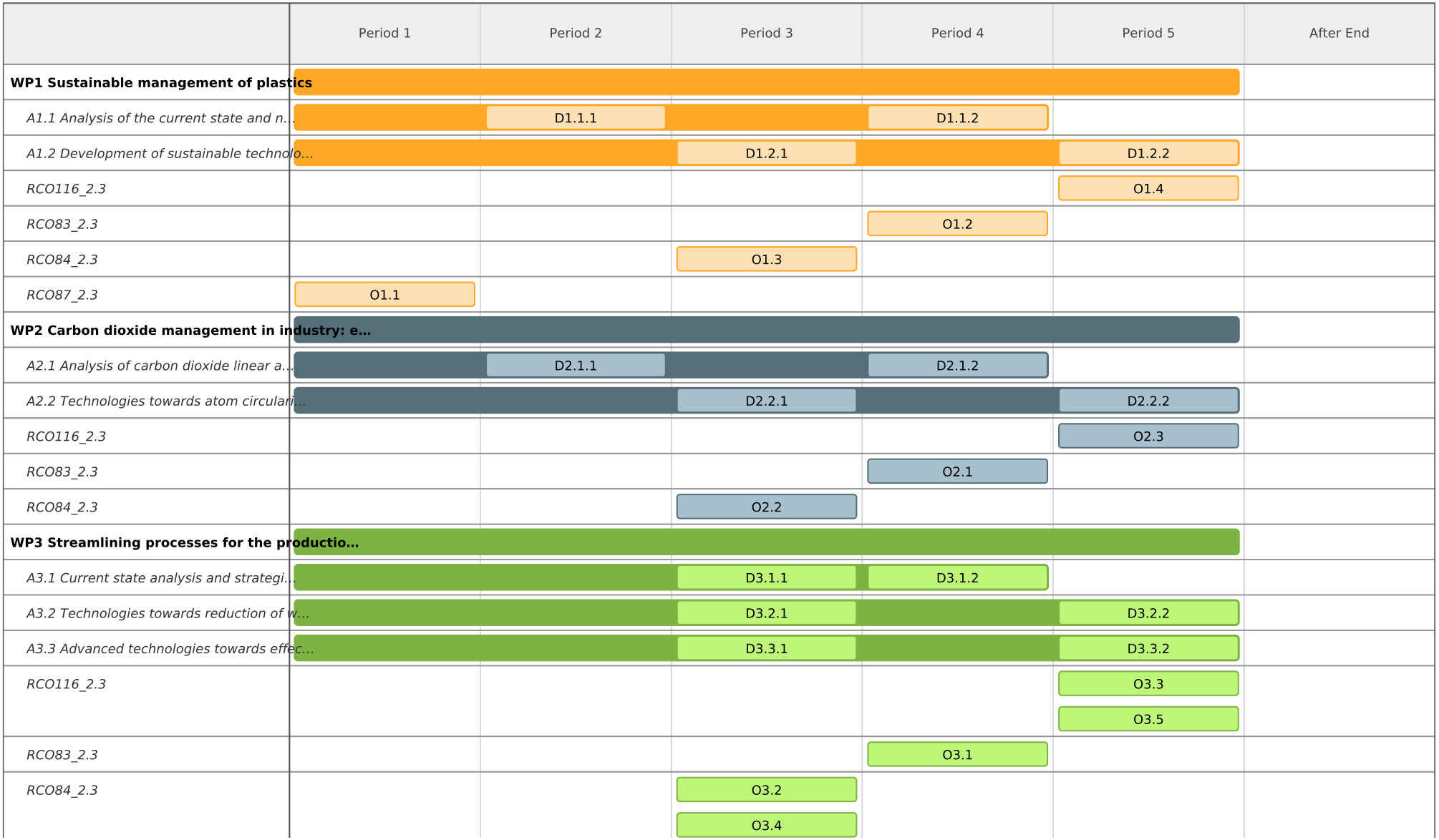
Result 1	
Programme result indicator	RCR84_2.3: Organisations cooperating across borders after project completion
Measurement unit	organisations
Baseline	0,00
Target value	12,00
Result description	The collaboration between the involved subjects is expected to maintain even after the completion of the project, securing the increased knowledge, knowledge transfer, and exchange. It is not granted that the collaboration will maintain between the full consortium of partners, however, it is reasonable to expect that at least partial collaborations will remain. In particular, the collaboration between the involved industrial partners (both project partners and associated partners) with the universities (UL, CU, TUW, ELU), as well as with the business support organizations (CCIS, SCHP CR) is highly likely. Moreover, the possibility arises for new collaborations with the organizations which will be reached during the dissemination of the project outcomes and the organizations involved within the GreenChemForCE project. Such a network will continue in setting up the principles of green chemistry across the chemical industry in the Central European area.

Result 2	
Programme result indicator	RCR79_2.3: Joint strategies and action plans taken up by organisations
Measurement unit	joint strategy/action plan
Baseline	0,00
Target value	3,00

Result 2	
Result description	This result is directly related to the outputs O1.2., O2. 1., and O3.1. The combination of these outputs gives rise to a comprehensive strategy for the clean chemical industry in Central Europe, covering the most problematic aspects in the field, such as sustainability in the production of plastics, CO2 emissions, and chemical waste management. Behavioral change of the stakeholders (involved and outside companies) as well as the end users will be encouraged and triggered, resulting in a better environment in Central Europe. The strategies developed will be taken up by the involved organizations and will become an integral part of their agenda. The lasting of this will exceed the duration of the project and will ensure the dissemination of the strategies across the chemical sector even after the completion of the project.

Result 3	
Programme result indicator	RCR104_2.3: Solutions taken up or up-scaled by organisations
Measurement unit	solutions
Baseline	0,00
Target value	4,00
Result description	This result is directly linked to the outputs O1.4, O2. 3, O3.3, and O3.5. The solutions will include improved management of plastic materials (directly linked to output O1.4), where the end user will be the associated organization Aquafill and the developed technologies will be disseminated to chemical companies in other countries as well. The adopters of the results related to output O2.3 are VTL and Belinka Perkemija, who will aim to adopt the outputs relevant to carbon capture and utilization, as well as other industrial partners who will adopt the solutions developed for minimizing the CO2 emissions. Two solutions linked to outcomes O3.3 and O3.5 will be taken up by the involved industrial partners (full or associated). Moreover, the dissemination of results ensured by SCHP CR and CCIS will aim at the identification of possible users outside the project consortium in order to ensure cross-border implementation.

C.6 Time plan


Period 1
Period 2
Period 3
Period 4
Period 5
After End
WP1 Sustainable management of plastics
A1.1 Analysis of the current state and n...
D1.1.1
D1.1.2
A1.2 Development of sustainable technolo...
D1.2.1
D1.2.2
RCO116_2.3
O1.4
RCO83_2.3
O1.2
RCO84_2.3
O1.3
RCO87_2.3
O1.1
WP2 Carbon dioxide management in industry: e...
A2.1 Analysis of carbon dioxide linear a...
D2.1.1
D2.1.2
A2.2 Technologies towards atom circulari...
D2.2.1
D2.2.2
RCO116_2.3
O2.3
RCO83_2.3
O2.1
RCO84_2.3
O2.2
WP3 Streamlining processes for the productio...
A3.1 Current state analysis and strategi...
D3.1.1
D3.1.2
A3.2 Technologies towards reduction of w...
D3.2.1
D3.2.2
A3.3 Advanced technologies towards effec...
D3.3.1
D3.3.2
RCO116_2.3
O3.3
O3.5
RCO83_2.3
O3.1
RCO84_2.3
O3.2
O3.4

C.7 Project management and communication

In addition to the thematic activities as described in the work plan, you need to foresee adequate provisions for project management, coordination and internal communication.

C.7.1 How will you coordinate and manage your project?

Please describe how the project management on the strategic and operational level will be carried out, including the set-up of management structures, responsibilities and procedures, as well as risk management. Please also explain how the internal communication within the partnership will be organised.

The lead partner (CU) will assume the role of the Project Coordinator and will be responsible for:
i) monitoring project progress and ensuring that all partners are meeting their commitments and deadlines;
ii) guaranteeing that the partners adhere to financial and accounting procedures;
iii) financial and administrative management, ensuring that all project deliverables are completed on time and within budget.
Moreover, the Project Coordinator will communicate with all project partners to make sure that everyone is aware of their roles and responsibilities (these will be set on the kick-off meeting at the beginning of the project), and in time identify potential issues related to partner collaboration and take steps to prevent them.
The Work Package Leaders (WP Leaders) – one for each of the three work packages – will be responsible for carrying out the operational and technical management of their WP, including quality control, managing resources, and reporting to the Project Coordinator on progress and potential deviations from the work plan of their WP. Work package leaders are further supported by activity leaders, that are assigned to each activity according to their expertise and are distributed among all countries for an equal and transnational representation.

The Communication Manager (CCIS) will be responsible for external communication towards the general public and for the coordination of disseminating activities among non-partner chemical companies.
The management structure is planned as follows:
The Project Coordinator will build a management team which will set up a project monitoring plan with a set of milestones, and collect activity and financial reports from partners every 6 months. The management team will meet at least twice a year with the WP and activity leaders to assist with continuous reporting, project reviews, and periodic joint progress reports. More frequent meetings will be held within the individual WPs of the partners involved. These meetings of smaller working groups will be led by the WP Leaders.

C.7.2 Which measures will you take to ensure quality in your project?

Describe the planned approach and processes for quality management, i.e. how the quality of deliverables and outputs will be monitored and ensured, and indicate the responsible partner(s). If you plan to conduct any type of project evaluation, please describe its purpose and scope.

Quality assurance of the project will include an internal review of deliverables and reports, their validation and submission in accordance with the contractual commitments. Activity leaders will oversee the review of technical deliverables within their tasks, WP Leaders will manage the processes within their WP, and the Project Coordinator (CU) will be responsible for the validation and submission of the final review, and for monitoring the project's quality metrics and making improvements if needed. A comprehensive plan will be determined in the kick-off meeting, together with defining the responsibilities of all the partners related to quality management.
The key to ensuring quality will be efficient internal communication which will be established within the consortium, in order to keep all the partners updated on the progress and any relevant issues that would arise. The main communication channels among the project partners will include:
i) a secure website with a structured information database, schedule of events and meetings, and key contact information for each partner;
ii) regular video conferences of WP teams, coordinated by WP Leaders;
iii) ad-hoc meetings of WP teams when necessary to facilitate the work within and between WPs;
iv) reports on progress and agreed actions (published online and communicated by e-mail);
v) six-monthly formal project review meetings.
The Project Coordinator will be responsible for internal communication and distribution of appropriate information (i.e. reports of the meetings and video conferences) to all partners. A secure part of the project’s website will be designed to facilitate the collection, storage and distribution of information.

C.7.3 What will be the general approach you will follow to communicate about your project?

Please describe how your project's communication objectives, as outlined in the work plan, will help with achieving your project's main result(s). Why is communication important? Which common tactics, channels and tools will help the partnership to reach out to and involve its target audiences? How will the project communication coordinator ensure that all project partners are involved and contribute to communication?

Communication activities will include:
(a) Communication from outside to inside the consortium. This communication channel will ensure the access to data necessary for successful fulfillment of the aims of the project. The data will be mainly collected by CCIS an SCHP CR and used by the experts from the consortium for delivering the delineated results.

(b) Dissemination of the results. Communication of the project activities will be carried out mainly via internet platforms (project webpage, webpage of project partners, social media, such as LinkedIn, or others), publishing in specialist periodicals or newsletters, or by organizing events with the target audience. We will aim to communicate our project mainly to:

(i) expert groups. By utilizing their well-established communication channels, both CCIS and SCHP CR will transfer knowledge to other industry stakeholders, regional companies, and industry experts with decision making capabilities, ensuring the broader implementation of the strategies and solutions developed within the project frame. This dissemination process aims to encourage more chemical producers in the Central European region to embrace environmentally conscious practices. SCHP CR associates more than 120 chemical companies in Czech Republic and it is a part of CEFIC (European Chemical Industry Council), through which the dissemination can be extended across the borders. The means of communication will include internet platforms (web sites, LinkedIn, and other social media). Moreover, results can be disseminated during meetings of the associated platforms organized regularly by SCHP CR. Similarly, CCIS will contribute to the dissemination by their established communication channels across the portfolio of the associated members. Moreover, universities will disseminate the work to wider academic community by means such as conference lectures, publishing articles in open-access journals, sharing the achieved results, and emphasizing the importance of green chemical production.

(ii) local authorities. The communication towards the local authorities will be ensured on several levels. The ministry of Regional Development CZ will provide us with the opportunity to present and promote the project outcomes at the meeting of the Czech Republic Committee for Transnational and Interregional Cooperation Programs 2021+ (Výbor ČR pro programy nadnárodní a meziregionální spolupráci 2021+), which associates representatives of other ministries, government, and other local and regional policymakers. Further, SCHP CR actively contributes to creation of the legislation, related to chemical industry, offering another communication channel for dissemination and implementing the project outcomes. CCIS will ensure the communication via established channels in other countries.

C.7.4 How do you foresee the reporting procedures for activities and budget (within the partnership)?

Please describe the reporting processes at the level of partners towards the lead partner.

The reporting procedures will be overseen by the Project Coordinator (CU). As mentioned above (C. 7.2), there will be regular meetings on several levels, where project progress and potential issues will be discussed. There will be a kick-off meeting at the beginning of the project and regular six-monthly progress meetings organized by the Project Coordinator.
The internal reporting structure will be as follows:
i) individual employees will report to their activity leader;
ii) activity leaders will report to the corresponding WP Leader;
iii) WP Leaders will report to the Project Coordinator.
In regard to reporting, apart from coordinating the internal communication, the Project Coordinator will perform the following:
i) monitor the project progress based on the reports received from WP Leaders;
ii) collect and check the financial and administrative information from the partners;
iii) prepare official reports for each reporting period and submit them on time.

C.7.5 Cooperation criteria

Please select the cooperation criteria that apply to your project and include a brief explanation. Please note that the joint development, joint implementation and joint financing criteria are mandatory.

Cooperation criteria		Description
Joint development	Yes	Both types of outputs (strategies/action plans and solutions) will be jointly developed by partners from at least two countries, which will ensure greater accessibility to expertise and also help prevent delays arising from technical or staff issues. For some activities, this will mean the work in transnational teams using different techniques and finding the best solution in the end; as a minimum, the results will be peer-reviewed by an expert from another country.
Joint implementation	Yes	Through the transnational cooperation of experts we aim to achieve the development of solutions that would be applicable to the whole Central European area and not just to one partner or country, and that will be implemented by more partners from more countries. Our goal is to disseminate the results in all the involved countries, so the solutions will be eventually taken up by chemical companies across the widest possible area.
Joint staffing	No	
Joint financing	Yes	The partner budgets are planned according to their involvement in the activities. The distribution of the funds will be organized by the Project Coordinator (CU) who will also apply any changes which might arise from unforeseen issues.

C.7.6 Horizontal principles

Please indicate how your project contributes to horizontal principles and provide a short explanation. With regard to environment protection, please also include an explanation how the "environmental sustainability by design" approach has been integrated and provide a brief assessment of possible environmental effects to your project.

Sustainable development and environment protection	positive effects	In 2015, the European Commission defined a Circular Economy Action Plan, in response to increasing environmental degradation and health impacts from inefficient use of resources and environmental emissions of greenhouse gases, air pollutants, and harmful chemicals. This ambitious plan was adopted in 2020 as one of the main building blocks of the European Green Deal that aims to deliver 'the first carbon-neutral continent' by 2050. Europe's Circular Economy Action Plan is well aligned with the global Sustainable Development Goals (SDGs) and promotes initiatives along the entire life cycle of products. Going forward, green chemistry will be an important foundation for the circular economy, since a no-waste use of natural resources is one of its overarching goals. Some major themes in circular chemistry today with regard to sustainable development and protection of the environment include reducing our reliance on non-renewable sources, reducing industrial carbon footprints, breaking down landfill waste, and taking advantage of abundant resources (waste) that nobody wants. It fits perfectly with the specific objective of this project, which aims to tackle all of the mentioned challenges.
Equal opportunities and non-discrimination	positive effects	As EU members, all the involved countries comply with EC directives, e. g. Directive 2000/43/EC prohibiting discrimination based on racial or ethnic origin; Directive 2000/78/EC against discrimination based on religion or belief, disability, age, or sexual orientation in the workplace; and Directive 2006/54/EC dealing with the principle of equal opportunities and equal treatment of men and women. All public bodies, higher education establishments and research organizations in this project have a Code of Ethics/Code of Conduct and Gender Equality Plan (GEP) published on the institutions' websites. They refuse discrimination on the grounds of race, ethnic origin, nationality, ideology, religion, faith, worldview, age, gender, sexual orientation, physical handicap, language, social origin, or property. They treat everybody with respect, irrespective of social or cultural differences. They comply with the principle of equal approach and equal opportunities. The project aims to maintain a representative gender balance in the consortium based on an equal opportunity policy during recruitment, which will be carried out through a competitive and non-discriminative hiring process, following the principles of personal data protection. Excellence will be the foremost selection criterion for new team members, and initial assessment will be irrespective of gender.

Horizontal principles	Type of contribution	Description of the contribution
Equality between men and women	positive effects	Equality between women and men is a core value of the EU, enshrined in the European treaties. The consortium acknowledges the gender issue as stated in the EC's Gender Equality Strategy for 2020-2025, the European Research Area (ERA) in terms of promoting gender equality in R&I, and the ERA framework, where the EC defined three objectives to work with the EU: integration of the gender dimension into the content of R&I is one of them, as well as the policy report Gendered innovations 2: How Inclusive Analysis Contributes to R&I. All recruitment campaigns by the partners for the project will encourage female scientists to apply for open positions. Additionally, all public bodies, higher education establishments and research organizations address the following issues: gender equality in recruitment and career progression; gender balance in leadership and decision-making; integration of the gender dimension into research and teaching content; measures against gender-based violence including sexual harassment.

C.8 Long-term effects and durability

Projects should have a long-lasting effect in the territories and for the relevant target groups. Please describe below how this will be ensured.

C.8.1 Ownership/durability

Please describe who will ensure the financial and institutional support including maintenance for outputs and, if applicable, for most important deliverables developed by your project.

Two types of outputs are planned to result from this project, the first type will be the action plans which will be publicly available, and there will be no need for additional financial support. On the other hand, the solutions developed during the project, as the second output type, will be the sustainable processes and ways for better waste management implemented by individual chemical companies, which will then constitute a part of their production and will be financed as such by the companies. No investments are planned to result from the project, therefore no maintenance expenses are foreseen.

C.8.2 Lasting effects

Outputs and deliverables should be made available and used by relevant target groups (project partners or other stakeholders) after the project's lifetime, in order to have a lasting effect on the territory. Please describe how the outputs and deliverables will stay available and will be taken up or upscaled by the project partners.

The developed strategies and action plans will be implemented by the partner and associated partner chemical companies and their practical effects on the production processes will be manifested after the project's lifetime. During the project, the strategies and solutions will be disseminated, among other means, through the existing communication channels available to partner institutions (e.g. their websites), where they will remain available to our target groups (experts from the industry and general public) after the finalization of the project. Some of the results will be published in open-access journals, which will ensure their availability to a wider group of experts in the field in the long term.
The training of the next generations of specialists and delivering public lectures belong to the duties of the partner universities and will continue after the project's lifetime. Therefore, by promoting education and awareness of green chemistry principles and practices, and adding these to the curricula, this project will enable wider understanding and adoption of sustainable practices among the future employees of the regional chemical companies and will also help to create a more informed public. This can eventually lead to the desired behavioral change in both the industry and the end consumers.
The project will also facilitate stronger connections between the partners leading to long-lasting collaboration between universities, chemical companies and other organizations.

C.8.3 Transferability

Please describe how outputs and deliverables could be adapted or further developed to be used by additional target groups or rolled out in other territories beyond the partnership. How will communication activities ensure that relevant groups are aware of the available outputs and deliverables to be used?

The transfer of knowledge to the relevant regional chemical producers outside the consortium will be conducted by the partner organizations, CCIS and SCHP CR, via their established communication channels. These organizations have a portfolio of chemical companies, so they can easily reach these companies and disseminate the developed strategies and sustainable solutions to them. This should ensure wider application to industrial processes in the Central European area and pave the way for a more environmentally friendly future.