A - Project identification

A.1 Project identification

Project id (automatically created)	NPA0100025
Name of the lead partner organisation	Nordlandsforskning
Name of the lead partner organisation in English	Nordland Research Institute
Project title	Hybrid energy solutions for buildings, and infrastructure
Project acronym	HYBES
Programme priority	Strengthening the capacity for climate change adaptation, and resource sufficiency in NPA communities
Specific objective	2.1: Promoting energy efficiency and reducing greenhouse gas emissions
Project duration in months	36

A.2 Project summary

Please give a short overview of the project and describe:

- the common challenges and opportunities of the programme area you are jointly addressing in your project;
- the overall objective of the project and the expected change your project will make to the current situation;
- the main outputs you will produce and those who will benefit from them;
- the approach you plan to take and why a transnational approach is needed;
- what is new/original about the project.

HYBrid Energy Solutions for buildings, and infrastructure (HYBES) project will use the Quadruple helix approach to jointly create knowledge-based tools and activities for promoting improved energy efficient solutions to achieve substantial reduction of greenhouse gas emissions within the NPA region. The project combines the concept of 'Living Labs' and the roll out of innovative tools to establish dedicated Decarbonisation Zones (DZ) in rural and peripheral regions. HYBES aims to build a knowledge-based ecosystem within rural communities to promote DZ opportunities and to build citizen capacity to achieve carbon neutral goals. HYBES will refine the 'Living Lab' concept in five partner regions; Norway, Sweden, Ireland, Iceland and the Faroe Islands. Through these Living Lab projects partners will build citizen knowledge and understanding about the importance and benefits of decarbonisation. HYBES will engage with communities who often feel marginalised by carbon neutral policies. HYBES will demonstrate how decarbonisation measures can benefit communities and individual households both financially and environmentally using existing best practices and novel innovations. The critical element will be to demonstrate through tangible outputs and education the value of decarbonisation. The project will:

• Refine 5 'living labs' in regions to promote and develop dedicated Decarbonisation Zones in rural and peripheral areas which can be replicated across the NPA region & beyond.
• Identify good practices and techniques that can address decarbonisation challenges and help achieve carbon neutrality.
• Facilitate co-creation and citizen engagement as a means of building citizen knowledge around the benefits of decarbonisation.
• Offer interaction with communities and stakeholders within NPA region.
• Develop a 'carbon school' initiative which will enable school children to see first-hand the benefits of decarbonisation initiatives with the aim of developing curriculum change.

A.3 Project budget overview

Programme funding			Contribution					Total
Funding source	Funding amount	Co-financing rate (%)	Automatic public contribution	Other public contribution	Total public contribution	Private contribution	Total contribution	
ERDF	613,881.97	65.00 %	0.00	263,515.27	263,515.27	67,036.59	330,551.86	944,433.83
Total EU funds	613,881.97	65.00 %	0.00	263,515.27	263,515.27	67,036.59	330,551.86	944,433.83
ERDF_NO	177,435.00	50.00 %	0.00	177,435.00	177,435.00	0.00	177,435.00	354,870.00
ERDF_IS	91,000.00	65.00 %	0.00	49,000.00	49,000.00	0.00	49,000.00	140,000.00
ERDF_FO	91,000.00	65.00 %	0.00	49,000.00	49,000.00	0.00	49,000.00	140,000.00
ERDF_GL	0.00	0.00 %	0.00	0.00	0.00	0.00	0.00	0.00
Total	973,316.97	61.63 %	0.00	538,950.27	538,950.27	67,036.59	605,986.86	1,579,303.83

A.4 Project outputs and result overview

Programme Output Indicator	Aggregated value per Programme output indicator	Measurement Unit	Output	Output Title (short)	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
Jointly developed solutions	4.00	solutions	Output 1.1	Living Labs model as a tool to facilitate behavioural change for decarbonisation	1.00				
			Output 2.1	Jointly developed energy monitoring and management tool for housing	1.00				
			Output 2.2	Jointly developed energy monitoring and educational tool for educators and educational facilities	1.00				
			Output 3.5	HYBES model for increased energy efficiency and local energy generation as a scalable method	1.00				

Programme Output Indicator	Aggregated value per Programme output indicator	Measurement Unit	Output	Output Title (short)	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
Pilot actions developed jointly and implemented in projects	11.00	pilot actions	Output 3.1	Pilot Solar installations in Ireland and Norway and their impact on Decarbonisation.	4.00				
			Output 3.2	Retrofit of buildings in Cork and Faroe Islands	2.00				
			Output 3.3	Flexible RES solutions using geothermal off-grid in Iceland, Norway, and the Faroe Islands	3.00				
			Output 3.4	Model and guidelines for storage and sharing in city districts for EV based on RES resources in Sweden and Norway	2.00				

Programme Output Indicator	Aggregated value per Programme output indicator	Measurement Unit	Output	Output Title (short)	Output target value	Programme result indicator	Baseline	Result indicator target value	Measurement unit
Organisations cooperating across borders	13.00	organisations	Output 1.2	HYBES transnational partnership	13.00				
						Solutions taken up or up-scaled by organisations	0.00	4.00	solutions

B - Project partners

Partners overview

Number	Status	Name of the Organisation in English	Country	Organisation abbreviation	Partner role	Associated organisations	Partner total eligible budget
1	Active	Nordland Research Institute	Norge (NO)	NRI	LP		255,000.00
2	Active	Cork County Council	Éire /Ireland (IE)	CCC	PP	Atlantic Seaboard South, Climate Action Regional Office (CARO)	210,000.03
3	Active	Secure and Fix It Enterprises T/A NCE Insulation	Éire /Ireland (IE)	NCE Insulation	PP	Carbery Housing Association CLG The Carbon Club	191,533.10
4	Active	City of Umeå	Sverige (SE)	Umeå	PP	AB Bostaden	165,000.00
5	Active	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK	Éire /Ireland (IE)	UCC	PP		207,900.00
6	Active	Umeå University	Sverige (SE)	UmU	PP		170,000.70
7	Active	National Energy Authority	Ísland (IS)	OS	PP		140,000.00

Number	Status	Name of the Organisation in English	Country	Organisation abbreviation	Partner role	Associated organisations	Partner total eligible budget
8	Active	Environment Agency	Faroe Islands (FO)	US	PP		140,000.00
9	Active	Bodø Municipality	Norge (NO)	BK	PP		99,870.00

B.1 Lead partner	
Partner number	1
Partner role	LP
Name of the Organisation in original language	Nordlandsforskning
Name of the Organisation in English	Nordland Research Institute
Organisation abbreviation	NRI
Department / unit / division	
Partner main address	
Country	Norge (NO)
NUTS 2	Nord-Norge (NO07)
NUTS 3	Nordland (NO071)
Street, House number, Postal code, City	Universitetsalleen 11 8049 Bodø
Homepage	www.nordlandsforskning.no
Address of department / unit / division (if applicable)	
Country	
NUTS 2	
NUTS 3	
Street, House number, Postal code, City	
Legal and financial information	
Type of partner	Higher education and research organisations
Legal status	Public
VAT number (if applicable)	989 714 309
PIC (from EC Participant Register)	941316325
Contact	
Legal representative	Mrs Iselin Marstrander
Contact person	Mr Bjarne Lindeløv
Email	bjl@nforsk.no

Contact	
Telephone no.	+4746918313

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Nordland research Institute has experience and has built up competence related to town planning; business development, innovation and production organization; development and regulation of renewable energy; energy efficiency in housing. Furthermore, the institute is central in development on method of action research and dialogue processes towards stakeholder engagement. NRI is partner in the Living lab of Bodø and contributes with our competences towards stakeholder activities on sustainable town development. NRI participates in networks and cooperate actively with Bodø Municipality in town development project New town new airport. In Hybes NRI will be an active executing and implementing partner i all work packets and we will do this in close collaboration with Bodø Municipality. We are involved in regional development networks and involved in regional strategies of Nordland County and will use this network to replicate results and tools form Hybes project. As lead partner NRI has experience and competence from complex European projects.

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

NRI has the role as lead partner in Hybes and will execute this role according to the rules of NPA and in good and responsible dialogue both with NPA secretariat and the other Hybes partners. NRI will develop the necessary tool to organised the project and support and secure a good progress of our activities as documented and described in our applications. NRI will organise for active dialogue with project partners both with online meetings and in person consortium meetings. These meetings we also act as a platform to develop and implement the tools and practices we develops in Hybes. As lead partner NRI will set up a plan for regular meetings between all partners within the Hybes project. Monthly online teams meeting will take place to secure progress in activity and to inform and coordinate common development activities. In addition, six in person consortium meetings will be organised one in each partner region and two in the lead partner region. Each work packet is organised with a WP leader from one of the partner organisations. This person will coordinate main activities in the respective WP's. Because of the strong focus on cross boarder development and implementation of pilots, tools and practices each work packet also is organised with a Co-lead. Lead partner will develop a risk management tool/template to evaluate risk factors and potential incidents of goal obtainment of the Hybes project.

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Motivation

Nordland Research Institute is active participant and has also leading parts in several Horisont and Interreg programmes. Some of those are mentioned below:

- Energy Saving Lighthouse Cities in the NPA region 01.04.16 - 01.04.19
- CityLoops - Closing the loop for urban material flows. Horizon 2020. 30.09.2019 - 30.09.2023
- FACE-IT aims to enable adaptive co-management of social-ecological fjord systems in the Arctic in the face of rapid cryosphere and biodiversity changes. European Union - Horizon 2020 01.11.2020 - 31.10.2024
- The aim of TIPPING+ is to generate a unique transdisciplinary social science analytical framework to respond to the following intertwined questions: European Union - Horizon 2020. 01.04.2020 - 30.03.2022
- TallWood – Supporting wood as multi-story building material. Interreg Nord. 30.11.2019 - 30.11.2022
- Building Self-Sustaining Research and Innovation Ecosystems in Europe through Responsible Research and Innovation EC H2020 SWAFT 14-2018 31.12.2018 - 30.06.2021
- Indu-Zero. Northsea Programme Interreg 30.06.2018 - 30.06.2022

Co-financing

Source	Amount	Percentage
ERDF_NO	127,500.00	50.00 %
Partner contribution	127,500.00	50.00 %
Partner total eligible budget	255,000.00	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
NRI	Public	127,500.00	50.00 %

Total

Sub-total public contribution	127,500.00	50.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %
Total	127,500.00	50.00 %

State Aid

State aid criteria self-check

Criterium I: Is the partner involved in economic activities through the project?

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

State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No
Result of State aid criteria self-check:	No risk of state aid
State aid relevant activities	
GBER scheme/de minimis to be filled after approval	

B.1 Project Partner 2	
Partner number	2
Partner role	PP
Name of the Organisation in original language	Cork County Council
Name of the Organisation in English	Cork County Council
Organisation abbreviation	CCC
Department / unit / division	EU Projects Office; Economic Development, Enterprise, and Tourism Directorate: Environment Directorate: Housing Directorate.
Partner main address	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	County Hall Carrigrohane Road T12 R2NC Cork
Homepage	https://www.corkcoco.ie/en
Address of department / unit / division (if applicable)	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	Business Growth Hub, County Hall Carrigrohane Road T12 R2NC Cork
Legal and financial information	
Type of partner	Local public authority
Legal status	Public
VAT number (if applicable)	0007458M
PIC (from EC Participant Register)	971322402

Contact	
Legal representative	Mr John Forde
Contact person	Mr Darragh O'Súilleabháin
Email	darragh.osuilleabhain@corkcoco.ie
Telephone no.	+353214285907

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Cork County Council has a key regional role as a local authority in the area of climate change, climate adaptation and energy efficiency, and is currently responsible for the management of 130 public buildings in Cork County, as well as 7,030 social houses, 40,000 public lights and a fleet of 700 vehicles. The organisation was the first local authority in Ireland to achieve ISO50001 certification of its Energy Management System, and this has resulted in substantial energy and cost savings and enhanced energy efficiency for the local authority and has also progressed the organisation as a leading national body in this sector.

Additionally, Cork County Council was also selected by national government to be the lead authority for the regional Climate Action Regional Office (CARO) due to the local authority's previous expertise and success in the area. Cork County Council leads the Atlantic Seaboard South CARO, which supports and coordinates climate action undertaken by the five Local Authorities of Clare, Limerick, Kerry, Cork City and Cork County. This is a key national role in coordinating climate mitigation and adaptation actions across the region and is essential in order to ensure that all public actors nationally meet their climate targets and adequately and effectively respond to the challenges of climate change.

Other relevant competencies and experiences for Cork County Council include membership of the Energy Cities network, which consists of a network of over 1000 local governments in 30 countries, as well as membership of the EU Covenant of Mayors. Cork County Council is a leading member of these networks, and contributes in a variety of ways in order to ensure that the climate agenda is advanced, and that meaningful change can be enabled and facilitated. These experiences and expertise exemplifies the organisation's strong competencies in the sectors of the HYBES project proposal, and provides an appropriate juncture for further expansion and research.

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

Motivation

Cork County Council's role on the HYBES project will be multi-faceted and expand across a number of work packages. Firstly, Cork County Council will lead work package five (WP5), which centres on the provision of a legacy for the project, including changing citizen behaviours and the replication of activities for the delivery of decarbonisation. WP5 involves four activities:

1. Capitalisation Plan
2. Guide to deliver the Living Labs model as a tool for the delivery of behavioural change for decarbonisation in other NPA regions.
3. Citizen's guide to decarbonisation: An end-users guide to influence behavioural change.
4. Decarbonisation as an influencer for educational curriculum change.

CCC have a key role in WP1 and will lead the development and delivery of Activity 1.3, which involves the development of a Joint Action Plan (JAP).The JAP is an essential project output which will focus the project consortium on opportunities for capacity building, knowledge transfer and innovation within the partner regions.

CCC will also have an active role in the remaining work packages.
- WP2: CCC will be involved in Activities 2.1, 2.2, 2.3 and 2.4. This is an important WP which requires input from all partners.
- WP3: CCC will be involved in Activities 3.2, 3.3. and 3.4.
- WP4: CCC will be involved in Activities 4.1 and 4.2.

Across the five WPs, CCC will have responsibility for a number of deliverables:
D1.3.1, D.3.2.1., D5.1.1., and D.5.3.1.

As such, CCC's role in the HYBES project is multi-faceted, extending across all WPs, and involves both leading WP5 activities, as well as contributing to a significant number of other project activities.

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Motivation

Cork County Council has a long and established history and experience of European projects and has collaborated with regional partners in almost every European region over the last twenty years. This has been reflected in the establishment of a dedicated EU Projects Unit, located within the Economic Development, Enterprise and Tourism Department, who liaise across the local authority with individual departments (such as Environment, Housing, Planning etc.) to develop, apply for, and deliver and implement European co-funded projects. This team currently consists of an experienced team of accredited project managers and financial officers. Indeed, since 1995 Cork County Council have been involved in over sixty success EU co-funded projects, nine of which were led by the local authority. A sample of relevant recent EU co-funded projects include:

- elighthouse: Renewable Energy Retrofit (Interreg NPA; 2016-2019).
- HYBES: Bridging Proposal, Decarbonisation (Interreg NPA; 2022-2022).
- CUTLER: Resilience and Sustainable Coastal Development (Horizon 2020; 2017-2020).
- PROTOATLANTIC: Marine Development and Renewable Energy (Interreg Atlantic Area; 2018-2023).
- Delta Lady: Environment and Resource Efficiency (Interreg Europe; 2018-2023).
- BATTERIE: Electric Vehicles and Intermodality (Interreg Atlantic Area; 2012-2014).

In addition to participation in EU co-funded projects, Cork County Council has, in recent years, expanded its remit to also participate in various international projects and engagements, including activities and projects in the USA and China. Examples include the Bridge to MassChallenge initiative, between Cork County Council and Mass Challenge, in Boston, USA.

Co-financing

Source	Amount	Percentage
ERDF	136,500.01	65.00 %
Partner contribution	73,500.02	35.00 %
Partner total eligible budget	210,000.03	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
CCC	Public	73,500.02	35.00 %

Total

Sub-total public contribution	73,500.02	35.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %
Total	73,500.02	35.00 %

State Aid

State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No
Result of State aid criteria self-check:	No risk of state aid
State aid relevant activities	
GBER scheme/de minimis to be filled after approval	

B.1 Project Partner 3	
Partner number	3
Partner role	PP
Name of the Organisation in original language	Secure and Fix It Enterprises T/A NCE Insulation
Name of the Organisation in English	Secure and Fix It Enterprises T/A NCE Insulation
Organisation abbreviation	NCE Insulation
Department / unit / division	NCE Insulation Northside Community Enterprise.
Partner main address	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	Redemption Road, Farranferris Cork City T23 YW62 CORK
Homepage	https://www.nceinsulation.ie/
Address of department / unit / division (if applicable)	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	Redemption Road, Farranferris Cork City T23 YW62 Cork
Legal and financial information	
Type of partner	SME
Legal status	Private
VAT number (if applicable)	636380T
PIC (from EC Participant Register)	906754740
Contact	
Legal representative	Mr Ross Jackson
Contact person	Mr Wayne O'Donnell

Contact	
Email	wodonnell@nce.ie
Telephone no.	0851562189

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

NCE Insulation is a social enterprise experienced in working with fuel poor homes and low income families. With over 20 years' experience working within the most deprived areas of Cork NCE Insulation has developed and implemented strategies to support and reinforce the work of the Sustainable Energy Authority for Ireland. NCE Insulation operates a well-established business strategy and is a leading, award winning CBO. For over 20 years NCE has sought to eliminate unemployment and improve living conditions through education and training. The organisation plays a major role in supporting economic growth and development. We recognise that investment in energy efficiency can drive economic regeneration, inward investment, job creation and new skills and training opportunities. Our knowledge and information about the local community, such as housing type, density and tenure, income, deprivation, and demographics assist in our ability to recognise homes in need of energy saving measures.

NCE insulation has extensive experience in organizing and managing the implementation of energy retrofitting and integration of renewable energy solutions in domestic, commercial, industrial, and community buildings in Cork and other counties of Ireland. NCE insulation has also promoted Sustainable Energy Communities and worked with these communities to produce Masterplans for energy retrofitting of communities community buildings and decarbonization of schools. The organization has also experience of European Projects and collaboration in transnational exchange around the theme of climate action and clean energy.

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

NCE Insulation will contribute its expertise and that of Associated Partner Carbon Club, to the development of carbon reduction strategies and campaigns for carbon reduction, in particular in schools. It wail also work with Associated Partners Carbery Housing Association and the Carbon Club in the demonstration of innovative renewable energy, storage, smart meters and smart energy management in social housing an community buildings. It will provide case studies in the use of renewables (solar and heat pumps) for the decarbonization of energy sources in domestic and community buildings. NCE will provide monitoring and measuring assessments in these buildings to evaluate their contribution to decarbonization. Properties monitored will be those renovated under programmes managed by NCE itself, and properties managed by Associate Partner Carbery Housing Association where innovative hybrid solar and storage systems have been deployed, NCE will also demonstrate its innovative model for decarbonization of schools, based on energy monitoring and energy management training for users.NCE will also develop a education module for students around decarbonization and energy efficiency.
NCE insulation will Lead on Activity 3.4 and on Activities 4.1, 4.2 and 4.4 and participate in all Management Activities (A.1.1 to A.1.4) all Living Lab Activities (A.2.1 - A.2.4) as well as Activities 3.2 and 3.3,(Energy Monitoring) 4.4 (EV Infrastructure) and Activities A.5..1 to A.5.3 (Capitalization, Citizens Engagement and Curriculum Change)

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Motivation

NCE was a full Partner in the E-Lighthouse project and provided an example of large scale retrofitting of existing homes in Cork County, as a case study of maximizing the impact of retrofitting, NCE is also a Partner in the current project Energy Pathfinder, which is developed Co-Design, technical tools and an on Line Toolkit for the retrofitting of historic buildings to Near Zero Energy Building standard. In addition to contributing to technical aspects of the Project (mainly with respect to decarbonisation campaigns, energy monitoring and renewables deployment), NCE has also been responsible for the Communications aspects of the Energy Pathfinder project.

Co-financing

Source	Amount	Percentage
ERDF	124,496.51	65.00 %
Partner contribution	67,036.59	35.00 %
Partner total eligible budget	191,533.10	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
NCE Insulation	Private	67,036.59	35.00 %

Total

Sub-total public contribution	0.00	0.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	67,036.59	35.00 %
Total	67,036.59	35.00 %

State Aid

State aid criteria self-check

Criterium I: Is the partner involved in economic activities through the project?

1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	Yes	The organisation is an undertaking.
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	Yes	The organisation offers services, such as energy retrofitting and integrating renewables.

Criterium II: Does the partner receive an undue advantage in the framework of the project?		
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	Yes	Through pilot actions, the organisation will be involved in retrofitting social homes and a community building with renewable energy and energy efficiency solutions, as well as a cloud-based energy management system.
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	Yes	The piloting in the project could potentially improve the service offering of NCE, because the activities in the project are similar to the company's core services.
Result of State aid criteria self-check:	There is a risk of State aid	
State aid relevant activities	Activity3.2 , Activity3.1	
GBER scheme/de minimis to be filled after approval	GBER Article 20	

B.1 Project Partner 4	
Partner number	4
Partner role	PP
Name of the Organisation in original language	Umeå Kommun
Name of the Organisation in English	City of Umeå
Organisation abbreviation	Umeå
Department / unit / division	Environmental and health
Partner main address	
Country	Sverige (SE)
NUTS 2	Övre Norrland (SE33)
NUTS 3	Västerbottens län (SE331)
Street, House number, Postal code, City	Skolgatan 31A 90184 UMEÅ
Homepage	www.umea.se
Address of department / unit / division (if applicable)	
Country	Sverige (SE)
NUTS 2	Övre Norrland (SE33)
NUTS 3	Västerbottens län (SE331)
Street, House number, Postal code, City	Skolgatan 31A 90184 UMEÅ
Legal and financial information	
Type of partner	Local public authority
Legal status	Public
VAT number (if applicable)	SE2120002627
PIC (from EC Participant Register)	999651446
Contact	
Legal representative	Head of local government Margaretha Alfredsson
Contact person	Mr Torgny Forss

Contact	
Email	torgny.forss@umea.se
Telephone no.	+46703627881

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Energy and climate counselling, energy monitoring and assessment, climate and energy data management.

The municipality is responsible for several areas which affect the lives of local citizens. Information on planning and building issues, health and environmental protection, street cleaning and waste management, water and sewage, emergency services, public order and safety is presented under this heading. The municipality also provides an energy advice service for the public, small medium enterprises and different organizations. It is an independent service, free of charge for the citizens. The energy advice service also works with energy strategies, energy and emission inventories and climate mitigation actions for Umeå and environmental projects targeting both the municipal organization and the public..

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

City of Umeå will utilise the municipality's energy and climate counselling function to engage local housing associations, households, tenants, community organisations and cultural events in the project. Establish collaboration with key municipal owned businesses, including the municipal housing and energy agencies and provide a support role to project partner and work package leader University of Umeå, especially in the communication parts.

City of Umeå will lead the activity 3.2 coordinating the documentation from each best practice model for the report and lead the work on the D.3.2.1 report and the analysis work with the activity partners.

City of Umeå will contribute as a project partner in joint activities as further described in project activities:
Activities 1.1, 1.2, 1.3, 1.4 in WP1
Activities 2.1, 2.2, 2.3, 2.4 in WP2
Activities 3.1, 3.3, 3.4 in WP3
Activities 4.2, 4.4 in WP4
Activities 5.1, 5.2, 5.3, 5.4 in WP5

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Motivation

The city of Umeå has long experience both leading and participating in European level projects. The City of Umeå has been involved in several external funded projects both on EU, National and Regional level, such as Ruggedised(Horizon), e-Lighthouse(NPA), Low Carbon Place 1.0 and 2.0(Regional fund), Sustainable Ålidhem, EU missions (100 climate neutral and smart cities by 2030), and EU Farm to Fork strategy projects (School Food 4 Change), among others. Active participation in various international networks including ICLEI, Covenant of Mayors, European Green Capital, and the EU International Urban Cooperation programme. Projects
tackling energy efficiency, climate, circular economy, sustainable transportation and renewable energy solutions.
City of Umeå have a long experience working with energy solutions, climate questions and transportations on a local
level. Also, Umea has long experience with awareness raising campaigns and
information events with e.g. workshops to increase engagement in decarbonization.

Projects:
e-Lighthouse (NPA 2016-2019) Umea municipality is a partner in the project which tackels issuses regarding climate change with improving the energy efficiency in buildings and CO2 emissions from waste.

N-EEC Cluster porject (NPA 2018) Umea municipality as a partner in the cluster project representing e-Lighthouse.

RUGGEDISED is a smart city project funded under the European Union's Horizon 2020 research and innovation programme. It brings together three lighthouse cities: Rotterdam, Glasgow and Umeå and three fellow cities: Brno, Gdansk and Parma to test, implement and accelerate the smart city model across Europe. https://ruggedised.eu/cities/umeaa/

Co-financing

Source	Amount	Percentage
ERDF	107,250.00	65.00 %
Partner contribution	57,750.00	35.00 %
Partner total eligible budget	165,000.00	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
Umeå	Public	57,750.00	35.00 %

Total

Sub-total public contribution	57,750.00	35.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %

Total		
Total	57,750.00	35.00 %
State Aid		
State aid criteria self-check		
Criterium I: Is the partner involved in economic activities through the project?		
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No	
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No	
Criterium II: Does the partner receive an undue advantage in the framework of the project?		
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No	
Result of State aid criteria self-check:	No risk of state aid	
State aid relevant activities		
GBER scheme/de minimis to be filled after approval		

B.1 Project Partner 5	
Partner number	5
Partner role	PP
Name of the Organisation in original language	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK
Name of the Organisation in English	UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK
Organisation abbreviation	UCC
Department / unit / division	Cork Centre for Architectural Education (CCAE) & UCC Civic and Community Engagement Office
Partner main address	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	WESTERN ROAD 1 T12 YN60 Cork
Homepage	https://www.ucc.ie/en/
Address of department / unit / division (if applicable)	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	Douglas Street 1 T12 AD7R Cork
Legal and financial information	
Type of partner	Higher education and research organisations
Legal status	Public
VAT number (if applicable)	IE 0006286E
PIC (from EC Participant Register)	999975717
Contact	
Legal representative	Dr Martin Galvin

Contact	
Contact person	Dr Jason O'Shaughnessy
Email	j.oshaughnessy@ucc.ie
Telephone no.	+353(0)214205684

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

University College Cork (UCC) has is an internationally competitive, research-led university that is ranked in the top 2% of universities worldwide. UCC aspires to provide a vision "to be a leading university of independent thinkers." Our role here involves the questioning the continuous challenges within regional environments towards a more sustainable future around green infrastructure, climate, and energy behaviour. At the core of this objective is the idea of finding new ways of engaging with emerging paradigms around sustainability that align with the main objectives of the UN 2030 Agenda (2015) and respond to emerging sociocultural and environmental problematics of the 'Anthropocene' period.

Our work in the Hybes project will adopt 'co-creation' approached to actively engage with and collaboratively address a societal challenge in collaboration with regional stakeholders (Quadruple Helix approach). Using the model of the 'Living Lab' as a base for creating continuous civic immersion, we will look to enable a co-creative environment that seeds new paradigms around a decarbonisation, we will evolve new participatory methods - making the interactions both 'inclusive' and 'superdiverse'. Our overall aim is to develop, demonstrate, and disseminate a new approach to co-creation in planning which will focus on the challenges around a decarbonised society.

This will involve a wide diversity of actors (decision makers, citizens, civil society, private sector, research community) in processes combining technology and innovation (expert knowledge) and everyday life perspectives (lay ordinary experience) into a unitary experience in order to co-create sustainable future visions - such that it implements genuine change in people's everyday life. The results we generate, will be disseminated and discussed with other partners/actors across Europe in order to assess the possibilities for implementation - contributing to the impact and legacy of the project.

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

Motivation

UCC will lead WP2 - where all concepts and visions related to the design and development of the co-creation process and Living Lab will come together. UCC - as the Leader of the Living Lab implementation - will have the main role in defining and implementing in WP2 and specifically lead the implementation in Cork and coordinate activities with other Partners.

As Leader of WP2, our role is to focus on developing a better understanding of co-creation processes and outcomes under various cultural, environmental societal and regulatory backgrounds and providing better-targeted policy supports around decarbonisation for the future. With this, we will establish a two-way iterative and participatory process - involving multi-actor dialogues that foster mutual understanding and co-created research. These exchanges will be based on exploring innovation outcomes and policy agendas. Together with community stakeholders and our Partners in the 5 Regions, our work will position the problematics around a decarbonised society involving a process that;

1. Animates a collective understanding of a diverse, inclusive and sustainable urban future through public and community participatory methodologies.
2. Develops and tests a co-creation methodology that mobilizes interactions between social and material production towards inclusive environmental, social, cultural and economic sustainability.

As part of building legacy, we will facilitate interactions and skills and knowledge transfer with University learners during the HYBES project such that future Architecture professional are aware of the connections between energy system stability and carbon effectiveness.

UCC will Lead on all activities related to the Living Lab development, (A.2.1 to A.2.4) and A.5.2.and also participate in all Project Management Activities (A1.1 - A.1.4) as welt as taking active part in Activities A.3.2, A.3.4, A.4.4, A.5.1, A.5.3 and A.5.4

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Motivation

1. UNIC European University Alliance Horizon 2020: UCC is leading a €2m Horizon 2020 SWAFS initiative to develop and embed engaged research across all of the UNIC European University Alliance partners. This includes a joint strategy, structure, platform and excellence initiative.
2.UNIC European University Alliance Erasmus+: UCC is a leader in the €5M EU Erasmus+ European University of Post-Industrial Cities (UNIC). This includes a joint strategy, structure, platform and excellence initiative for enhancing diversity and inclusion, impact and mobility within and across the UNIC alliance.
3. GRIPP Horizon 2020: UCC is leading the Horizon 2020 funded €1.5 'Grounding Responsible Research and Innovation Practices in research organizations' (GRIPP) project.
4. Time4CS Horizon 2020: UCC is co-leading the Horizon 2020 €1.4m Time4CS initiative which aims at supporting and facilitating the implementation of sustainable Institutional Changes in Research Performing Organisations (RPOs) to promote Citizen Science and public engagement (citizens and citizens associations) in science and technology.
5. PPI IGNITE (Irish Health Research Board): UCC received Irish Health Research Board funding of €3.3 M over 5 years to establish a National Public Patient Involvement Network, to promote citizen and societal engagement in health research in Ireland.
6. NEES, 2011-2014: This NPA funded l partnership from 5 regions in the Northern Periphery of Europe initiated and managed by the Cork Centre for Architectural Education (UCC), which explored the viability of use of natural and recycled materials and natural processes for green construction
7. Energy Pathfinder, 2019-2022: led by the Cork Centre for Architectural Education (UCC), this NPA funded project includes Partners from 5 Regions and 7 Demonstration projects that test conformance to existing guidelines for historic buildings -and the development of a Toolkit for achieving zero energy standards in historic buildings

Co-financing

Source	Amount	Percentage
ERDF	135,135.00	65.00 %
Partner contribution	72,765.00	35.00 %
Partner total eligible budget	207,900.00	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
UCC	Public	72,765.00	35.00 %

Total

Sub-total public contribution	72,765.00	35.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %
Total	72,765.00	35.00 %

State Aid	
State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No
Result of State aid criteria self-check:	No risk of state aid
State aid relevant activities	
GBER scheme/de minimis to be filled after approval	

B.1 Project Partner 6	
Partner number	6
Partner role	PP
Name of the Organisation in original language	Umeå University
Name of the Organisation in English	Umeå University
Organisation abbreviation	UmU
Department / unit / division	Department of Applied Physics and Electronics
Partner main address	
Country	Sverige (SE)
NUTS 2	Övre Norrland (SE33)
NUTS 3	Västerbottens län (SE331)
Street, House number, Postal code, City	Håken Gullessons väg 20 Teknikhuset X 901 87 Umeå
Homepage	https://www.umu.se/
Address of department / unit / division (if applicable)	
Country	Sverige (SE)
NUTS 2	Övre Norrland (SE33)
NUTS 3	Västerbottens län (SE331)
Street, House number, Postal code, City	Håken Gullessons väg 20 Teknikhuset X 901 87 Umeå
Legal and financial information	
Type of partner	Higher education and research organisations
Legal status	Public
VAT number (if applicable)	SE202100287401
PIC (from EC Participant Register)	
Contact	
Legal representative	Mr Thomas Olofsson
Contact person	Mr Gireesh Nair

Contact	
Email	gireesh.nair@umu.se
Telephone no.	+46907868804

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Umeå University (UmU), established in 1965, in the city of Umeå is a comprehensive university covering research and education in medicine, science and technology, social sciences, arts and humanities, and educational sciences. Umeå University with more than 34,000 enrolled students is the largest university in northern Sweden. The Department of Applied Physics and Electronics (TFE), is a department under the Faculty of Science and Technology. The energy efficiency (EE) group is one of the flag-ship research group within TFE. The research focus of the EE group is energy efficiency in the building sector. EE group is multi-disciplinary and comprises 16 researchers who have expertise in diverse energy fields. EE group has a strong network of energy and building professionals in the region. EE group has been working in close cooperation with regional stakeholders on improvement of energy efficiency in the building sector and renewable energy uptake in the region. The group’s research competence includes energy monitoring and evaluation of energy performance of buildings, life cycle analysis of buildings, building simulation and surveys of stakeholders.

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

The multidisciplinary expertise of the group would be useful in the different work packages in the project. The research group has competence in monitoring and analysing the performance of the renewable energy technologies and energy performance analysis of buildings. Also, the group has strong expertise in studying the attitude and behaviour of end-users
towards renewable energy technologies and energy efficiency measures. This research competence will be especially useful in leading the WP3 on Energy efficiency and management: Monitoring and assessment. Further, research group has knowledge in positive energy districts and would be able to provide valuable inputs in other work packages pertaining to decarbonization zones and energy advices. UmU will carry out energy simulations for buildings in a neighborhood in Umeå with an aim to understand what is technically possible to reduce energy use and CO2-emissions. Based on the data and the simulations the aim is develop recommendations/scenarios/pathways for DZs. Further, UmU will also assist Umeå Municipality to carry out surveys of building occupants in a neighborhood to learn their perspectives on energy issues. In addition to leading WP3, UmU will participate in all activities in WP1, activities 2.1 and 2.2 in WP2, 4.2 in WP4 and 5.1-5.3 in WP5.

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Motivation

The research group has participated in several EU co-financed and other international collaborative projects.
(1) Interreg IIIA Kvarken-MittSkandia Kvarken Energy and Environment in Buildings Main applicant 2003-2005 (2) Interreg IIIA Kvarken-MittSkandia KLUCK Competence Centre: Buildings - Air Quality - HealthCo-applicant 2004-2007 (3) Interreg IIIA Kvarken-MittSkandia KLUCK II (Competence: Buildings - Air Quality) Co-applicant 2009-2011 (4) Interreg IVA NORD Increasing Energy Efficiency in Buildings (IEEB), Applicant money Co-applicant 2010 (5) Interreg IVA NORD Increasing Energy Efficiency in Buildings (IEEB), Full project Co-applicant 2010-2013 (6) Northern Periphery program Natural Energy efficiency and sustainability (NEES), Applicant money Co-applicant 2010 (7) Northern Periphery program Natural Energy efficiency and sustainability (NEES), Full project Co-applicant 2011-2013 (8) Nordplus Activities and Enlargement
of Nordic Academy of Architecture Main-applicant 2011-2012 (9) Sustainable Buildings in The High North, Kolartic ENPI CBC Program 2014-2018 (10) Botnia-Atlantica, Trä på Betong, 2013-2014 (11) Botnia-Atlantica, Renoveringscentrum, 2015-2018
(12) Elighthouse: Northern Periphery and Arctic Program, 2016-2019 (13) Horizon 2020 (SCC-1- 2016-2017), Ruggedised, 2017-2021 (14) Interreg Nord, Increasing Competence in Northern Building and Construction operation, 2017-2019 (15) Green Arctic Building, Kolartic ENPI CBC Program 2018-2020 (16) Circular Economy- A game changer for the wood building industry funded by Interreg Botnia-Atlantica (2018-209) (17) Energy Pathfinder: Northern Periphery and Arctic Program (18) Enhanced Sustainability of Built Environment by Collaboration and Digitalization, Interreg Nord (2020-2022)

Co-financing

Source	Amount	Percentage
ERDF	110,500.45	65.00 %
Partner contribution	59,500.25	35.00 %
Partner total eligible budget	170,000.70	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
UmU	Public	59,500.25	35.00 %

Total

Sub-total public contribution	59,500.25	35.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %
Total	59,500.25	35.00 %

State Aid

State aid criteria self-check	
Criterium I: Is the partner involved in economic activities through the project?	
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No
Criterium II: Does the partner receive an undue advantage in the framework of the project?	
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No
Result of State aid criteria self-check:	No risk of state aid
State aid relevant activities	
GBER scheme/de minimis to be filled after approval	

B.1 Project Partner 7	
Partner number	7
Partner role	PP
Name of the Organisation in original language	Orkustofnun
Name of the Organisation in English	National Energy Authority
Organisation abbreviation	OS
Department / unit / division	Climate change, energy transition and innovation
Partner main address	
Country	Ísland (IS)
NUTS 2	Ísland (IS00)
NUTS 3	Landsbyggð (IS002)
Street, House number, Postal code, City	Rangárvöllum 8 603 Akureyri
Homepage	os.is
Address of department / unit / division (if applicable)	
Country	Ísland (IS)
NUTS 2	Ísland (IS00)
NUTS 3	Landsbyggð (IS002)
Street, House number, Postal code, City	Rangárvöllum 8 603 Akureyri
Legal and financial information	
Type of partner	National public authority
Legal status	Public
VAT number (if applicable)	ID: 5002695379, VAT: 02135
PIC (from EC Participant Register)	969550406
Contact	
Legal representative	Mrs Halla Hrund Logadóttir
Contact person	Mr Ragnar Ásmundsson

Contact	
Email	rka@os.is
Telephone no.	+3546939172

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Orkustofnun is the National Energy Authority in Iceland. We gather data from all power companies in Iceland (hydro, geothermal, wind or other), analyse the results and provide consultancy at ministry and government level. In addition, we participate in various energy related projects, including energy saving and new technologies in energy transition from fossil fuel to renewable, linking directly to thematics in NPA projects.

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

Orkustofnun (OS) has three main tasks in the project; 1) provide a tool which guides the user towards a sustainable lifestyle, based on existing services within the Municipality of Akureyri, 2) monitor energy improvements in one of the most rural areas in northern part of Iceland (Tjörnes), where heat pumps will be installed and 3) support off-grid electricity generation using renewable energy, such as e-fuel, solar and wind coupled with battery solutions.

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Orkustofnun has participated in numerous EU projects. Furthermore, the staff members of this project have previously participated in a number of NPA projects, e.g. SMARTrenew which finished in March 2022 and SMARCTIC, still ongoing.

Co-financing

Source	Amount	Percentage
ERDF_IS	91,000.00	65.00 %
Partner contribution	49,000.00	35.00 %
Partner total eligible budget	140,000.00	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
OS	Public	49,000.00	35.00 %

Total

Sub-total public contribution	49,000.00	35.00 %
Sub-total automatic public contribution	0.00	0.00 %

Total		
Sub-total private contribution	0.00	0.00 %
Total	49,000.00	35.00 %
State Aid		
State aid criteria self-check		
Criterium I: Is the partner involved in economic activities through the project?		
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No	
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No	
Criterium II: Does the partner receive an undue advantage in the framework of the project?		
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No	
Result of State aid criteria self-check:	No risk of state aid	
State aid relevant activities		
GBER scheme/de minimis to be filled after approval		

B.1 Project Partner 8	
Partner number	8
Partner role	PP
Name of the Organisation in original language	Umhvørvisstovan
Name of the Organisation in English	Environment Agency
Organisation abbreviation	US
Department / unit / division	Energy Departement
Partner main address	
Country	Faroe Islands (FO)
NUTS 2	Faroe Islands (FO00)
NUTS 3	Faroe Islands (FO000)
Street, House number, Postal code, City	Traiðagøta 38 165 Argir
Homepage	www.US.fo
Address of department / unit / division (if applicable)	
Country	Faroe Islands (FO)
NUTS 2	Faroe Islands (FO00)
NUTS 3	Faroe Islands (FO000)
Street, House number, Postal code, City	Traiðagøta 38 165 Argir
Legal and financial information	
Type of partner	National public authority
Legal status	Public
VAT number (if applicable)	GLN/EAN nr. 5797100000737
PIC (from EC Participant Register)	
Contact	
Legal representative	Mr. (dir.) Kari Mannbjørn Mortensen
Contact person	Mr. Bjarti Thomsen

Contact	
Email	bt@us.fo
Telephone no.	+298211008

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Umhvørvisstovan is the national energy authority and is responsible for exercising the public energy policy, including develop, coordinate and advise work with regard to renewable and efficient energy solutions. The organisation has several senior engineer researchers with background in private IT companies as well as comprehensive competences within the energy sector. Umhvørvisstovan initiated space heating solutions using heat-pumps for ground source heat extraction. An increasing number of private houses and public buildings are now converting from oil burners to this heat pump system. Umhvørvisstovan has initiated several data logging systems for various energy systems such as heat pump installations and solar energy generation systems. Information from these systems is gathered, processed & communicated to the public at large to give accurate advice on best practices energy solutions. Development of data acquisition, processing and sharing systems will continue.

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

US will participate in Project Management Activities and living Lab
Activities. US will also participate in Energy Monitoring Activities and
also in "Energy Management and Monitoring" activities, "Geothermal Solutions" and "EV Solutions" activities.

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Umhvørvisstovan has extensive international collaboration experience with regard to energy and environmental issues.
Umhvørvisstovan is partner in several international Nordic Counsil and EU projects as well as locally funded projects.
Umhvørvisstovan was partner in the NPA funded projects SECURE, Emergreen and Smart Renew.

Co-financing

Source	Amount	Percentage
ERDF_FO	91,000.00	65.00 %
Partner contribution	49,000.00	35.00 %
Partner total eligible budget	140,000.00	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
US	Public	49,000.00	35.00 %

Total		
Sub-total public contribution	49,000.00	35.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %
Total	49,000.00	35.00 %
State Aid		
State aid criteria self-check		
Criterium I: Is the partner involved in economic activities through the project?		
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No	
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No	
Criterium II: Does the partner receive an undue advantage in the framework of the project?		
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No	
Result of State aid criteria self-check:	No risk of state aid	
State aid relevant activities		
GBER scheme/de minimis to be filled after approval		

B.1 Project Partner 9	
Partner number	9
Partner role	PP
Name of the Organisation in original language	Bodø Kommune
Name of the Organisation in English	Bodø Municipality
Organisation abbreviation	BK
Department / unit / division	Business, Innovation & Development
Partner main address	
Country	Norge (NO)
NUTS 2	Nord-Norge (NO07)
NUTS 3	Nordland (NO071)
Street, House number, Postal code, City	Kongens gate 23 8003 Bodø
Homepage	https://bodo.kommune.no/
Address of department / unit / division (if applicable)	
Country	Norge (NO)
NUTS 2	Nord-Norge (NO07)
NUTS 3	Nordland (NO071)
Street, House number, Postal code, City	Kongens gate 23 8003 Bodø
Legal and financial information	
Type of partner	Regional public authority
Legal status	Public
VAT number (if applicable)	972 418 013
PIC (from EC Participant Register)	905220976
Contact	
Legal representative	Mr Thor Arne Tobiassen
Contact person	Mr Tor Gausemel Kristensen

Contact	
Email	tor.gausemel.kristensen@bodo.kommune.no
Telephone no.	93675229

Motivation

Which of the organisation's thematic competences and experiences are relevant for the project?

Bodø Municipality has experience in energy system analyzes. Furthermore, as an experienced partner in several externally funded projects, Bodø Municipality is experienced in carrying out research projects. Bodø's participation in such projects has led to the organisation beeing a pioneer in data visualisation using a digital twin developed in collaboration with a software company.

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

Bodø Municipality is actively working with analyzes on energy systems, and has received external funding (Enova) for this. Bodø Municipality will use it's competence on this subject, and furthermore make available for the HYBES-project a digital twin suited to visualise energy systems, make scenarios and present big data. This digital twin is used today to visualise data related to demographic values, infrastructure, emission, traffic, masses & materials and energy as a result of it being used in other EU projects like InduZero (https://northsearegion.eu/indu-zero/) and CityLoops (https://cityloops.eu/). As the owner of the regional energy supplier, Bodø Municipality will as a partner make available all energy data needed for the HYBES-project.

Based on this Bodø Municipality will be central in WP3. Furthermore, the city of Bodø might be suited to function as a Living lab (WP2).

If applicable, describe the organisation's experience in participating in and/or managing EU co-financed projects or other international projects.

Bodø Municipality has been, and is, a partner in several EU projects including CityLoops (H2020, circular economy), B-WaterSmart (H2020, water treatment), InduZero (Interreg, sustainable building renovation), e-Lighthouse (Interreg, sustainable enegy supply) in addition to several research projects with national funding, including a project funded by Enova where the energy system of the city's port is to be analyzed og visualised in order to identify optimal energy solutions for the actors located there.

Co-financing

Source	Amount	Percentage
ERDF_NO	49,935.00	50.00 %
Partner contribution	49,935.00	50.00 %
Partner total eligible budget	99,870.00	100.00 %

Origin of partner contribution

Source of contribution	Legal status of contribution	Amount	% of total partner budget
BK	Public	49,935.00	50.00 %

Total		
Sub-total public contribution	49,935.00	50.00 %
Sub-total automatic public contribution	0.00	0.00 %
Sub-total private contribution	0.00	0.00 %
Total	49,935.00	50.00 %
State Aid		
State aid criteria self-check		
Criterium I: Is the partner involved in economic activities through the project?		
1. Will the project applicant implement activities and/or offer goods/services for which a market exists?	No	
2. Are there project activities/goods/services that could have been undertaken by an operator with the view to making profit (even if this is not the applicant's intention)?	No	
Criterium II: Does the partner receive an undue advantage in the framework of the project?		
1. Does the project applicant plan to carry out the economic activities on its own i.e. not to select an external service provider via public procurement procedures for example?	No	
2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?	No	
Result of State aid criteria self-check:	No risk of state aid	
State aid relevant activities		
GBER scheme/de minimis to be filled after approval		

Associated organisations

Number	Status	Name of the Organisation in original language	Partner to which the organisation is associated to
1	Active	Atlantic Seaboard South, Climate Action Regional Office (CARO)	CCC
2	Active	Carbery Housing Association CLG	NCE Insulation
3	Active	AB Bostaden	Umeå
4	Active	The Carbon Club	NCE Insulation

Atlantic Seaboard South, Climate Action Regional Office (CARO) AO1	
Partner number	PP2
Name of the Organisation in original language	Atlantic Seaboard South, Climate Action Regional Office (CARO)
Name of the Organisation in English	Atlantic Seaboard South, Climate Action Regional Office (CARO)
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	Floor 5, County Hall Carrigrohane Road T12R2NC Cork
Legal representative	Mr Kevin Motherway
Contact person	Ms Aoife Sugrue
Email	aoife.sugrue@corkcoco.ie
Telephone no.	+353214285483

Atlantic Seaboard South, Climate Action Regional Office (CARO) AO1	
Partner role	The Atlantic Seaboard South, Climate Action Regional Office (CARO) is a key national organisation which supports and coordinates climate action undertaken by the five Local Authorities of Clare, Limerick, Kerry, Cork City and Cork County. The office is funded by the Department of Climate Action, Communication Networks and Transport and is hosted by Cork County Council as the lead authority with the Region. CARO aims to: - Support and coordinate effort by the Local Authorities in this region, public bodies and other stakeholders to deliver climate action at a local level. - Raise awareness of the impacts of climate change and equip Local Authorities with the information they need to adapt. - Facilitate collaboration and information forums to support Local Authorities, public bodies and stakeholders to share climate change adaptation and mitigation action, research and best practice. - Work with the Local Authorities in the region to deliver on the Local Authority Climate Action Charter and promote community and individual action at a local level. - Facilitate stakeholder engagement and input into climate action policy development and implementation at a local level. - Develop a knowledge hub with links to academia, state agencies and relevant stakeholders to capture, share and exchange information on the most significant risks to the region. The Atlantic Seaboard South CARO will act as a key regional stakeholder for the Cork region, and will be closely involved with Cork County Council, University College Cork and NCE for the duration of the HYBES project.

Carbery Housing Association CLG AO2	
Partner number	PP3
Name of the Organisation in original language	Carbery Housing Association CLG
Name of the Organisation in English	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	The Wooden House, Rossnagoose, 1 P81 RD83 Skibbereen
Legal representative	Mr Jose Ospina
Contact person	Ms. Ana Ospina
Email	redwolf@carberyhousing.eu
Telephone no.	+353838731931
Partner role	Carbery Housing is a government registered Approved Housing Body with public status hat provides social housing for families in Cork County and City. CHA is also a sustainable energy community registered with Sustainable Energy Authority of Ireland (SEAI), and has carried out a Materplan for the retrofitting of its existent housing stock. It has also carried out a study of energy poverty of its residents, and undertaken a pilot project in energy management by residents through the use of Apps. CHA has undertaken deep retrofitting of a number of its homes with support from NCE Insulation, CHA has also participated as Partner n various EU Project and has coordinated on (RENEASE - Renewables Energy Against Social Exclusion IEE ALTENER 2003). CHA is currently a full Partner in the Interreg NWE Project RedWoLF that aims to develop an hybrid model for fossil fuel free domestic hearing that PV panels, batteries, storage heaters and smart meter control system into existing social, homes.

AB Bostaden AO3	
Partner number	PP4
Name of the Organisation in original language	AB Bostaden
Name of the Organisation in English	AB Bostaden
Country	Sverige (SE)
NUTS 2	Övre Norrland (SE33)
NUTS 3	Västerbottens län (SE331)
Street, House number, Postal code, City	Östra Kyrkogatan 2 90106 Umeå
Legal representative	Mr Jerker Eriksson
Contact person	Mr Thomas Edström
Email	thomas.edstrom@bostaden.umea.se
Telephone no.	+46(0)701856116
Partner role	As the municipal housing company Bostaden AB can contribute with: - to enable the project partners Umeå Kommun and Umeå Universitet to collect data from the district on individual apartment buildings. - supporting the identification of good practices and concrete challenges related to decarbonisation and achieving carbon neutrality in the company´s houses in the district. - Co-creation and citizen engagement as a means of building citizen knowledge around the benefits of decarbonisation.

The Carbon Club AO4	
Partner number	PP3
Name of the Organisation in original language	The Carbon Club
Name of the Organisation in English	
Country	Éire/Ireland (IE)
NUTS 2	Southern (IE05)
NUTS 3	South-West (IE053)
Street, House number, Postal code, City	Redemption Road, Farranferris Cork City T23 YW62 CORK
Legal representative	MR ROSS JACKSON
Contact person	MRS NOREEN HEGARTHY
Email	nhegarty@nce.ie
Telephone no.	0872721706
Partner role	The Carbon club have a mission to encourage and drive behavioral change through collaboration with young people.The carbon club work and vision hopes to directly impact positively on the HYBES project through education. The carbon club have had initial meetings with educational state bodies and getting involved with this project will encourage sustainability around behavioral change and energy. The key areas in which the Carbon club will impact the project is on monitoring,education and using the networks created by The Carbon Club in the decarboniastion zones. The carbon club will act as a key stakeholder for the Cork region , especially around involvement with education in second level.

C - Project description

C.1 Project overall objective

Programme priority specific objective chosen in section A.1.

2.1: Promoting energy efficiency and reducing greenhouse gas emissions

Project overall objective

Please define the overall objective of the project. Make sure that it clearly contributes to the selected programme specific objective and falls within the scope of the action(s) supported inside the programme' s objective.
The overall objective should:

- be realistically achievable by the end of the project, or shortly after;
- describe the broader goal of the project for the benefit of its target group(s), pointing to the results (change) to be achieved;
- be measurable.

HYBES will use the Quadruple Helix approach and the Living Lab concept to develop and implement innovative actions that facilitate decarbonisation and advance carbon neutrality goals in each partner region. The project will develop policies and solutions that enable this shift to decarbonisation within defined districts, as well as proactively encouraging and facilitating behaviour change with stakeholders and local communities to further climate change adaptation and promote energy efficiency.

C.2 Project relevance and context

C.2.1 What are the common territorial challenge(s) or joint asset(s) that will be addressed by the project?

Referring to the challenges and opportunities identified in the Interreg NPA Cooperation Programme document, please describe which ones are going to be addressed by your project and why.

The HYBES project will address several of the common territorial challenges identified in the Interreg NPA Cooperation Programme document, primarily in relation to Priority 2: Strengthening the capacity for climate change adaptation, and resource sufficiency in NPA communities. The project will be closely aligned to this key priority and will particularly address 2.1. promoting energy efficiency and reducing greenhouse gas emissions. These strategic priorities have been identified due to their commonality across the NPA region, and, as such, will be the primary focus of the HYBES project.

In order to address these common priorities, the HYBES project will use the Quadruple Helix and the Living Lab concept to develop and implement decarbonisation zones (DZs) in each of the project partner regions (Norway, Ireland, Sweden, Iceland and Faroe Islands).This is an Irish concept; it is part of the Irish Government's Climate Action Plan 2019 for each Local Authority to have a Decarbonisation Zone. HYBES intends to transfer this concept to other partner regions. Through the multidisciplinary approach to decarbonisation zones, the project will animate new sustainable-driven ecological thinking and create a working example for a transparent, effective multi-partner governance structure - while also serving as a blueprint for further projects for the Partners, Cities, and other actors across the European Union. Partners will work closely with key stakeholders and community organisations to empower them to facilitate a reduction in carbon and greenhouse gases and an overall improvement in energy efficiency. This will be enabled by implementing a variety of innovative techniques and tools in each partner region to facilitate the development of DZs, including specific building retrofit techniques (and accompanying energy monitoring systems and sensors), as well as energy efficient transport solar power, initiatives and additional methods involving solar power, energy storage and techniques to ensure smart energy management and adequate grid capacity. This will be complemented through extensive consultation with stakeholders and community groups to educate and build capacity in the area of energy efficiency, renewables and decarbonisation to empower community groups and citizens to implement meaningful changes in their lives and behaviour. Sustainable energy education will also form a key component of engagement with internal staff within the project partners to further develop and enhance existing professional capacity. Furthermore, the HYBES project will consider and address the need for enhanced and focused curriculum relevant to the sector for students, and will work with all project partners to develop a new innovative curriculum/CPD component for future decision-makers and designers in the field of climate adaptation. This is an essential aspect of behavioural change, and seeks to strongly influence and mould effective and energy conscious young professionals to ensure that future development is embedded within the priority areas of energy efficiency and decarbonisation.

Fundamental to the HYBES project is the need for enhanced transnational collaboration between NPA partner regions to identify and implement best-practices and build professional capacity in the programme priority areas. Partners within the HYBES project have various degrees of expertise and experience within the fields of energy efficiency and public engagement and behaviour change; however, the common territorial challenges regarding decarbonisation and climate adaptation remain the same. The enhanced opportunity for transnational cooperation and collaboration is essential in order to address these challenges, and facilitate and implement effective tools, techniques and best-practices across the NPA region to meet the challenges of climate change.

Finally, the HYBES project will build on the results, activities and outputs of two previous NPA projects and associated funding: elighthouse (2016-2019) and Energy Pathfinder (2019-2022). The results and outputs achieved through these two previous NPA projects have had significant legacies in the partner regions, with the energy management software developed through elighthouse continuing to be implemented and utilised in Cork County Council to monitor public buildings managed by the local authority/municipality and the Energy Pathfinder Toolkit. The HYBES project will further expand and develop some of the key project outputs from these projects, adding further value and legacy to them, and demonstrating the benefits, success and tangible outputs of previous (and future) NPA funding. This is imperative in order to address the common territorial challenges within the NPA region, and the associated HYBES project partners.

C.2.2 How does the project approach the identified common challenges and/or opportunities and what is new about the approach the project takes?

Please describe the project approach chosen to address the challenges and opportunities described in C. 2.1. Please also explain how the approach goes beyond existing practice in the sector, programme area, and participating countries, demonstrating the innovativeness of the approach.

HYBES will approach the common territorial challenges outlined in C.2.1. by implementing a number of appropriate and innovative conceptual frameworks to address the transnational opportunities and interdependencies of the project thematic area, while the project will also develop and implement several unique and state-of-the-art tools and techniques. Central to the HYBES project approach will be the regional development and implementation of the Quadruple Helix Model of innovation, a critical and nuanced conceptual framework which recognises “four major actors in the innovation system: science, policy, industry, and society” (Schütz et al., 2019; “Co-shaping the Future in Quadruple Helix Innovation Systems: Uncovering Public Preferences toward Participatory Research and Innovation”). This conceptual underpinning offers an innovative and new approach to policy development and formation and will be a fundamental component of the HYBES project. Each partner region will collaborate within the Quadruple Helix model to develop the living lab concept to implement project decarbonisation actions to ensure adequate representation and decision-making capacity across public, private and community sectors. For example, within the Cork region, project partners Cork County Council (public sector), University College Cork (university), NCE (private and community) and associated partner CARO (public sector; national) will work collaboratively within the Quadruple Helix framework to develop and implement HYBES project actions in an identified decarbonisation zone in rural County. Cork, and this will ensure that the common territorial challenges within Priority 2 are addressed through a unique and nuanced framework which has yet to be fully embedded within existing practice in the programme area.

In combination with the Quadruple Helix approach, the HYBES project will work directly with the local community in each of the identified decarbonisation zones to facilitate a bottom-up approach to decision-making and empower local communities to adjust behaviours and implement actions in their daily lives that enable greater energy efficiency and decarbonisation. This bottom-up approach to decision-making is essential within the co-creation ethos of the EU, as well as reflective of the values of the European Charter of Local Self Government (Council of Europe, 1985), which outlines the fundamental principle of subsidiarity with regard to the delivery of public services and the decision-making processes of local government (Article 4). Once more this is a key attribute of the HYBES project which has yet to be fully implemented and embedded within the decision-making processes of public and private bodies in the NPA programme region and will offer a unique approach to addressing the common territorial challenges outlined in this proposal.

HYBES will also place a strong emphasis on facilitating and enabling energy efficiency behaviour

change within the designated decarbonisation zones, and this will be achieved through a dedicated work package focusing on community engagement. This is a central component of the HYBES project and focuses on empowering local communities and stakeholders to undertake actions and activities which actively contribute to the transition to carbon neutrality. HYBES will engage with professional staff within regional municipalities to develop and enhance their knowledge to build capacity in the realm of energy efficiency and decarbonisation, while the project will also work with third-level institutions to develop and enhance existing curriculum within predesignated professions in order to proactively influence and mould future decision-makers and designers. This is a key attribute of the HYBES project and offers an important and unique approach to addressing the necessity for behaviour change across all sectors of society.

Finally, the HYBES project will address the common territorial challenges by developing and implementing a variety of innovative tools and techniques to facilitate decarbonisation in each of the regional decarbonisation zones. This approach will also involve the development of a Joint Action Plan for the project to consider and outline the energy efficiency techniques that will be implemented to deliver a reduction in carbon footprint in each of the partner regions. These tools and techniques will be multi-faceted, covering a variety of sectors including innovative building retrofit techniques, bespoke energy monitoring systems, and energy efficient transport initiatives which will enable decarbonisation across the NPA region, and provide unique solutions that can be upscaled and replicated across the programme region. This will provide a significant legacy for the HYBES project and will provide easily-modifiable and replicable best-practice solutions for decarbonisation.

C.2.3 Why is transnational cooperation needed to achieve the project's objectives and result?

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.

Transnational cooperation is a quintessential component of the HYBES project and is essential in order to ensure the effective delivery and implementation of the project objectives and activities. As has been previously outlined in this proposal, the HYBES project will address common territorial challenges in the NPA programme area, particularly in relation to Priority 2: Strengthening the capacity for climate change adaptation, and resource sufficiency in NPA communities. Transnational cooperation and cross border collaboration is imperative in order to consider the shared experience of the partner regions within this priority area and facilitate decarbonisation and a reduction in CO2 emissions in the participating regions. This has also been reflected in the Interreg NPA Cooperation Programme document, which affirms “cumulatively at national and transnational scales impacts demonstrate an increased capacity for external engagement and collaborative action on key development issues for the area”, and this transnational cooperation is essential in order to deliver and achieve lasting project impacts and legacy.

Transnational cooperation is also essential to deliver the HYBES project objectives due to the geographical disparities and variances in knowledge across the project partner regions, which thus presents strong opportunities for the transfer of best-practices and sector-specific knowledge and education and build capacity in the programme priority areas. However, while regional disparities within the NPA programme area (and in the HYBES partners) exist in relation to expertise and experiences in the fields of energy efficiency and decarbonisation, as well as in stakeholder engagement and behaviour change, the common territorial challenges regarding decarbonisation remain the same. This enhanced opportunity for collaboration with partners in the NPA region provides a critical juncture through which this shared experience of a necessity for decarbonisation and climate adaptation can be addressed at a local, national and transnational level, and will facilitate the development and implementation of tools, techniques and regional best-practices across the HYBES project partner regions to approach the challenges of climate change. As such, International cooperation is necessary in order to package 'the know-how’ from all project partners and to enable the upskilling and capacity building of the energy, building and transport sectors within the municipalities, to ultimately contribute to achieving national, regional and local strategic energy objectives. This would not be possible at a local or national level, due to both a dearth of knowledge and expertise within all partner regions in relation to specific thematic focuses and activities of the HYBES proposal.

Additionally, in relation to the implementation of the Quadruple Helix Model of innovation within the HYBES project, as well as the key focus on behaviour change and community engagement, transnational cooperation once more provides an inherently valuable opportunity to both implement these new and innovative conceptual frameworks and activities and learn for experiences within the partner regions (Norway, Sweden, Ireland, Iceland & Faroe islands). This will provide a valuable juncture to both develop and embed the Quadruple Helix Model within the decision-making processes of each NPA region and learn from experiences and challenges in order to present a replicable and scalable best-practice framework for future legacy and implementation across the programme area. This will also be replicable in relation to the activities regarding community engagement and behaviour change, and the transnational component of the HYBES project will be critical in order to realise the potential of these activities at a local, national and transnational scale, and empower and facilitate communities across the programme area to implement important decarbonisation behaviours and actions in their daily lives. Subsequently, these key objectives would not be able to be achieved at a local or national level due to the evident transnational benefits and values that have been outlined, primarily the quintessential importance of sharing experiences and challenges in order to develop best-practice solutions which can be replicated across the NPA programme area.

C.2.4 Who will benefit from your project outputs?

Please select the relevant target groups from the drop-down list. 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 addressed in the activities (section C.4).

Target Group	Specification
Local public authority	A minimum of 10 local public authorities will benefit from the project outputs. Specifically, the project outputs will input into each of the Climate Adaptation Plans and policies for carbon neutrality in each of the partner regions and associated partners. The project will provide pilots, including Living Labs, which will produce a template for replication across the wider NPA region to facilitate stakeholder engagement in achieving decarbonisation targets.
Regional public authority	A minimum of 5 regional public authorities will benefit from the project outputs. Specifically, the project outputs and methodologies will feed into the strategic regional plans in each partner region. This will have significant input into regional climate adaptation measures.
General public	The general public will be intrinsically involved in the Living Labs model, which will provide them with a forum for public engagement into decarbonisation measures across the five partner regions. The project will also help build capacity, knowledge and understanding of climate change and decarbonisation with the general public.
Sectoral agency	As part of the Living Labs model and the overall project co-creation, sectoral agencies with a specific remit in climate adaptation, energy efficiency and decarbonisation will be included in all partner regions.
Higher education and research organisations	A key output of the project will be to influence the development of a decarbonisation and behavioural change focused curriculum/CPD component for inclusion in future curriculum. This will will seek to influence and develop future decision-makers and designers in the field of climate adaptation. Higher education and research organisations will also be involved in the Living Labs model across the partner regions.
Education/training center and school	A key output of the project will be to influence the development of a decarbonisation and behavioural change focused curriculum/CPD component for inclusion in future curriculum. This will will seek to influence and develop future decision-makers and designers in the field of climate adaptation. Education/training centers and schools will also be involved in the Living Labs model across the partner regions.
National public authority	A key output of the project will be to ensure that the work undertaken is in line with, and complements, national policy in the area of decarbonisation. National public authorities will be able to point to tangible outputs which are achieving decarbonisation goals at a local level. The project will provide best practice activities that can be replicated elsewhere.

Target Group	Specification
Interest groups including NGOs	Interest groups including NGOs, will benefit from the project outputs through the development of the Living Labs model, which will facilitate effective stakeholder engagement in each region.
SME	SMEs will benefit from the project outputs through the development of the Living Labs model, which will facilitate effective stakeholder engagement in each region.
Business support organisation	Business support organisations will benefit from the project outputs through the development of the Living Labs model, which will facilitate effective stakeholder engagement in each region. Particular focus on this area will be influencing green initiatives for business support.
Infrastructure and (public) service provider	Infrastructure and (public) service providers are key stakeholder for the HYBES project, and will be engaged with during the regionally Living Labs (where appropriate) and associated workshops. They will be a key component of building citizen knowledge in the area of decarbonisation.
Other	The project will disseminate project actions and outputs, outside of the NPA region, by participating in wider European platforms, such as the Covenant of Mayors and Energy Cities. This will also enabled through project dissemination activities with partner social media accounts and websites etc.

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

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

Strategy	Contribution
European Green Deal Strategy	HYBES aims to develop and implement decarbonisation zones and enable positive behaviour change within each NPA region. This will directly contribute to the decarbonisation goals of the EU Green Deal, which necessitates “prioritising energy efficiency, improving the energy performance of our buildings and developing a power sector based largely on renewable sources”. This is critical to achieve the 2030 climate objectives for the EU, and ultimately European carbon neutrality by 2050.
Other Strategy	The HYBES project activities will contribute to the goals and objectives of the EU Mission Charter: Adaptation to Climate Change, which aims to support at least 150 European regions and communities towards climate resilience by 2030. The HYBES project will benefit partner regions in supporting their application to be future members of the Mission Charter.

C.2.6 Which synergies with past or current EU and other projects or initiatives will the project make use of? How will your project make use of synergies with other Interreg projects (especially from other transnational and Arctic Cooperation programmes), and other EU, international or local initiatives (e.g. Horizon, Nora, national/regional programmes, etc)?

Project or Initiative	Synergy
elighthouse	The HYBES project will build on the results, experience and expertise of the previous NPA project elighthouse (2016-2019). In particular, the bespoke energy monitoring system that was developed for Cork County Council to monitor energy usage of public buildings managed by the local authority will be further expanded and developed in HYBES to monitor public housing stock, adding further value and legacy, and demonstrating the success of both current and future NPA funding.
NEES (Natural Energy Efficiency and Sustainability)	This project investigated and demonstrated how construction natural materials and nature-based processes could be used to reduce carbon emissions in construction. The outputs of the NEES project (carbon reduction techniques), and the capacity built, will help inform and guide the HYBES project, with particular insight into WP3 and WP4.
Energy Pathfinder	Current NPA project Energy Pathfinder (2019-2022) will also add further value to the HYBES project by providing expertise and access to key stakeholders in the realm of historic building preservation and energy efficiency retrofit, and act as a best practice solution in WP3. HYBES will also explore the potential for further implementation and testing of the energy toolkit developed by the project and demonstrate the toolkit as a best-practice for the NPA programme area.
North-European Energy Cluster (N-EEC)	Joint action with three separate transnational European projects in the northern peripheral regions of Europe; elighthouse (NPA), Renovation Center (Interreg Botnia-Atlantica), and ICNB (Interreg Nord). N-EEC focused on creating added value by further disseminating project outputs, and this experience will help form and shape dissemination activities for the HYBES project.
Indu-Zero	Indu-Zero project, is initiated by Interreg North Sea Region. The projects partners has develop a renovation packages to be used on semi-detached houses, terraced houses, and apartment buildings from the year 1950 – 1985. Due to its integrated approach, INDU-ZERO is a 'game changer' in the construction sector. It covers the measurement of the houses, the product design and production process to the factory design, logistics and realization on the construction site.

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

Please describe the experiences/lessons learned that the project draws on, and other available knowledge the project builds on.

As has been previously outlined, the HYBES project will build on previous NPA funded projects, synergies and experiences to deliver innovative activities within the partner regions to facilitate decarbonisation and progress the pathways to climate neutrality. These projects and experiences have assisted the project partners in expanding and enhancing knowledge, capacity and expertise in the area of energy efficiency and decarbonisation, which has helped shape the HYBES project proposal and will ensure that the project can successfully deliver on the proposed WPs and associated activities. For example, the experiences and lessons learned through the development of Municipal Building Energy Monitoring Tool in the elighthouse project demonstrates strong collaboration and cooperation between partners to develop a tangible output which has had a substantial legacy for the relevant partner (Cork County Council). The HYBES proposal is intended to build on this positive experience and deliver similar successful and tangible outputs and project benefits.

Additionally, all partner regions have unique and distinct policy targets for the reduction of greenhouse gases by 2030. Achieving these goals is set out in region specific policy legislation, which will provide a key source of knowledge and underpinning to further expand and build on during the lifetime of the HYBES project. Examples include Climate strategies in Bodø Municipality (2019) and Nordland County (2020) in Norway with the goal of reducing greenhouse gases by 60% in 2030 and promoting the transition to low carbon society. In Ireland, local Authorities are at the front line of climate adaptation and as a consequence, the HYBES project will have a key role in the delivery of the future Climate Action Plans. Similarly, Sweden, Iceland and the Faroe Islands have distinct strategic climate policies which can influence and be built upon during the HYBES project.

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.

Central to the HYBES project is the use of the Quadruple Helix approach and the living lab concept to develop and implement innovative actions that facilitate decarbonisation and advance carbon neutrality goals in each partner region. This approach necessities that each partner region includes partners (whether full or associate) from the four strands of the quadruple helix (municipalities, universities/research centres, businesses and citizens) and this has acted as an important underpinning for the partnership composition. For example, within the Cork region, Cork County Council (municipality and citizen), UCC (University), NCE (SME) and associated partners CARO (regional body and citizen) and Carbery Housing Association(Cork) will combine and support project activities to establish the quadruple helix and enable decarbonisation goals in the region. This approach is essential to achieving the project goals as it brings together the multiple facets and intricacies of collaboration at a local level to directly influence decision-making and policy development and is replicated across the partner regions.

Across the project, all partners have organisational strategic objectives to develop and implement energy efficient solutions for buildings and transportation. However, the degree to which knowledge and capacity around renewable energy solutions differs from region to region and is embedded within unique socio-economic characteristics. HYBES brings together different organisations across the NPA who have complementary expertise and skillsets suited to the delivery of decarbonisation goals in order to build and enhance citizen capacity, facilitate behavioural change and ultimately achieve the key project objectives. The transnational nature of this proposal will enable and support collaboration between partners to develop best optimal solutions, identify best-practices, and deliver collaborative innovative pilots for decarbonisation.

C.4 Project work plan

Number	Work package name
1	Changing citizen behaviour: Living Lab for Co-Creation and capitalisation for decarbonization.
2	Energy efficiency and management: Monitoring and assessment
3	Flexible renewable solutions for the NPA region

Work package 1

Work package title

Changing citizen behaviour: Living Lab for Co-Creation and capitalisation for decarbonization.

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 by the end of the project;
- specific;
- measurable – indicate the change aimed for.

.

To facilitate societal impact using citizen-centred and participatory design principles, allowing cocreation of innovative solutions for decarbonisation, and to develop the living lab as a method achieving behavioural change. Led by UCC, CCC and NRI

To be able to deliver a work package, the project may need to engage with relevant target groups, for example through awareness raising, changing attitudes or beliefs, or changing behaviour. For this reason, applicants are asked to formulate one or more communication objectives.

A Communication Strategy will explain how objectives will be achieved. It will map out the target groups to be reached (stakeholders) and how they will be reached, at a national and regional level. The strategy shall specify channels and methods of communication including social media, public events, webinars and the project web site.

Activities

Activity 1.1	
Title	Development of the Joint Action Plan and regional policy analysis.
Start period	Period 1, 1 - 6
End period	Period 2, 7 - 12

Activity 1.1	
Description	Led by CCC. A Joint Action Plan (JAP) will be developed to provide a Regional Policy Agenda for each partner region creating a roadmap or blueprint to maximise the potential of the Quadruple Helix actors in the area of decarbonisation within and across each of the regions. The process will in itself strongly contribute to the level of organisational engagement and collaboration and will be seen to also encourage new opportunities for regional citizens, business communities and research centres to become more deeply embedded in the regional decarbonisation policy ecosystem. The JAP will identify and specify key objectives, outline important actions and assign responsibilities for delivering those actions either within the time frame of the project or if not, within a specific future time period. The document will be developed through a highly iterative process with collaboration between partner regions.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.1

Running number	Deliverable title	Description	Delivery period
D.1.1.1	Joint Action Plan for the HYBES project.	The Joint Action Plan (JAP) will provide a roadmap to maximise the quadruple helix actors in the area of decarbonisation within, and across, the partner regions. It will specify key objectives, outline actions and assign responsibilities for delivering those actions.	Period 2 , 7 - 12

Activity 1.2	
Title	Communication and Dissemination Strategy and implementation.
Start period	Period 1, 1 - 6
End period	Period 6, 31 - 36

Activity 1.2	
Description	Led by NRI. This Activity will involve the development of a Communication and Dissemination Strategy for the HYBES project to ensure that the project achieves its objectives. The strategy will map out the target groups to be reached (stakeholders) and how they will be reached, at a national and regional level. The Activity will subsequently co-ordinate the implementation of this strategy by the various regions, working in liaison with communication officers in each region. The strategy shall specify channels and methods of communication including social media, public events, webinars and the NPA mini-website.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.2

Running number	Deliverable title	Description	Delivery period
D.1.2.1	Communication Strategy	A Communication Strategy will be designed to communicate core aims and objectives of the project in a clear and concise manner. The strategy will identify communication objectives, target audiences, key messages to disseminate and the appropriate tools & activities to communicate project outputs.	Period 1 , 1 - 6
D.1.2.2	Tools for communication and dissemination	It is important to find the right mix of tools to properly convey the project message. Activities will include input to the NPA project mini-website, a project logo, social media tools, promotional materials, networking events and publications such as press releases, newsletters and brochures.	Period 2 , 7 - 12

Activity 1.3	
Title	Identify and design a Living Lab model to be implemented for activities in the partner regions.
Start period	Period 1, 1 - 6
End period	Period 1, 1 - 6

Activity 1.3	
Description	Led by UCC. Activity 1.3 will identify and design a co-creation Living Lab model for evidence-based Open Innovation (OI) that is linked to the UN Sustainable Development Goal's, the objectives of New European Bauhaus and the European Green Deal, and fundamental to understanding decarbonisation strategies. Activities will evolve a co-creation process, based on 'Design Thinking' steps that situates the cultural, societal, environmental, and regulatory contexts impacting decarbonisation. It will also involve an impact-by-design research platform that is based around ideation, co-creation solutions and implementation. This activity is an essential component of the project and will set the overall tone for citizen engagement and capacity building as a means of delivering designated Decarbonisation Zones in rural and peripheral locations across the partner regions.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.3

Running number	Deliverable title	Description	Delivery period
D.1.3.1	Living Lab model Report	Provide an evidence informed Living Lab co-creation model in the five partner regions - where society, government, business and academia (quadruple helix) work together to identify environmental opportunities and solve challenges around decarbonisation in the NPA region.	Period 1 , 1 - 6

Activity 1.4	
Title	Consultative Stakeholder Workshops
Start period	Period 1, 1 - 6
End period	Period 2, 7 - 12

Activity 1.4	
Description	Led by UCC. Using the Living Lab (LL) model and co-design process, Activity 1.4. will conduct and replicate a series of consultative workshops with key regional Quadruple Helix stakeholders across all partner regions. This collaborative inter-regional approach will allow the identification of key applications and specific functions (activities) on which there is apprehension and relative areas of interest which require further consideration. These consultative co-creation roundtables will be based on 'Design-Thinking' steps, focusing on topics that make decarbonisation activities more accessible and effective. Living Lab Structure: (A)Understanding and ideating:(i)Engage and Empathize(ii)Frame(iii)Ideate Together (B)Co-creating solutions:(i)Co-Create (C)Implementing Creations:(i)Anchor LL topics include: best practice transfer, social inclusion, skills and knowledge transfer, researcher mobility, access to funding, and; industry/academia engagements and impacts on policy development.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.4

Running number	Deliverable title	Description	Delivery period
D.1.4.1	Five Quadruple Helix (QH) regional stakeholder workshops.	Organisation and hosting of five regional stakeholder workshops. These regional workshops will kick-off the Living Labs (LL) model in the partner regions.	Period 2 , 7 - 12
D.1.4.2	Report on Stakeholder workshops and key recommendations for policy.	Provide a report that captures the learning from the stakeholder workshops, and comparatively synthesises the findings from all partner regions, as well as provide recommendations for future policy.	Period 2 , 7 - 12

Activity 1.5

Activity 1.5	
Title	Interactive Engagement Spaces and Co-Creation Cafes
Start period	Period 2, 7 - 12
End period	Period 5, 25 - 30
Description	Led by UCC. We will create a collaborative, transnational interactive learning space consisting of 3 virtual Co-creation Cafes. These will be designed and implemented during the project with the intention to exploit them beyond the project life for a permanent support to co-creation processes. The Co-creation Cafes will facilitate ongoing interaction among the HYBES target groups - ensuring gender balance and a diverse mix of citizens of all ages, educational backgrounds. The aim of creating the Co-Creation Cafes is to facilitate experiential learning and a deeper understanding of the benefits of co-creation processes - where the engagement produces new cultural, environmental, societal and regulatory alignments.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.5

Running number	Deliverable title	Description	Delivery period
D.1.5.1	Report on implementation of three Co-Creation Cafes.	This will involve a report on the methodology, implementation and feedback arising from the implementation of three Co-Creation Cafes.	Period 5 , 25 - 30

Activity 1.6	
Title	Cultural Events and Festivals as platforms for developing decarbonisation awareness
Start period	Period 2, 7 - 12
End period	Period 5, 25 - 30

Activity 1.6	
Description	Led by UCC. Using the Living Lab concept and Co-creation Cafe, a strategic objective of this activity is to demonstrate and build awareness towards decarbonisation around cultural events. The project will engage in a minimum of two significant cultural events, creating public platforms that create awareness around low carbon societies. It will work in parallel with these cultural events as means to disseminate carbon neutral benefits to diverse public audiences - while paying particular attention to elucidate the cultural meaning and background of these measures to non-specialist and new audiences. In these ways, the co-creation processes will make use of cultural events as a means to promote decarbonisation - particularly relevant in the context of Bodø being appointed as EU Capital of Culture in 2024, Nova Gorica (2025), and Oulu (2026).
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.6

Running number	Deliverable title	Description	Delivery period
D.1.6.1	Reports on Cultural Events and Festivals as platforms for developing decarbonisation awareness.	This will contain a report on the methodology, implementation and feedback arising from the implementation of various Cultural Events and Festivals as platforms for decarbonisation awareness.	Period 5 , 25 - 30

Activity 1.7	
Title	Guide to deliver the Living Labs model as a tool for the delivery of behavioural change for decarbonisation in other NPA regions
Start period	Period 4, 19 - 24
End period	Period 6, 31 - 36

Activity 1.7	
Description	Led by UCC. Using the Living Labs model devised and implemented in WP2, this activity will develop a guide which will identify Co-Design opportunities for improving energy performance and decarbonisation and will be structured in three parts: MAKING, SEEING, and INFORMING - such that it acts as a Guidance for Future decarbonisation projects across the Partner Regions and the EU. Each part will include a way of looking at project stages called a 'temporal lens' (e.g., looking back, forward, both). Focusing on the factors necessary to facilitate replication, this activity will include analysis of the barriers and enablers to implementation and will provide a critique of the regional disparities and socio-economic factors that influence the success of implementing the Living Labs model as a tool for empowering all citizens to achieve decarbonisation. This guide will describe the inherent value of the project and its activities to the Partners and to different civic and public audiences.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.7

Running number	Deliverable title	Description	Delivery period
D.1.7.1	Technical guide on the Living Labs as a tool for delivering behavioural change for decarbonisation.	Evidence-based technical guide on the experience of partners and research expertise.	Period 6 , 31 - 36
D.1.7.2	Stakeholder report on the effectiveness of the Living Labs model.	Evidence-based stakeholder report on the experience of the Living Labs model. A minimum of one workshops will be held in each partner region to gather stakeholder opinion on the Living Labs model.	Period 6 , 31 - 36

Activity 1.8	
Title	Capitalisation Plan
Start period	Period 4, 19 - 24

Activity 1.8	
End period	Period 6, 31 - 36
Description	Led by CCC. A Capitalisation Plan will be developed which will build on the knowledge and objectives of the Joint Action Plan (JAP) and will comprehensively research and explore resources and other supports for building new synergies for the delivery of 'smart' innovative decarbonisation post-project completion. Potential future funding areas, including National and European funding, will be explored. The Capitalisation Plan will support the Quadruple Helix clusters in each region to identify potential opportunities to secure future investment in decarbonisation research and to broker new partnerships between citizens, research, businesses, and the public sector to support new carbon neutrality initiatives and policy. A key objective of the Capitalisation Plan will be to ensure the continued use and operation of the Living Lab mode as a means of delivering decarbonisation goals in rural and peripheral areas.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 1.8

Running number	Deliverable title	Description	Delivery period
D.1.8.1	Capitalisation Plan for the HYBES project	Capitalisation Plan for the HYBES project which will build on the objectives of the JAP and will consider actions, funding opportunities and policy recommendations to support the legacy of the project outputs and the continuation of the Living Labs model for delivering behavioural change.	Period 6 , 31 - 36

Outputs

Output 1.1	
Output Title (short)	Living Labs model as a tool to facilitate behavioural change for decarbonisation
Programme Output Indicator	RCO116_2.1: Jointly developed solutions
Measurement Unit	solutions
Target Value	1.00

Output 1.1	
Delivery period	Period 6, 31 - 36
Output Description	The Output is a validated Living Lab model based on feedback from beneficiaries in the five partner regions, which will be rigorously collected and analysed and will provide the basis for disseminating and replicating the model in other regions. The ambition of Hybes is to learn from using the living lab approach and to improve it as a tool for behavioural change of stakeholders and citizens.

Output 1.2	
Output Title (short)	HYBES transnational partnership
Programme Output Indicator	RCO87_2.1: Organisations cooperating across borders
Measurement Unit	organisations
Target Value	13.00
Delivery period	Period 6, 31 - 36
Output Description	This indicator counts the number of HYBES partners and associated partners.

Work package 2

Work package title

Energy efficiency and management: Monitoring and assessment

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 by the end of the project;
- specific;
- measurable – indicate the change aimed for.

.

To analyse how locally produced RES can be utilized by buildings in the area, and to facilitate upscaling of best practices energy efficient models, and to pilot monitoring social and rural housing energy systems. Led by UmU with City of Umeå

To be able to deliver a work package, the project may need to engage with relevant target groups, for example through awareness raising, changing attitudes or beliefs, or changing behaviour. For this reason, applicants are asked to formulate one or more communication objectives.

To disseminate information to the public and relevant stakeholders in target regions and will set up workshops and events aimed at developing a dialogue for sharing best practices. Key targets groups will include Local Authorities, community networks, businesses, social tenants, teachers and students.

Activities

Activity 2.1	
Title	Macro energy analysis using the LEAP modelling technique.
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24

Activity 2.1	
Description	Led by UmU, this will implement a macro energy analysis using simulation tool within a town district in Umea. This entails simulation studies and data gathering of retrofit need for buildings to enable the development of a decarbonization zone(DZ).The aim is to conduct an energy-analyses to determine what is possible technically and how locally produced RES can be utilized by buildings in the area. The model will include a simulation of PV-cells and will conduct a simulation of selected buildings to see the potential of energy efficiency and energy generation in the area. Based on the data and simulations the aim is to develop recommendations/scenarios for the decision makers to facilitate transition towards DZs. We will compare simulation results from Umeå and the Twin City platform in Bodø to identify advantages to a district level approach demonstrating pathways towards net-zero emissions.
Partner(s) involved	BK, NRI, Umeå, UmU

Deliverables 2.1

Running number	Deliverable title	Description	Delivery period
D.2.1.1	Technical report on macro energy analysis for delivery of DZs in Umea and Bodø.	Will report the results of a macro level simulation for the delivery of DZs in Umeå, and policy recommendations for the NPA region. We also report on the possibility to learn from different approach to visualization of macro level energy use Umeå and in Bodo (Twin City visualization platform).	Period 5 , 25 - 30

Activity 2.2	
Title	Best practice models for energy efficiency, management and monitoring.
Start period	Period 1, 1 - 6
End period	Period 3, 13 - 18

Activity 2.2	
Description	Led by the city of Umeå. This activity will take a collaborative approach to document and disseminate a minimum of five best practice tools, models or techniques that are currently being implemented in the NPA partner regions to manage, monitor and assess energy efficiency. The key objective of this task is to facilitate knowledge-transfer, to identify best practices which can be replicated across the NPA, and to facilitate improvement and upscaling of these best practices through partner collaboration. This will allow partner regions to influence best practice improvement and implementation. This will be a key input for the legacy of the project. Best practices include (but are not limited to): 1. Climate View (Umea) 2. Rural Municipal Building Energy Management Tool (Cork) 3. Twin City Energy Management Tool (Bodo) 4. Energy Pathfinder (NPA regional partners) 5. Energy Key (US)
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 2.2

Running number	Deliverable title	Description	Delivery period
D.2.2.1	Report on best practice models for energy efficiency, management and monitoring.	This deliverable will provide a detailed analysis of the best practices identified by the project in the area of energy efficiency, management and monitoring. This will provide key inputs for the legacy of the project.	Period 3 , 13 - 18

Activity 2.3	
Title	Energy monitoring and management tool for housing.
Start period	Period 1, 1 - 6
End period	Period 5, 25 - 30

Activity 2.3	
Description	Led by CCC. CCC, OS, US and Umea will collaborate and develop an innovative energy monitoring tool(s) to cater for social and rural housing buildings. This will build upon the experience of developing the Municipal Building Energy Monitoring Tool (under previous NPA and national funding) by extending functionality to cater for housing. This will involve developing a pilot to monitor the effects of a social and rural housing energy systems in relevant pilot regions, which will demonstrate the benefits of housing retrofit to the end user. This is a key component of the DZs in each region and will assist the partners in demonstrating the value, both financially and environmentally, of housing retrofit to tenants. This is currently a concern due to a lack of awareness, which is preventing tenants from realising the financial rewards of energy retrofit. At least two of the collaborating regions will provide a number of housing units to develop, trial and test the upscaled tool(s).
Partner(s) involved	CCC, NCE Insulation , OS, Umeå, UmU, US

Deliverables 2.3

Running number	Deliverable title	Description	Delivery period
D.2.3.1	Technical report on energy Monitoring and Management tool for social housing.	This deliverable will be a report on the upscaled Rural Municipal Building Energy Monitoring Tool which will be implemented in housing units in Ireland and Iceland.	Period 6 , 31 - 36

Activity 2.4	
Title	Energy monitoring and behavioural change for educators and educational facilities.
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24

Activity 2.4	
Description	Led by NCE. The Cork region will collaborate with the Swedish and Norwegian regions to develop a behavioural change energy management system for 2nd level students, and 3rd level Architecture students, which will provide a live demonstration on the benefits of decarbonisation. This tool will be developed collaboratively and piloted in Cork and will provide live data streams and monitoring reports. The energy monitoring will allow schools to understand their energy usage which will provide key insights into the steps and processes required to reduce their energy consumption, resulting in monetary and carbon savings. Measuring and verifying energy usage prior to implementing any corrective actions gives schools a clear view of the benefits and rewards affiliated with future energy reduction strategies. An educational module will be implemented over a 12 week term as part of the pilot and will educate young people and future professionals in the areas of sustainability and DZ awareness.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, UCC, Umeå

Deliverables 2.4

Running number	Deliverable title	Description	Delivery period
D.2.4.1	Collaborative report on energy monitoring and behavioural change for educational facilities.	This will provide a collaborative report on energy monitoring and behavioural change for educational facilities.	Period 5 , 25 - 30
D.2.4.2	12 week educational module.	This deliverable will develop and deliver a 12 week educational module in the Cork DZ pilot.	Period 5 , 25 - 30

Activity 2.5	
Title	Decarbonisation as an influencer for educational curriculum change
Start period	Period 4, 19 - 24
End period	Period 6, 31 - 36

Activity 2.5	
Description	Led by NCE. Using the Carbon Schools initiative collaboratively designed and implemented in WP2, this activity will document and develop a roadmap to deliver curriculum change in education to influence behavioural change for the delivery of decarbonisation across the NPA region (and further afield). The roadmap will provide tangible steps which will enable the replication of the Carbon Schools model in other educational settings, with the medium-term goal of influencing third-level education and continued professional development (CPD) as a means of building capacity and knowledge in the area of decarbonisation. This is an important objective which seeks to strongly influence and mould effective and energy conscious young professionals and future decision-makers to ensure that future developments in the area of decarbonisation are embedded within the lenses of energy efficiency and sustainability policy and implementation.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 2.5

Running number	Deliverable title	Description	Delivery period
D.2.5.1	Report on the potential for educational curriculum change for the delivery of decarbonisation goals.	This report will use the lessons learnt from WP2 activities to develop a roadmap for the delivery of educational curriculum change to build the capacity of new and existing professionals in the area of decarbonisation.	Period 6 , 31 - 36

Activity 2.6	
Title	Citizen’s guide to decarbonisation: An end-users guide to influence behavioural change.
Start period	Period 3, 13 - 18
End period	Period 6, 31 - 36

Activity 2.6	
Description	Led by CCC. Using the learnings from WP2 and WP3, this activity will develop a citizen's guide to influence behavioural change and deliver decarbonisation activities. This guide will include guidance and evidence-based support to demonstrate to end-users the value, both environmental and financial, of implementing decarbonisation measures at both an individual and organisational level. This guide will offer advice for end-users, including building managers, businesses, and housing tenants, and will identify the benefits of decarbonisation techniques. Activity 2.6 will allow municipalities to demonstrate the transition from fossil-fuel to green energy through flexible renewable energy sources. A key objective of this guide is to empower end-users to adapt and change behaviour by providing pro-active guidance and advice to enhance awareness and knowledge of decarbonisation. The guide will also provide decision-makers with a step-by-step framework to engage with future end-users.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 2.6

Running number	Deliverable title	Description	Delivery period
D.2.6.1	Citizen's guide to decarbonisation: An end-users guide to influence behavioural change.	This will provide an end-users guide to influence behavioural change. This guide will include guidance and evidence-based support to demonstrate to end-users the value, both environmental and financial, of implementing decarbonisation measures at both an individual and organisational level.	Period 6 , 31 - 36

Outputs

Output 2.1	
Output Title (short)	Jointly developed energy monitoring and management tool for housing
Programme Output Indicator	RCO116_2.1: Jointly developed solutions
Measurement Unit	solutions

Output 2.1	
Target Value	1.00
Delivery period	Period 6, 31 - 36
Output Description	CCC, OS, & US will collaborate to develop an energy monitoring and management tool for housing. This will be implemented in social and rural housing units in the partner regions and will assist both the municipalities and citizens to demonstrate the value, both financially and environmentally, of housing retrofit. This tool will be transferable across the NPA region for energy monitoring and assessment. Achievement of the output will be demonstrated by a final report on the software.

Output 2.2	
Output Title (short)	Jointly developed energy monitoring and educational tool for educators and educational facilities
Programme Output Indicator	RCO116_2.1: Jointly developed solutions
Measurement Unit	solutions
Target Value	1.00
Delivery period	Period 5, 25 - 30
Output Description	A collaborative approach will be enabled to develop an energy monitoring and educational tool that will be piloted and tested in the Cork Decarbonisation Zone.

Work package 3

Work package title

Flexible renewable solutions for the NPA region

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 by the end of the project;
- specific;
- measurable – indicate the change aimed for.

.

To demonstrate how solar and geothermal energy and smart energy solutions can help achieve Near Zero Energy Buildings in remote and Arctic communities, and how flexible RES in districts create storage and sharing systems for EV. Led by NCC and CCC

To be able to deliver a work package, the project may need to engage with relevant target groups, for example through awareness raising, changing attitudes or beliefs, or changing behaviour. For this reason, applicants are asked to formulate one or more communication objectives.

Hybes will develop guidelines to support behavioural change enhancing awareness and knowledge of decarbonisation.

Activities

Activity 3.1	
Title	Demonstrate solar energy solutions for decarbonisation.
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24

Activity 3.1	
Description	Led by NCE. NCE will work with NRI and Bodø to pilot and demonstrate flexible solar energy solutions in their respective regions. This will involve a minimum of four pilot sites, which will be jointly implemented. In Cork, NCE, with Associate Partner CHA will provide a pilot site of four social homes retrofitted with the installation of a combination of solar panels, storage, smart meters, and storage heaters where energy consumption will be managed through a cloud based management system. Another NCE pilot will be a community building incorporating solar panels and deep fabric retrofit. Bodø will provide two pilot sites implementing solar energy solutions incorporating technologies that include both top roof solar panel and BIPV (facade integrated) systems. These 4 pilots will act as showcases and examples to demonstrate the value of solar energy energy, storage and smart energy solutions as a pathway to obtaining Near Zero Energy Buildings (NZEBs) in remote and arctic climate zones.
Partner(s) involved	BK, CCC, NCE Insulation , NRI

Deliverables 3.1

Running number	Deliverable title	Description	Delivery period
D.3.1.1	Report on solar energy solutions for dec arbonisation.	This deliverable will provide an overview report and analysis on solar energy solutions for decarbonisation in Norway and Ireland and how best practice can influence replication in other regions	Period 6 , 31 - 36

Activity 3.2	
Title	Energy reduction and fossil fuel replacement.
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24

Activity 3.2	
Description	Led by NCE. Within the NPA region, the reliance on fossil fuels is still prevalent, and presents significant challenges in the transition to climate neutrality. Many citizens within rural and peripheral areas heavily rely on fossil fuels for home heating and are sceptical of alternative solutions. This collaborative activity will demonstrate the value of building retrofit for tenants in partner regions. Cork and Faroe Islands regions will both provide sites for the piloting of housing retrofit techniques. Within Cork, four social houses will be retrofitted to achieve a B2 energy rating including fabric and attic insulation, air tightness and integration of heat pumps. These houses will also be used to test the Energy Monitoring and Management tool for housing developed in WP3. US will describe retrofitting of private, municipal and public buildings which are facilitating the transition away from oil heating in buildings to more sustainable methods enabling decarbonisation.
Partner(s) involved	CCC, NCE Insulation , Umeå, UmU, US

Deliverables 3.2			
Running number	Deliverable title	Description	Delivery period
D.3.2.1	Technical report on the benefits of energy retrofit to facilitate fossil fuel replacement.	This deliverable will report on the benefits of retrofit to facilitate fossil fuel replacement, and will report on the implementation of the pilots sites in the two partner regions.	Period 6 , 31 - 36

Activity 3.3	
Title	Geothermal solutions for decarbonisation.
Start period	Period 1, 1 - 6
End period	Period 5, 25 - 30

Activity 3.3	
Description	Led by OS. Geothermal systems are widely used in Iceland, already preventing fossil fuel use for heating. The condition for geothermal energy in Norway and the Faroe Islands is less optimal for direct use, but is currently being utilised with heat pumps. Geothermal heating systems have advantages also in peripheral areas either of grid or outside district heating areas, as long as the electricity required is also renewable. Geothermal or ground source heating systems in future will play a vital role as storage systems and enable efficient and flexible use of renewable energy resources. Three cases will explore the geothermal energy systems, and this transnational cooperation will facilitate capacity building and learning: 1. Iceland: Off-grid renewable electric power generation for heat pumps and charging stations in remote areas and energy solutions for boats at off-grid islands. 2. Norway: Two municipal buildings in Bodø. 3. Faroe islands: Small residential area in Faroe Islands
Partner(s) involved	BK, NRI, OS, US

Deliverables 3.3

Running number	Deliverable title	Description	Delivery period
D.3.3.1	Technical report on geothermal energy solutions for d ecarbonisation .	This deliverable will document the benefits and effects of geothermal systems in peripheral areas either off grid or outside district heating areas. Also the report will document geothermal energy as a flexible storage technology in combination with other renewable energy sources.	Period 5 , 25 - 30

Activity 3.4	
Title	Energy infrastructure for low carbon transport systems
Start period	Period 1, 1 - 6
End period	Period 4, 19 - 24

Activity 3.4	
Description	Led by NRI. Transportation represents a main contributor to CO2 emissions. There is an urgent need to speed up the transformation of transport systems to use RES. In towns such as Umeå and Bodø charging structures for EV is built up. Scaling up the use of EV depends on co-creation processes in planning for optimal deployment of charging points. There are challenges for energy infrastructure especially in peak demand periods. Particular focus will also be in relation to peak energy savings and infrastructure performance. To develop solutions to ease the energy infrastructure is essential. In Umeå and Bodø we will investigate two cases of flexible RES in city districts to create a storage and sharing systems for EV. Another case in Bodø is the greening of maritime transportation. National authorities have decided to build a hydrogen powered ferry between Bodø and Lofoten. The focus of this activity is the planning for the infrastructure for a hydrogen supply system and power station.
Partner(s) involved	BK, CCC, NCE Insulation , NRI, OS, UCC, Umeå, UmU, US

Deliverables 3.4

Running number	Deliverable title	Description	Delivery period
D.3.4.1	Report: Create a energy system for storage and energy sharing in city districts for EV.	In two city districts in Umeå and Bodø we will develop a model for storage and sharing RES energy for EV charging. This model is used to give proactive guidance to district citizens and DZ decision makers. The model including guidelines will be applicated in a partner region.	Period 6 , 31 - 36

Outputs

Output 3.1	
Output Title (short)	Pilot Solar installations in Ireland and Norway and their impact on Decarbonisation.
Programme Output Indicator	RCO84_2.1: Pilot actions developed jointly and implemented in projects
Measurement Unit	pilot actions

Output 3.1	
Target Value	4.00
Delivery period	Period 6, 31 - 36
Output Description	The project will provide four pilot sites (two in Cork and two in Bodø, which have a mixture of buildings that have been retrofitted during the lifetime of the project with a combination of solar panels, storage, fabric insulation and smart meters. These units will be demonstrator sites to educate citizens on the financial and environmental benefits of decarbonisation. This output will be summarised in D.3.1.1.
Output 3.2	
Output Title (short)	Retrofit of buildings in Cork and Faroe Islands
Programme Output Indicator	RCO84_2.1: Pilot actions developed jointly and implemented in projects
Measurement Unit	pilot actions
Target Value	2.00
Delivery period	Period 6, 31 - 36
Output Description	This output will be the retrofit of buildings in two pilots in Cork and Faroe Islands and will involve fabric and attic insulation, airtightness and integration of heat pumps. This will act as a tangible demonstrator for the success of building retrofit, in terms of the transition from fossil fuels to clean energy. The Cork sites will also act as a demonstrator for the Energy Monitoring and Management tool for housing developed in WP2.
Output 3.3	
Output Title (short)	Flexible RES solutions using geothermal off-grid in Iceland, Norway, and the Faroe Islands
Programme Output Indicator	RCO84_2.1: Pilot actions developed jointly and implemented in projects
Measurement Unit	pilot actions
Target Value	3.00
Delivery period	Period 6, 31 - 36

Output 3.3	
Output Description	This output will evaluate tree pilots. On behalf of these pilots, we will: 1. Document solutions and the effect of flexible RES based on geothermal energy in off grid districts. 2. Evaluate solutions using geothermal energy as a storage system in combination with other RES. 3. Monitor actual energy and functionality. This output will contribute to up scale the transition towards green energy implementing two solutions.
Output 3.4	
Output Title (short)	Model and guidelines for storage and sharing in city districts for EV based on RES resources in Sweden and Norway
Programme Output Indicator	RCO84_2.1: Pilot actions developed jointly and implemented in projects
Measurement Unit	pilot actions
Target Value	2.00
Delivery period	Period 6, 31 - 36
Output Description	This output will evaluate two pilots that will show how to optimize energy sharing for district transport needs will avoid sub optimizing and support low-carbon transformation in cities and allow for knowledge sharing and potential replication.
Output 3.5	
Output Title (short)	HYBES model for increased energy efficiency and local energy generation as a scalable method
Programme Output Indicator	RCO116_2.1: Jointly developed solutions
Measurement Unit	solutions
Target Value	1.00
Delivery period	Period 6, 31 - 36

Output 3.5	
Output Description	This solution gathers the learning from the pilot actions, demonstrating the value of solar energy energy, storage and smart energy solutions as a pathway to obtaining Near Zero Energy Buildings (NZEBs) in remote and Arctic communities. This includes geothermal energy, showing its vital role as a storage system to enable efficient and flexible use of renewable energy resources. Furthermore, it includes a model for how flexible RES in city districts create a storage and sharing systems for EV.

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	RCR104_2.1: Solutions taken up or up-scaled by organisations
Measurement unit	solutions
Baseline	0.00
Target value	1.00
Delivery period	Period 6, 31 - 36
Result description	CCC, OS, & US will collaborate to develop an energy monitoring and management tool for housing. This will be implemented in social and rural housing units in the partner regions and will assist both the municipalities and citizens to demonstrate the value, both financially and environmentally, of housing retrofit. This tool will be transferable across the NPA region for energy monitoring and assessment. Achievement of the output will be demonstrated by a final report on the software, and is further outlined in D.2.3.1. This result is related to Output 2.1.

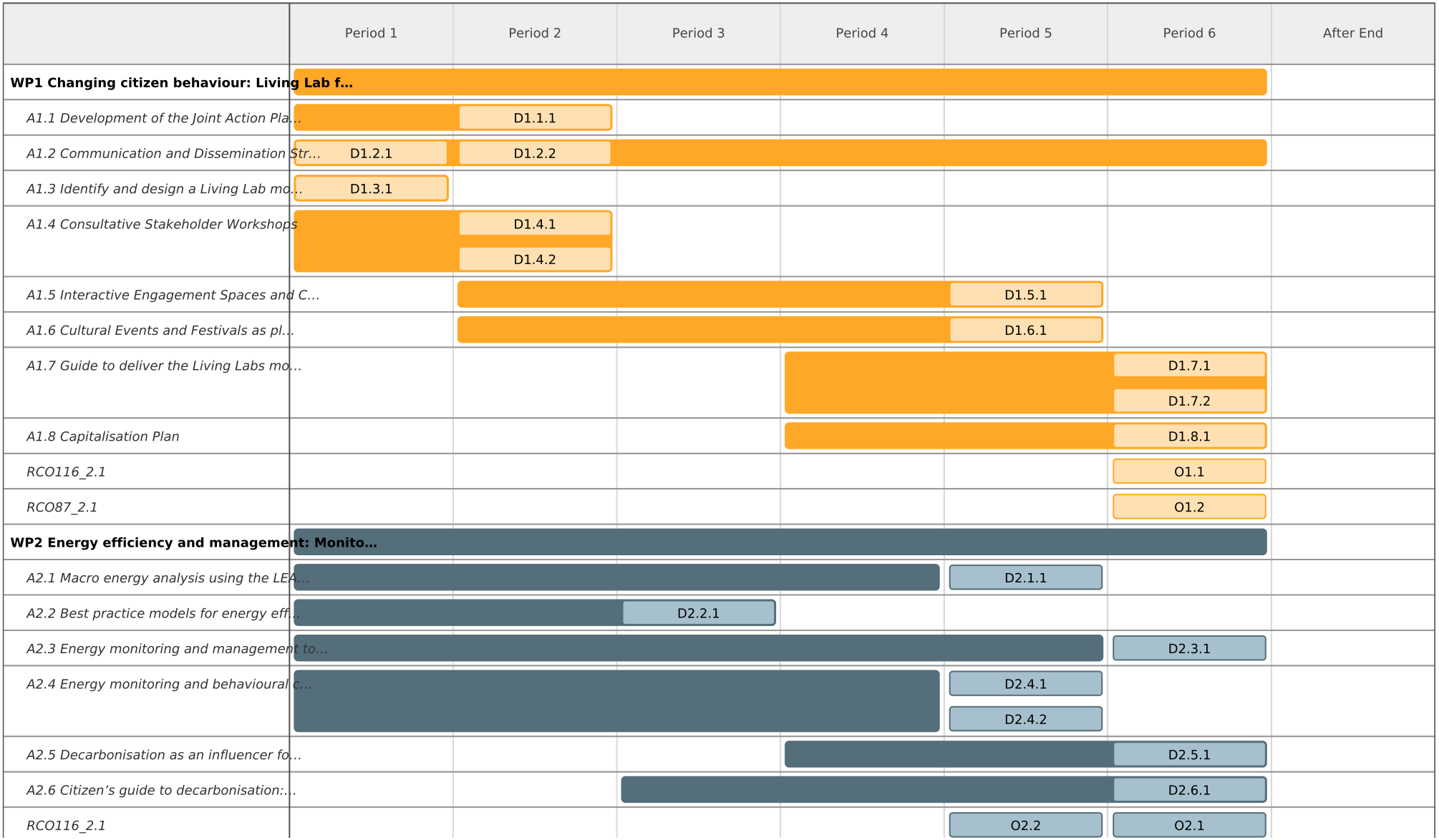
Result 2	
Programme result indicator	RCR104_2.1: Solutions taken up or up-scaled by organisations
Measurement unit	solutions
Baseline	0.00
Target value	1.00
Delivery period	Period 6, 31 - 36

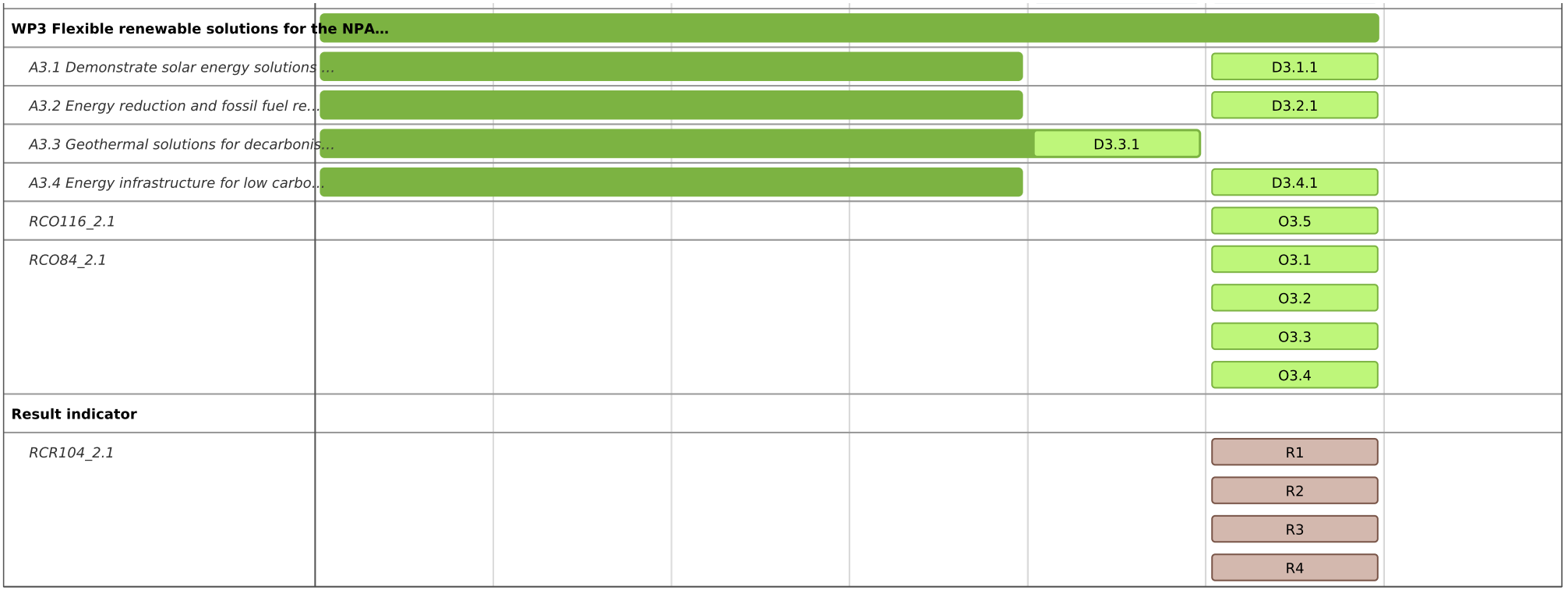
Result 2	
Result description	The project develops a roadmap to deliver curriculum change in education to influence behavioural change for the delivery of decarbonisation across the NPA region (and further afield). The roadmap will provide tangible steps which will enable the replication of the Carbon Schools model in other educational settings, with the medium-term goal of influencing third-level education and continued professional development (CPD) as a means of building capacity and knowledge in the area of decarbonisation. This is an important objective which seeks to strongly influence and mould effective and energy conscious young professionals and future decision-makers to ensure that future developments in the area of decarbonisation are embedded within the lenses of energy efficiency and sustainability policy and implementation. This result is related to Outputs 2.2.

Result 3	
Programme result indicator	RCR104_2.1: Solutions taken up or up-scaled by organisations
Measurement unit	solutions
Baseline	0.00
Target value	1.00
Delivery period	Period 6, 31 - 36
Result description	Using the Living Labs model, the project develops a guide which identifies Co-Design opportunities for improving energy performance and decarbonisation and will be structured in three parts: MAKING, SEEING, and INFORMING - such that it acts as a Guidance for Future decarbonisation projects across the Partner Regions and the EU. The guide will include analysis of the barriers and enablers to implementation and will provide a critique of the regional disparities and socio-economic factors that influence the success of implementing the Living Labs model as a tool for empowering all citizens to achieve decarbonisation. This guide will ultimately describe the inherent value of the project and its activities to the Partners and to different civic and public audiences. This result is related to Outputs 1.1.

Result 4	
Programme result indicator	RCR104_2.1: Solutions taken up or up-scaled by organisations
Measurement unit	solutions
Baseline	0.00
Target value	1.00
Delivery period	Period 6, 31 - 36
Result description	This relates to Output 3.1, HYBES model for increased energy efficiency and local energy generation as a scalable method

C.6 Project Time Plan




WP3 Flexible renewable solutions for the NPA...
A3.1 Demonstrate solar energy solutions ...
A3.2 Energy reduction and fossil fuel re...
A3.3 Geothermal solutions for decarbonis...
A3.4 Energy infrastructure for low carbo...
RCO116_2.1
RCO84_2.1
Result indicator
RCR104_2.1
D3.3.1
D3.1.1
D3.2.1
D3.4.1
O3.5
O3.1
O3.2
O3.3
O3.4
R1
R2
R3
R4

C.7 Project management

In addition to the thematic work planned in the Work Plan (C.4), the project needs enough resources for project management, coordination and internal communication.

C.7.1 How will you coordinate the 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

NRI, as lead partner in HYBES, will execute this role according to the rules of NPA and will have responsible dialogue with the NPA secretariat and all project partners. NRI will develop the necessary tools to organise, support and secure good progress of project activities as described in our application. NRI will facilitate active dialogue with project partners, both with online meetings and in person consortium meetings. These meetings will also act as a platform to develop and implement the tools and practices that we develop in HYBES. NRI will coordinate a plan for regular meetings between all partners within the HYBES project. Monthly online virtual project meetings will take place to secure and report on progress in activities and to inform and coordinate common development activities. In addition, six in person consortium meetings will be organised, one in each partner region and two in the lead partner region. Each work package is organised with a WP leader from one of the partner organisations. This partner will coordinate the main activities in the respective WP's. Because of the strong focus on cross boarder development and implementation of pilots, tools and practices, each work package has a designated Co-lead. The lead partner will activate an active dialogue with each work package lead to monitor the progress in activities and deliverables to ensure goal obtainment of objectives and deliverables. The lead partner will develop a risk management tool /template to evaluate risk factors and potential incidents of goal obtainment of the HYBES project. This encompasses procedures for conflict management. NRI will as lead partner will have active communication and collaboration with the NPA programme and follow up reporting and auditing routines in accordance with good practice. The lead partner will also participate in all the required program activities arranged by the NPA programme and communicate relevant information back to project partners.

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

Describe the approach, processes and responsible partners for quality management. If you plan to carry out any type of project evaluation, please describe its purpose and scope here.

The lead partner is responsible for developing the necessary tools to ensure quality. The Joint Action Plan developed at the start of the project will describe and structure the cross-cutting activities between WPs. The lead partner will have open and regular dialogue with all HYBES partners, through monthly virtual meetings and consortium meetings (6 months). Meeting agendas and minutes for these meetings will record follow-up actions, project progress and decisions agreed by the consortium. The lead partner will use a secure Cloud Drive (eg., basecamp) to share common documents. In addition, the lead partner will develop a detailed progress plan with milestones and will monitor this plan in online meetings, in collaboration with WP leaders. The lead partner will ensure draft versions of deliverables will be produced in a prompt manner, so that they can be reviewed formally by a designated project reviewer. Specific milestones will be identified for each deliverable to ensure that the deliverable meets the objectives and project requirements. This will ensure that the project deliverables adequately demonstrate a clear pathway between project activities. In addition, HYBES activities will be documented through activity logs. This is especially important for tools and outputs to be replicated and implemented in partner regions, or across the NPA region. The lead partner will develop a risk management plan. This risk plan will be discussed with the partnership at the kick-off meeting, and will be reviewed continuously by the project management group, who will be established at the project outset. This management group will consist of designated representative from each partner who will participate in required periodic meetings. This management group will meet four times during the project. The lead partner will also develop an overall communication plan to secure output and results to be disseminated both within the HYBES partnership and NPA region.

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

Explain how the communication objectives (ref. work plan C.4) will help achieving the project result(s). Please add who will coordinate project communication and how the involvement and contribution of all partners will be organised. What tools and channels will be used to support the uptake of your project results? Please acknowledge the mandatory communication requirement (ref. Programme Manual) and note that all communication activities should be included in the relevant work packages, not in this section.

The lead Partner will be responsible for the overall development of the Communication and Dissemination Strategy for HYBES to ensure that the project achieves its objectives. This strategy will organise and describe both internal communications and external communication. Internal communication is described under C.7.2. In terms of external communication, this strategy will map out the target groups to be reached (stakeholders) and how they will be reached, at a national and regional level. The strategy will also specify channels and methods of communication including social media, public events, branding presence, webinars and the NPA mini-website. This is important in order to distribute results and outputs from the HYBES activities, and to raise awareness about decarbonisation measures. Each work package is responsible for communication and dissemination of WP activities. WPs will communicate and disseminate the best practices identified by documenting the benefits of the solutions identified in visual and schematic form and disseminating these through social media channels and webinars as well as Study Visits by partners to specific demonstrators so that they can experience solutions firsthand. We will also circulate details of the technology and results of the solutions through networks specializing in climate action, energy efficiency and renewable energy and to housing and local authority networks at a national European level, including the Covenant of Mayors, Energy Cities and the EU Mission Charter: Adaptation to Climate Change.

C.7.4 How do you foresee the financial management of the project and reporting procedures for activities and budget (within the partnership and towards the programme)?

Please describe how you will ensure a smooth reporting process between partners and their controllers, as well as partners and the Lead Partner. Please also reflect on how the Lead Partner will monitor spending levels, keep an eye on the need for changes, ensure that reporting deadlines are kept, and ensure a swift transfer of funds to the partnership.

The lead partner will actively collaborate with NPA secretariat during the life of HYBES project. Financial management will include signing formal contracts and continuous communication with the NPA financial reports and updates. The lead partner will draw up a consortium agreement to be signed by all project partners. This agreement also defines each partners financial responsibilities. The lead partner will monitor the work plan progress and ensure that it is in line with the overall budget and individual budget categories. The lead partner will also ensure that partners submit their financial reports accurately and in a timely manner, as set out by the Joint Secretariat. These regular reports on the JEMS portal will monitor the budget spending and WP progress. The lead partner will ensure that financial periodic reports are delivered complete, on time and on budget. The lead partner will also provide guidance, where required, and will liaise with the NPA, should risks arise. The lead partner will be responsible for the distribution of project funds to partners. This will be done in an appropriate and timely fashion and in line with all NPA standards and guidelines. The lead partner will also have responsibility for the preparation and submission of any financial amendments, on behalf of the consortium, should they be required.

C.7.5 Cooperation criteria

For each cooperation criterion, describe briefly how they will be implemented in your project. Please note that the joint development, joint implementation and joint financing criteria are mandatory

Cooperation criteria		Description
Joint development	Yes	In all WPs we emphasis partner co-creation of outputs and results. Cross partner collaboration is involved in development of all ideas in the HYBES project. We need to understand the different partner conditions when we develop activities to be implemented in other regions.
Joint implementation	Yes	HYBES will execute activities to be implemented in other HYBES regions or other NPA areas. This is done through sharing experience and knowledge. Through pilots we quantify context and other premises for implementation. This will be documented in a systematic way to secure replication of tools and outputs under other conditions with partner regions or in other areas of NPA. Project activities must be carried out by partners in a cooperative way that ensures clear transnational work.
Joint staffing	Yes	Defining HYBES activities, outputs and results we have an emphasis to show a clear division of labor to avoid duplication of work and functions within the partnership. We have designed our activities to supplement partner competences and experiences and add value to the different practices we find in each partner region.
Joint financing	Yes	Budget is organised in line with activities carried out by each project partner.

C.7.6 Horizontal principles

Please indicate how your project contributes to the horizontal principles (see the Programme Manual).

Horizontal principles	Type of contribution	Description of contribution
Sustainable development	positive effects	Outputs from HYBES activities and collaboration will contribute positively to sustainable development. HYBES will develop tools and replication of best practice and knowledge sharing which will assist in the reduction of CO2 emissions. Furthermore, our activities will raise awareness of decarbonisation and will produce future cut in emissions, assisting in the pathway to climate neutrality in the partner regions.
Equal opportunities and non-discrimination,	positive effects	Activities of HYBES contribute to energy efficiency, efficient use of Renewable Energy sources and to create awareness of the low-carbon society. Our main target groups are the general public and local and regional authorities in our regions responsible for our societies in general. The project will have a positive effect in terms of combating energy inequality and reducing energy poverty. HYBES outputs and results will give equal opportunities and is non-discriminating.
Equality between men and women.	neutral	HYBES contributes to energy efficiency, efficient use of Renewable Energy sources and to create awareness of the low-carbon society. Our main target groups are the general public and local and and regional authorities in our regions responsible for our societies in general. HYBES outputs and results will give equal opportunities between men and women.

C.8 Long-term plans

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

C.8.1 Ownership

Please describe who will ensure the financial and institutional support for the outputs (and relevant deliverables) developed by the project, and explain how they will be made available at local and/or transnational level.

HYBES partners are committed to continued implementation of the project outputs after the end of the project. This is demonstrated by the inclusion of Activity 5.1 Capitalisation Plan, which will comprehensively research and explore resources and other supports for building new synergies for the delivery of 'smart' innovative decarbonisation post-project completion. The Capitalisation Plan will support the Quadruple Helix clusters in each region to identify potential opportunities to secure future investment in decarbonisation research and to broker new partnerships between citizens, research, businesses, and the public sector to support new carbon neutrality initiatives and policy. A key objective of the Capitalisation Plan will be to ensure the continued use and operation of the Living Lab mode as a means of delivering decarbonisation goals in rural and peripheral areas. As a default position, each partner will be responsible for ensuring that the outputs of their activities are well documented and available on the NPA mini-website, with instructions on how output details may be accessed. A key objective of the HYBES project will be to integrate as many outputs and recommendations of the project into municipal partner policy frameworks, including statutory policy and also make recommendations to relevant EU policy making bodies. This will be done through the different forums and networks that partners are involved in such as the Covenant of Mayors, Energy Cities, Housing Europe, and relevant academic networks. Academic Partners (UCC, NRI, UmU) will work closely with the Living Labs network and the University of Post Industrial Cities (UNIC) to promote the Living Labs Model as a tool for delivering decarbonisation. It is envisaged that the tools and pilot outputs developed by the project will become embedded in the business operation of partner organisations and therefore providing a tangible project legacy.

C.8.2 Durability

Outputs and deliverables should be made available and used by relevant target groups (project partners or end users) after the project's lifetime, to have a lasting effect in the programme area. Please describe how and by whom the outputs and deliverables will be used after the end of the project.

The activities, and associated deliverables and outputs, of the HYBES project have been conceptualised and designed in a manner which delivers a legacy for the project and ensures that they will continue to add value and benefit to both the partners and the NPA region. It is envisaged that the tools developed during the lifetime of the HYBES project, for example, the energy management and monitoring software developed in WP3, will be embedded within the business operations of the relevant authorities/partners, and this will provide a strong tangible output for the project, and will have a lasting impact in facilitating decarbonisation.

The jointly developed citizen's guide to influence behavioural change and deliver decarbonisation activities will benefit citizens across the NPA region, as it will assist them with capacity building and learning about the benefits their actions have on achieving decarbonisation goals. This guide will have a long-term legacy post project, and will offer advice for end-users, including building managers, businesses, and housing tenants to empower end-users to change behaviour.

Additionally, using the Living Lab model, the project will develop a guide which identifies Co-Design opportunities for improving energy performance and decarbonisation and this will act as guidance for future decarbonisation projects across the Partner Regions and the EU.

The project will also develop a roadmap to deliver Curriculum change in education to influence behavioural change for the delivery of decarbonisation across society in the NPA region (and further afield). The roadmap will provide tangible steps which will enable the replication of the Carbon Schools model in other educational settings, with the medium-term goal of influencing third-level education and continued professional development (CPD) as a means of building capacity and knowledge in the area of decarbonisation.

These, along with other project outputs, will ensure project durability and have a long lasting impact and defining legacy in the programme area.

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 make relevant groups aware of the available outputs and deliverables?

The activities, deliverables and outputs of the HYBES project will be developed in a manner that lends itself to replication, not only within the partner regions and the programme area, but also across the EU. The deliverables of the HYBES project will provide comprehensive information, guidelines and roadmaps to allow stakeholders to apply the methodologies developed by the project to achieve similar outcomes and results to achieve decarbonisation targets and climate neutrality. The solutions proposed are, by definition, replicable and aimed at application anywhere in the NPA region. The pilots and case studies developed are based on existing and conventional buildings that can be replicated, given a reasonable level of support. These include:

- The energy monitoring and management tool (WP3)
- The roadmap to deliver Curriculum change in education to influence behavioural change for the delivery of decarbonisation (WP3)
- The flexible renewable energy solutions identified and implemented (WP4)
- The guide to deliver the Living Labs model as a tool to facilitate behavioural change for decarbonisation (WP2 and WP5)
- The citizen's guide to decarbonisation: An end-users guide to influence behavioural change (WP5), and;
- The co-design of a roadmap to deliver educational Curriculum change to build professional capacity in decarbonisation (WP3 and WP5)

HYBES will develop a comprehensive Communication and Dissemination Strategy in WP1 which will map out the target groups to be reached (stakeholders) and how they will be reached, at a national and regional level. The strategy shall specify channels and methods of communication including social media, public events, webinars and the NPA mini-website to ensure that the project deliverables and outputs can be extensively shared. HYBES will also disseminate outputs through networks specializing in the project area, including the Covenant of Mayors, Energy Cities and the EU Mission Charter: Adaptation to Climate Change.