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Exploitation Plan

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Responsible Author(s): Veronika Cerna (TWE)	
Responsible Co-Author(s): Christina Iannuzzi, Alexander Botev (TWE)	
Contributors: Mariem Chakroun (ENoLL), Morgane Juliat (RC), Maria Konstantinidou (CERTH), Thomas Meister (RUB)	
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Abstract

This deliverable describes the key outputs of the TRANSFORMER projects and the strategies for exploiting them, aiming to scale up and replicate them across regions in Europe.

Project Partners

Organisation	Country	Abbreviation
RUHR-UNIVERSITAET BOCHUM	DE	RUB
RUPPRECHT CONSULT-FORSCHUNG & BERATUNG GMBH	DE	RC
BUSINESS METROPOLE RUHR GMBH	DE	BMR
REGIONE EMILIA-ROMAGNA	IT	RER
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FIT CONSULTING SRL	IT	FIT
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UNIWERSYTET WARSZAWSKI	PL	Uni Warsaw
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ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	GR	CERTH
TWENTY COMMUNICATIONS SRO	SK	TWE
EUROPEAN NETWORK OF LIVING LABS IVZW	BE	ENoLL

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Dissemination Level: WPL = Work Package Leader, PM = Project Manager, PC = Project Coordinator, PO = Project Officer

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Table of Contents

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Table of Figures

Table of Tables

List of Acronyms

CEI	Carbon Emissions Intensity
CI	Composite Indices
GHG	Greenhouse Gas
GVA	Gross Value Added
NUTS	Nomenclature of Territorial Units for Statistics
QRAFT	Quantitative Regional Assessment Framework for Transition Super-Labs
TSL	Transition Super Lab

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Executive Summary

Purpose of the Exploitation Plan

The primary purpose of this exploitation plan is to outline strategic approaches that help maximize the impact and sustainability of the outcomes generated by the TRANSFORMER project.

The plan aims to outline and analyse key outputs created during the project's lifespan, ensuring that these continue to benefit stakeholders and the wider community post-project. A key focus is laid on the replication and scalability potential of project results, particularly in other regions across Europe, to deploy the key tools such as the Knowledge Hub, Toolkit, Transition Readiness Tool and Roadmap across other regions.

Key Outcomes and Objectives

The TRANSFORMER project's key outcomes include the development of the TRANSFORMER Knowledge Hub, Toolkit, Roadmap, Transition Readiness Tool and the User Forum. Each of these components plays a crucial role in the dissemination and application of the project's findings and methodologies:

- **The Knowledge Hub** is a **comprehensive repository of all accumulated knowledge**, that acts as a central repository for all project outputs and is instrumental in sharing best practices, tools, and data with a wide range of stakeholders. It supports the scaling of transition strategies across regions, providing a valuable resource for policymakers, industry leaders, and researchers.
- **The Roadmap i**s a **blueprint to be followed,** that provides a structured plan for regions to develop their own Transition Super-Labs, detailing steps from initial assessment through to full implementation. It incorporates elements of the Toolkit and the Knowledge Hub in the document to showcase continuity of the steps and interconnection of the various stages. It serves as a guide for other regions to replicate the TRANSFORMER model, ensuring the sustainability and expansion of the project's impact.
- **The Quantitative Regional Assessment Framework,** as a **first step in analysing transition needs,** is a methodology that defines transition needs and potentials of regions to reduce GHG emissions from a TSL perspective. This framework supports conducting the first steps in the TSL process of identifying the regional challenge and possible topics for transition and developing a vision for transformation and the insights generated through this methodology will also **feed into later steps of the TSL process.**
- **The Transition Readiness Tool,** built upon a **transition readiness assessment**, is a tool that through answering a set of questions helps the region to calculate and assess its transition readiness and **identify their weak points**. The tool consists of two levels; the first one includes a small set of questions that can be easily answered by the TSLs while the second level includes the full set of questions that require a broader knowledge of different regional aspects.

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- **The Toolkit,** is a set of tools designed to facilitate the implementation of Transition Super-Labs, featuring tools that foster stakeholder collaboration and innovation. This includes matchmaking systems and co-creation frameworks that help align diverse interests and capabilities towards common goals.
- **The User Forum** is a capacity building tool, offering knowledge exchange, practical insights, funding possibilities, and studies to help regions replicate and implement the TSL concept. It seeks to unite regions interested in adopting this innovative approach, facilitating capacity building and networking while supporting the replication of successful TSL projects and fostering regional collaboration. As an initial exploitation tool it was built and tested already during the project.

The exploitation of these outcomes is intended not only to support the transition to climate neutrality but also to stimulate economic growth, social innovation, and community engagement in the process. This exploitation plan thus serves as a roadmap for leveraging the project's outputs to their fullest potential, ensuring that the TRANSFORMER project leaves a lasting legacy of positive change.

Additionally, this document details methods to engage with various stakeholders, manage risks, and disseminate results effectively to foster wider adoption and replication of the TSL model across Europe and beyond.

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1 Introduction

1.1 Project Overview

The TRANSFORMER project is an ambitious initiative funded under the Horizon Europe framework, aimed at facilitating the transition of regions from fossil fuel dependence to zero-carbon economies. This comprehensive project designs and implements systemic transformation frameworks across various European regions, utilizing innovative Transition Super Labs (TSLs).

These Super Labs serve as hubs to develop and test portfolios of low-carbon, cost-effective, and technologically proven solutions in real-life, large-scale settings. A Transition Super Lab combines the evidence-based success of fast and effective decarbonisation processes with real-life and large-scale development and test of portfolios of low-carbon, cost-effective and proven technological solutions. The model includes milestones for implementation, financing and funding opportunities.

By integrating multidisciplinary expertise from universities, municipalities, businesses, and civil society organizations, TRANSFORMER creates a collaborative environment to tackle the pressing challenge of accelerating the transition to climate neutrality.

Tested in **four key European regions: The Ruhr Area in Germany, Emilia-Romagna in Italy, Lower Silesia in Poland, and Western Macedonia in Greece**, the project is a flagship example of regional adaptation to achieve ambitious environmental targets.

Through the use of the various outputs of the TRANSFORMER project, a self-sustaining community of Super-Lab practitioners will be created to replicate the concept of Transition Super Labs.

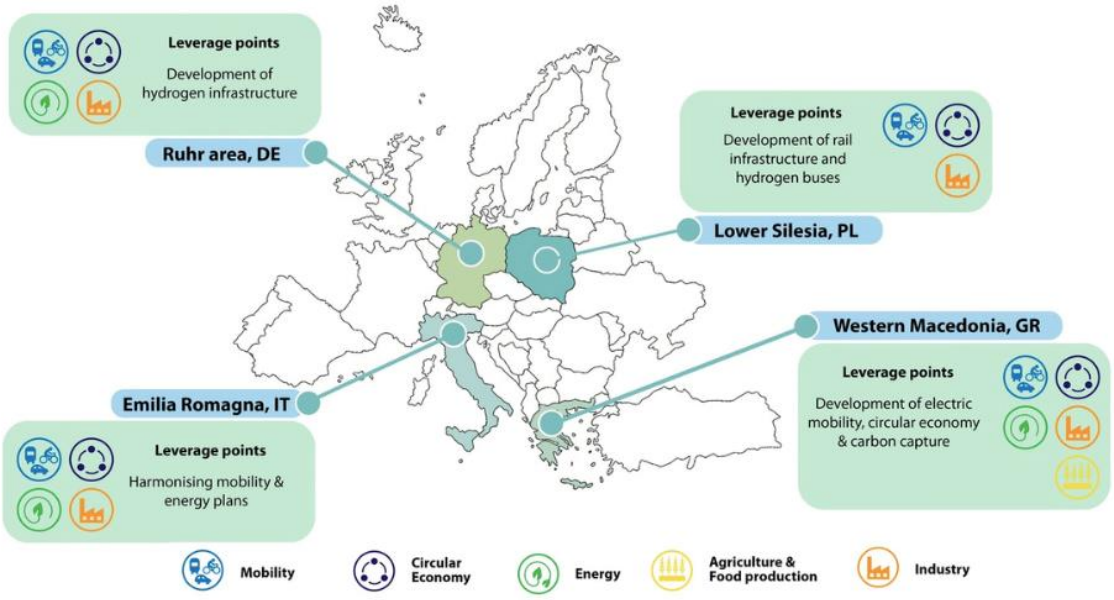

Figure 1: TSL regions[1]

[1] TRANSFORMER Project Proposal

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1.2 Objectives of the TRANSFORMER Project

The primary objective of the TRANSFORMER project is to foster the development of zero-carbon local economies through the systematic transformation of existing infrastructures and practices.

This goal is pursued through several strategic actions: the development of the Knowledge Hub to disseminate information and best practices; the creation of a Toolkit to support the implementation and operation of TSLs; and the formulation of a comprehensive Roadmap to guide regions through the transition process.

These tools are designed to be replicable and scalable, allowing the TRANSFORMER methodology to be adapted and adopted by various regions beyond the initial project scope. The project aims not only to achieve direct impacts in terms of carbon reduction but also to build capacity among regional stakeholders, enabling them to lead and sustain further transformations independently.

1.3 Alignment with Horizon Europe Goals

The TRANSFORMER project is closely aligned with the goals of Horizon Europe, particularly in fostering competitive sustainability and supporting the European Green Deal.

By focusing on systemic changes and the integration of new technologies, the project contributes to Europe's ambition to become the first climate-neutral continent. The TRANSFORMER approach of engaging **quadruple helix stakeholders (industry, academia, government, civil society**) ensures a comprehensive inclusion of perspectives, enhancing the robustness and relevance of its solutions. This alignment is crucial for securing support and funding, as it ensures that the project not only addresses immediate regional needs but will be able to also contribute to further scaling up and to broader European strategic objectives.

This strategic alignment with Horizon Europe's priorities and close alignments with City Mission goals and solutions positions the TRANSFORMER project to have great replication potential and reach across other regions.

2 Implementing the TSL Approach

2.1 TSL Definition

In the course of the project, it became important to find a fitting definition of a Transition Super Lab. Through an iterative and inclusive process, together with the pilot regions of the TRANSFORMER project, we define[2] a **Transition Super Lab** as a **governance arrangement designed to be adaptable and transferable to other regions:** it is an **ecosystem of actors organized to accelerate the**

[2] TSL Definition, TRANSFORMER project output

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transformation towards climate neutrality through innovation and cross-sectorial synergies on a regional scale.

It benefits from collaborative governance, operates in accordance to systemic transformation principles and utilizes transition-enabling methods and tools in order to create added value to cross-sectorial initiatives for economic transformation and to provide feasible solutions to complex regional transformation challenges.

The TSL approach adapts and applies enriched **living lab methodologies** in order to develop (co-create) together with all stakeholders from the quadruple helix and society a vision for a regional transformation and a **portfolio of large-scale systemic solutions** for climate neutrality, net-zero emissions and a resilient future. The **systemic transformation** within TSL catalyses large and diverse communities to innovate for systemic changes that accelerate transition at scale.

Such systemic transformation will be achieved by developing and implementing a portfolio of connected solutions e.g., **pilot use cases which engage multiple leverage points at the intersection of socio-technical regimes simultaneously** in order to achieve a rapid and more efficient transformation[3].

Therefore, the adaptation of Living Lab methodologies to a large scale and with a focus on systemic transformation can be regarded as the core characteristics of a TSL:

- **Adaptation and application of enriched Living Lab methodologies** (co-creation, experimentation and evaluation)
- **Aiming at large-scale systemic solutions** for a rapid sustainable transformation
- **Applying a portfolio approach of measures** (experiments) and using multiple leverage points for systemic change simultaneously

2.2 Transferability of a TSL Approach

The **potential for implementing a TSL** (and the "transferability" of the TSL approach) is strongly influenced by following connected aspects:

- Existing **governance arrangements** (planning procedures, participation and co-creation processes etc.) and **political support**
- Available **expertise** (regional planners, project managers, financial experts etc.) and existence of necessary **data** (transition needs and potentials, transition readiness, regional SWOT etc.).
- Social **acceptance and support** of the transition process
- **Financial resources** (budget for TSL coordinators & managers as well as project funding).

[3] For example, developing green hydrogen-solutions for simultaneously transforming the mobility and the industrial sector. For a more detailed explanation of leverage points („levers of change") and the portfolio approach see Deliverable D2.1 (URL not available yet).

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Implementing a TSL, therefore, requires developing and establishing **flexible governance arrangements**[4] that focus on the following aspects:

- Ensuring a **balanced representation** of different societal groups and **enabling all stakeholders to participate** in a large-scale Living Lab.
- Identifying a "**coordinating stakeholder**" – a stakeholder that will be recognised by all other involved stakeholders and steer the implementation.
- Ensuring that stakeholders are **motivated to participate** over the long term in a systemic transformation by developing a common **vision** for the transition and providing a clear **value proposition**.
- **Integrating existing economic and political networks** in a TSL without creating an imbalance of (political and economic) forces, thus preventing an inclusive transformation process.
- Dealing with **individual interests** and **conflicting ideas** among the stakeholders, especially with regard to "veto players".
- Ensuring the **political support** on the local, regional and national level.

As the governance arrangements are crucial in implementing a TSL, the Project consortium developed a concept for a **TSL governance arrangement** based on the experience in the four TRANSFORMER regions (see Deliverable D2.3 for a detailed description). It aims at establishing coordination and management mechanisms and co-creation processes on two highly connected governance levels, the TSL level and Pilot use case level, to ensure that regional transition needs and specific project needs (portfolio approach for systemic transformation) are aligned:

TSL level

- A TSL requires a team that coordinates and manages the entire TSL: "**TSL coordination and management team"**. This team must consider the transition needs and potentials of the entire region, as well as the specific pilot use cases. It may not necessarily consist of the same stakeholders as the pilot use cases.
- In addition, a TSL needs a "**Reflexive monitoring board**" to monitor whether actions taken in the TSL as a whole align with regional transition goals.

Pilot use case level

- The **Pilot use cases** require a project-specific form of **governance** that may significantly differ from the overall TSL governance (depending on the complexity and scope of the project). However, every pilot use case needs to have at least one responsible organization/person (pilot use case coordinator/manager) that interacts with the TSL management team.

[4] Operating on different levels of government (local, regional, national) but not (necessarily) within the boundaries of a specific political and administrative unit

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To establish these governance arrangements, **political support and social acceptance as well as funding** have to be ensured to increase the potential for a successful implementation of a TSL. This is highly dependent on the specific regional transition needs and potentials as well as the developed Pilot use cases. Based on our experiences, we have developed **several assessment frameworks**, the TRANSFORMER Roadmap and toolkits to support the implementation of a TSL in different regions (see Chapter 4: Project outputs).

In addition, the **lessons learnt from establishing a TSL** in the four TRANSFORMER regions[5] have been incorporated into the **Roadmap** (D4.2), providing a comprehensive, user-friendly and flexible blueprint for future regions.

3 Target Groups

The project has defined three different target groups that the activities are aimed at. For the purposes of exploitation, there are changed to be mostly focused on TGC.

Target Groups		
Target Group A	Project partners in the four TSL regions	For the purposes of exploitation, they were the ones who built and compiled the tools.
Target Group B	Stakeholders in the TSL regions, with a particular focus on marginalised communities	For the purposes of exploitation, they were the first testers of the tools.
Target Group C	Follower regions across Europe	For the exploitation purposes, these are the ones we will focus on.

Table 1: TRANSFORMER Target Groups for Exploitation

3.1 Targeting Stakeholders for Uptake

For the purposes of the exploitation plan, we defined the group as **public authorities, enterprises that invest in renewable energy sources, enterprises active in the energy storage market, technology providers enabling climate transition, researchers in the field of sustainable development, policy analysts, and ecologists.**

As this group is rather large and diverse, combining all the stakeholders from the quadruple helix, we divided it into subgroups for the purposes of exploitation:

[5] For a detailed description of the "lessons learnt" see also deliverables D3.4: Transition Super-Labs' Lessons Learned and D5.3: Best practices and recommendations for Super-Labs operation towards the region transition.

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The **primary targeted stakeholders are public authorities**: this includes **regional and local government authorities** who are responsible for policymaking and implementation of sustainability initiatives. These entities are direct beneficiaries of the TRANSFORMER's outputs, frameworks and tools, as they can help them in policy development, strategic planning, and community engagement efforts needed for successful transition to low-carbon models.

Secondary targeted stakeholders are researchers: this includes researchers in the field of sustainable development, policy analysts, **educational institutions, research organizations**, and **NGOs** focused on environmental and sustainable development. These stakeholders can utilize the TRANSFORMER outputs to conduct research on sustainable practices, to build up capacity and to advocate for and implement change at local and regional levels.

Tertiary target, the **private sector**, particularly companies in the energy, transportation, and construction industries, represents an important stakeholder segment. These industries are directly involved in the infrastructure and services that must adapt to support a zero-carbon future. By integrating TRANSFORMER outputs, businesses can innovate in their processes, support the regions in the technical implementation and lead in green technology deployment.

The **fourth target** includes **international bodies and other regions** outside the initial European focus that are looking for successful models and tools to implement similar transitions. The TRANSFORMER project's scalability and adaptability make it a valuable resource for these markets, providing a blueprint that can be customized to different regulatory and cultural contexts. This global perspective not only broadens the project's market reach but also contributes to its objective of fostering worldwide sustainable development practices.

3.1.1 Target Groups and Usage of the Outputs

Any practical implementation of the identified frameworks, tools and other outputs has significant impacts on fostering collaboration and innovation among regions, and stakeholders within, and encourages a more cohesive approach to addressing climate change challenges. Equally so, the TSL approach supports the creation of a networked community of practice, among transition practitioners, policymakers, and researchers, who can share insights and strategies, thereby accelerating the overall transition process toward regional and eventually, climate neutrality.

In the below table, we briefly outline key outputs and the primary target audiences that these were aimed at, discussing their application in more detail in the respective sections of Chapter 4.

Output	**Primary Target Audience**
Knowledge Hub	The Knowledge Hub targets all the three target groups across Europe with the aim to support the scaling of transition strategies **across regions, providing a valuable resource for policymakers, industry leaders, and researchers.**

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Roadmap	Whilst the Roadmap is primarily aim at **serving regions**, it is built as a user-friendly and accessible **blueprint for any stakeholders** that would wish to **develop and implement or replicate a TSL**.
QRAFT	The primary target groups for the use of the assessment framework are **all stakeholders in regions planning to initiate a TSL** and interested parties seeking to **identify regions that could significantly benefit from a TSL approach.**
Transition Readiness Tool	The Transition Readiness Tool is built so that the follower regions are able to use it **to calculate their transition readiness level and identify their weak points.**
Toolkit	The Toolkit is primarily aimed at **public authorities, private companies, and research institutes.** Some parts of it, such as Matchmaking Tool, serves **TRANSFORMER regions as well as external stakeholders to help them** align diverse interests and capabilities towards common goals.
User Forum	The primary target audience of the User Forum were **stakeholders from regions external to the project's core Transition Super Labs** that were interested in adopting innovative approaches, facilitate capacity building and network with the aim of **creating successful TSL projects and fostering regional collaboration**.

Table 2: Primary Target Audiences of each Output

3.2 Needs Assessment

The TRANSFORMER project is addressing through its tools and outputs the urgent and growing needs of regions to guide them towards decarbonisation and sustainable regional development. With climate change posing an existential threat to global ecosystems and human societies, there is a pressing demand for innovative solutions that facilitate the transition to zero-carbon economies. The project targets this need by developing frameworks and tools that enable regions to systematically transform their energy systems, economic models, and community infrastructures towards sustainability, and by offering practical, scalable solutions.

The project offerings, such as the Knowledge Hub, Toolkit, Roadmap, User Forum and the Transformation Readiness Tool, are designed to meet these needs by providing comprehensive resources that support stakeholder collaboration, capacity building and exchange of knowledge, innovation, and effective planning and implementation of transition strategies.

Moreover, there is a significant demand for capacity building in regions that lack the expertise or resources to initiate and sustain transformative actions towards climate neutrality. The TRANSFORMER project addresses this need by disseminating knowledge and best practices through

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its Knowledge Hub and by training stakeholders using its Toolkit. These resources are crucial for regions seeking to improve their transition capabilities and for ensuring that local actions contribute to broader European and global sustainability goals.

3.2.1 Stakeholder Needs and Interests

Each group of stakeholders has specific needs and interests that the TRANSFORMER project aims to address.

Target stakeholder	Needs
Regional government authorities and policymakers	They look for **effective, scalable solutions** that can be integrated into public policy and help them meet climate targets. They are interested in tools that provide clear, measurable outcomes and cost-effective implementation strategies that do not disrupt local economies adversely. Equally so, they are interested in **creating public acceptance and support for the fundamental transition** in their regions and the tools that help them to achieve it. The Knowledge Hub, with its repository of best practices and policy guides, directly serves these needs.
Academic and research institutions	They are **primarily interested in accessing cutting-edge data and contributing to groundbreaking work** that pushes the envelope of sustainable development. They seek opportunities for publication and further research funding, which the project facilitates through its comprehensive data collection and analysis efforts.
Local communities, NGOs and civil society organizations	They need **assurance that the transition strategies will consider their quality of life, economic stability, and social equity**. Their main interest lies in maintaining access to affordable services while benefiting from the improvements brought by sustainable practices. The Toolkit's co-creation and engagement tools are particularly aligned with these interests, ensuring that community voices are heard and incorporated into the planning and implementation phases of regional transformations.
Private sector and industry partners	They need **practical tools that can be integrated** into their business operations with minimal disruption. They look for innovations that promise not only compliance with regulatory demands but also competitive advantages in a rapidly evolving market landscape.
International bodies and other regions	They require **frameworks, workflows, sets of tools and guidelines** to be able to either develop further policy guidance or apply the framework directly to other regions across Europe.

Table 3: Stakeholder needs

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4 Project Outputs for Exploitation

Taking into consideration the various stakeholders and their needs when it comes to the TRANSFORMER project, we have identified key outputs that would be most relevant for exploitation. While the project has produced a number of important results, the primary and for the purpose of this deliverable the most exploitable are **the Knowledge Hub, the Roadmap, the assessment frameworks** supporting the first steps in the TSL process **QRAFT and the Transition Readiness Tool,** intended to work alongside **the Toolkit**.

At the same time, in the course of the TRANSFORMER project, the below mentioned outputs have been **tested with the consortium TSLs**, as a way to gather initial feedback and assess further usability of these outputs. Each output section therefore includes this feedback that is then further used in recommendations and dissemination and engagement strategies and assessments of the exploitation potential in the following sections of this deliverable.

4.1 The Knowledge Hub

The TRANSFORMER Knowledge Hub[6] is a central component of the project's outcomes, designed to act as a **comprehensive repository** for all accumulated knowledge, methodologies, tools, and best practices generated throughout the lifecycle of the project. It is structured to facilitate **easy access and dissemination of information**, enabling stakeholders across different sectors and regions to leverage the insights gained for their specific contexts.

The Knowledge Hub is organized into various sections that cater to **different user groups**, including policymakers, industry professionals, researchers, and community advocates. This ensures that each group can find relevant information efficiently, whether it be policy recommendations, technical data, or community engagement strategies.

Continuously updated with the latest findings and case studies, **the Knowledge Hub serves as a living resource** that evolves with the project and beyond. It includes tools that support the governance of Super-Labs, aid in the co-creation processes, and facilitate the assessment and decision-making necessary for scaling up effective transitions to climate neutrality. The inclusion of external content from related initiatives and projects enhances the richness of the resource, making it a valuable tool for ongoing learning and adaptation. The strategic organization of the Knowledge Hub enables users to interact with the content actively, contributing their insights and feedback, which helps maintain the relevance and applicability of the information provided.

6

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4.1.1 Initial Feedback from the TSLs on the Knowledge Hub

The Knowledge Hub targets all the three groups that have been defined in the beginning of TRANSFORMER project as potential target groups that are either directly or indirectly influenced by the different activities.

More specifically, the first users of the Knowledge Hub were the project partners in the four TSL regions (TRANSFORMER Target Group A). After the presentation of the knowledge methodologies, tools and good practices that were included in the Knowledge Hub during the consortium meeting in Lower Silesia (27-28 September 2023), TRANSFORMER TSLs provided feedback in a related interactive session. The feedback was related to the usefulness of the knowledge items for implementing the specific step of the roadmap that they are linked to and the suggestion of additional material that would be useful for TSLs.

All the Knowledge items that are included in the Knowledge Hub were assessed as useful from the TSLs. Moreover, some additional knowledge items that would be valuable for regions for accelerating their transition towards climate neutrality were suggested by the TRANSFORMER TSLs such as ENoLL's Toolkit for co-creation activities, studies to enhance civil society acceptance etc. The repository of the Knowledge Hub will be continuously enriched with new methodologies and tools by the end of the project but also beyond the project to ensure high levels of usability for the TSLs.

Secondly, the Knowledge Hub was presented to follower regions across Europe (TRANSFORMER Target Group C) that participated in TRANSFORMER User Forum in a session organised in January 2024 and positive feedback related to its usefulness was collected.

Additionally, to project partners in the TRANSFORMER TSLs and the follower regions of the User Forum, the Knowledge Hub targets also multi-layered stakeholders from the quadruple helix (TRANSFORMER Target Group B) not only from TRANSFORMER TSLs' but also from other regions that would like to follow the TSL approach and/or are curious about TSL approach and want to acquire a comprehensive overview of transition-enabling methodologies and tools. This group is further defined as public authorities, policy and decision makers, industry stakeholders related to energy, mobility and other sectors, technology providers enabling climate transition, academy/researchers in the field of sustainable development, ecologists, educational institutions, media, civil society including marginalised groups etc.

As the Knowledge Hub is hosted at CERTH/HIT server, it will be technically maintained by CERTH/HIT's own resources after the end of the TRANSFORMER project. CERTH/HIT will also be responsible to keep the Knowledge Hub updated beyond TRANSFORMER project with additional tools and methodologies ensuring its operation as a unique space where the regions can find valuable knowledge on how they can follow the TSL approach to speed up the transition towards climate neutrality.

CERTH/HIT will continue to promote the Knowledge Hub through its social media, but also at future conferences, congresses and events organised either by CERTH/HIT or externals. Also, it will be promoted to its network when relevant opportunities arise (for example Knowledge Hub will be presented to the members of the ENoLL Transition Super Living Labs Working Group that is led by CERTH/HIT).

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4.2 The Roadmap

The TRANSFORMER Roadmap outlines a **clear and structured and yet iterative pathway** for regions to develop their own Transition Super-Labs, providing a step-by-step guide from conceptualization to implementation. It has been developed throughout the project, building upon lessons learned from all elements and outputs of the project.

The TSL Roadmap consists of four phases with 11 main steps that are further broken down into activities that guide regions through the **necessary activities to:**

1) **Strengthening regional transition:** determine the transition framework, build a stakeholder coalition, co-define a common vision for the TSL and build scenarios and transition pathways;
2) **Gearing regional transition capacities**: co-define pilot use cases, examine the feasibility of the pilot use cases, and strengthen stakeholder engagement and governance;
3) **Accelerating transition through innovation:** co-define innovative actions and create and implement an action plan; and
4) **Scaling-up transition:** monitor and assess regional transition and maximise transition impact.

This structured and flexible approach ensures that regions can progress towards their climate neutrality goals in a coordinated and systematic manner, leveraging best practices and lessons learned from the TRANSFORMER project. Each activity has detailed objectives to reach, tasks to conduct, and informed timing and coordination elements with other activities in the process. To support the regions in building their own TSLs, the Roadmap incorporated elements from the Knowledge Hub and the Toolkit, including as well the assessment methodologies QRAFT and Transition Readiness Tool. In addition, practice examples from the TRANSFORMER regions are featured throughout the Roadmap to illustrate the implementation of activities for the readers to see.

Each phase of the Roadmap is designed to build on the successes of the previous steps, ensuring **continuous improvement and adaptation of strategies** to meet evolving challenges and opportunities. The detailed nature of the Roadmap, with over 30 specified activities and corresponding milestones and deliverables, provides regions with a clear blueprint for action. This helps in mitigating risks associated with project execution and increases the likelihood of achieving desired outcomes. Moreover, the Roadmap facilitates the replication of the TRANSFORMER model in new regions, enhancing its impact and relevance across Europe.

By providing a **practical and adaptable framework**, the Roadmap enables these regions to tailor the TRANSFORMER methodologies to their unique environmental, economic, and social contexts. The Roadmap not only guides regions through the technical aspects of setting up and running a TSL but also ensures that the broader strategic objectives of societal engagement and sustainable development are met, aligning with Horizon Europe's goals for a green and inclusive transition. All in all, the Roadmap offers all user-groups a detailed overview of which phases of the process each of the TRANSFORMER output can be used and provides a contextual understanding of their usage.

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4.2.1 Initial Feedback from the TSLs on the Roadmap

The Roadmap proposes a step-by-step yet iterative approach for regions to create their own TSL and to implement cross-sectoral actions with the overall goal of achieving climate neutrality at the regional level. The Roadmap serves as a user-friendly and accessible blueprint for any stakeholders involved in the development and implementation of a TSL – at any stage of the process. The Roadmap provides a detailed blueprint for regions to develop their own TSL, incorporating elements of stakeholder engagement and co-creation, considering different stakeholders with different backgrounds and at different stages of the TSL process. It integrates lessons learned from the TRANSFORMER TSLs and the User Forum regions. The roadmap process has also been presented in detail to the User Forum Regions on two occasions during which concrete feedback was gathered to strengthen the future exploitation of the document.

The Roadmap has already been promoted on various occasions and conferences. The conferences included Urban Mobility Conference in Seville and POLIS Conference. The application for further promotion has been submitted for European Week of Regions and also POLIS Conference, with the abstract to the POLIS conference being accepted at the time of finalising this deliverable. The Roadmap process will also be discussed in an academic publication led by RUB.

4.3 Quantitative Regional Assessment Framework for TSL

In the TRANSFORMER project, we have developed a **methodology to define transition needs and potentials of regions to reduce GHG emissions from a TSL perspective**. This framework will support conducting the first steps in the TSL process of identifying the regional challenge and possible topics for transition and developing a vision for transformation.

It is designed to function as a tool for gaining a data-driven understanding of the importance of different possible TSL vision topics within a region for stakeholders with limited knowledge about their region. It also enables knowledgeable stakeholders to question existing narratives about their region if necessary.

The insights generated through this methodology will also **feed into later steps of the TSL process** (i.e., developing pathways and scenarios for transformation, developing feasible solutions, and contributing to assessment frameworks developed in deliverable D5.1). As such, the primary target groups for the use of the methodology are all stakeholders in regions planning to initiate a TSL (TSL follower regions, e.g., as part of the TSL User Forum (Task 6.4)). The second target group are interested parties seeking to identify regions that could significantly benefit from a TSL approach.

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4.3.1 Steps

The developed **Quantitative Regional Assessment Framework for Transition Super-Labs** (QRAFT) **compares regional transition needs** (development of greenhouse gas emissions per capita and carbon emissions intensity (CEI) of a region´s economic sectors) **and regional transition potentials from a TSL perspective** by recurring to existing Composite Indices (CI).

In **the first step,** the GHG emissions are **analysed to identify the trends of the region** (CEI: decoupling of economic growth and emissions) **and identify the most important sectors that need to be changed** (GHG emissions per sector; this is put in context with the GVA per sector and employment statistics). Based on this first assessment and identification of the sector**, additional quantitative and qualitative analyses can be conducted**.

To gain a preliminary understanding of the transition potentials, several composite indices (CI) are used: **Competitiveness, Innovation Capacity, Social Progress, Quality of Government**.

4.3.2 Prerequisites

In order to use QRAFT, it is important to first note the criteria underlying its development. As a first criterion, we specifically aim for a **framework that allows us to assess the sub-national, and regional scale for the whole territory of the EU**. Therefore, we only include data available at the NUTS 2 level where datasets covering the whole (or at least large parts) of the EU exist.

Our second criterion is **meaningfulness**. **Indicators need to be essential for assessing the needs and potentials of regions to achieve climate neutrality**, rather than being arbitrary. The lens to decide what is essential and what is arbitrary here is the TSL concept and its priority aiming at achieving climate neutrality. Moreover, meaningfulness also implies taking into account the rapidness of changes at the regional level, especially considering the crisis-riddled times we live in. We only include indicators where data not older than 5 years exist (except for analysing the development of GHG emissions). Older data would not help when the task is to assess the current state of regions.

Our third criterion is the **usability of the QRAFT methodology**. In the context of TSLs, this meant developing a methodology that is, firstly, **easy to use for our primary target group** of possible TSL follower regions, and secondly, **easily understandable** (e.g., data mix should be structured in a way that a comprehensive interpretation is possible without needing an extensive scientific background). Therefore, we chose only public and open-source data and composite indices for QRAFT. Moreover, we included only data and composite indices that are very likely to be continuously collected and elaborated in the future. This ensures that QRAFT can be used continuously in the future.

To make this data accessible, we have developed an **interactive dashboard** that will be **integrated into the Knowledge Hub**. A beta version was presented in the TSL user forum and will be ready for publication at the end of the project. A description of the data and methodology will be included on the landing page.

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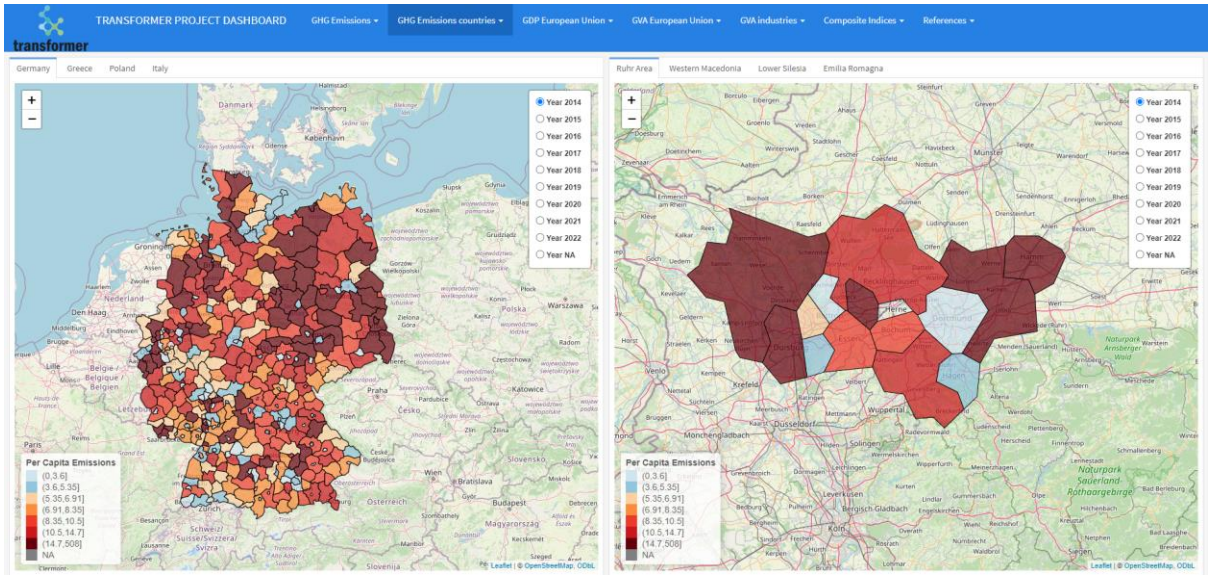

Figure 2: Screenshot of the first version of the QRAFT-Dashboard.

4.4 Transition Readiness Tool

The transition readiness assessment of a region is built upon a systemic approach to cross-sectorial transition ecosystem ("What is a transition ready ecosystem?") that defines the required elements and sub-elements that a region should have in order to be characterized as transition-ready.

The TSLs are able to use the **Transition Readiness Self-Assessment Tool answering a set of qualitative questions to calculate their transition readiness level and identify their weak points**. The tool consists of two levels: the first one includes a **small set of questions that can be easily answered** by the TSLs while the second level includes the full set of questions that require a broader knowledge of different regional aspects. The second level **provides more detailed results in terms of transition readiness score**. The analysis also allows for a comparative assessment with benchmark and other region's transition readiness, highlighting areas of concern that fall below the average performance and providing recommendations (linked to the transition model/roadmap) on how to speed up the transition towards climate neutrality.

The Transition Readiness Self-Assessment Tool is recommended to be used during the first phase of the transition process as it is a **useful step for the creation of possible pathways/scenarios** to achieve the TSL's vision. However, it is an iterative process allowing for adjustment of the transition pathways and the use cases.

This continuous learning during the next phases of the transition process is also crucial for adapting the strategies that were designed to accelerate a successful transition towards climate neutrality, ensuring that the region remains on course to achieve its desired outcomes and maximize the impact of its transition efforts through the pilot use cases.

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Figure 3: Screenshot of the results tab in the Transition Readiness Tool

4.4.1 Initial Feedback from the TSLs on the Transition Readiness Tool

A validation workshop took place on 18th October 2023 with RUB, RC, BMR, and FIT to validate the elements and the sub-elements of the Transition Assessment Framework upon which the transition Readiness Tool was built. Also, during October and November 2023, feedback from TSLs was collected through a dedicated questionnaire on the elements that are important for achieving their vision and goals, the sub-elements that should be ''measured'' for the selected elements and the representativeness of the qualitative questions. This feedback was used for creating the two levels of questions in the Transition Readiness Tool.

The Transition Readiness Tool was presented to the follower regions of the User Forum in a session organised in April 2024 and positive feedback related to its usefulness and the level of achievement of its objective was collected. Additional discussion about whether there are any elements or sub-elements that a transition-ready region needs but are not included in the current version of the tool took place with the User Forum participants. This feedback will be used for future improvement of the tool beyond the project.

The tool was also presented during the TRANSFORMER final conference at Bochum in June 2024 and some more suggestions related to what additional results a user would like to receive from the tool were collected for future integration.

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4.5 The Toolkit

The TRANSFORMER Toolkit is an essential outcome designed to support the practical implementation and operation of the Transition Super-Labs. It comprises of a set of tools and resources that facilitate the engagement of stakeholders in the innovation process, ensuring that the solutions developed are user-centric and tailored to the specific needs of each region.

Tools such as the **Open Matchmaker**, **Transition camp**, **Bespoke Social Cafe**, and **B2B Rotation** foster collaborative environments and stimulate innovation, sustainability, and socioeconomic benefits by enabling stakeholders to connect, share ideas, and co-create solutions. Thanks to their flexibility, they can attract a variety of stakeholders such as public authorities, enterprises, financers, investors, researchers, and civil society and then foster collaborative environments that stimulate innovation, sustainability, and positive socioeconomic impacts.

The Toolkit's design focuses on **versatility and adaptability**, allowing it to be used across various contexts and scales. Whether in the initial planning stages, during the execution of transition strategies, or in the scaling phase, the Toolkit provides the necessary guidance and resources to manage complex projects effectively. It helps in building capacities among local stakeholders, equipping them with the skills and knowledge needed to drive the transition independently; and enhancing engagement and innovation across stakeholder groups contributing to meaningful collaborations and actionable plans, which are crucial for the development of Transition Super-Labs.

Tool	Usage/Benefit
Open Matchmaker	The Open Matchmaker tool is an event matchmaking service that allows event participants to create personalised profiles showcasing professional backgrounds, areas of expertise, and interests. The pre-event interaction allows individuals to make connections with like-minded peers. During the event, the tool creates opportunities to network and post-event it works as a way to follow up on connections made and to continue exchanges.
Transition camp	The Transition camp is a one-day event that brings together stakeholders of the Transition Super-Lab in a collaborative setting. Stakeholders have the opportunity to engage with one another, exchange insights, and collectively define the objectives of the TSLs, their scope, and the expected outcomes. By working together from the beginning of the project, the different stakeholders develop a shared vision and goal.
Bespoke social cafe	By presenting during the Bespoke social cafe, actors from various sectors have the opportunity to present their ideas to a diverse audience and to receive feedback, insights and perspectives from professionals and experts from other sectors. One of the main objectives of the Bespoke Social Cafe is to facilitate twinning and partnering opportunities.
B2B Rotation with finance officers	This is an additional tool that can be implemented by the TSLs. The B2B Rotation is a competition that allows companies to participate in a face-to-face matchmaking session with funding and finance experts. During the rotation, each participant has a designated amount of time to present their project, outline

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	their funding requirements, and discuss their business models with financial officers. Participants receive personalised feedback, guidance and insights from professionals who specialise in funding and financing.

Table 4: TSL Usage of the Toolkit

By providing structured yet flexible support, the Toolkit ensures that each TSL can develop unique solutions that are **both innovative and directly applicable to their local challenges**, thereby maximizing the impact of the project's methodologies and approaches.

4.5.1 Initial Feedback from the TSLs on the Toolkit

The stakeholders that the Toolkit is aimed at are public authorities, private companies, and research institutes; at the same time, the Open Matchmaking Tool was tested with both TRANSFORMER regions and external stakeholders.

The feedback provided on the Toolkit during the events was geared towards ease of use and user-friendliness. However, this type of platform normally is used for a specific big event, feedback provided by users indicates that perhaps the tool is better geared towards larger events. Another issue encountered with this tool has been that it is promoted late when TRANSFORMER has hosted local events, as the information about the event does not arrive early enough, and there is not enough time to properly promote the platform.

During the events held so far, the audience reacted positively to the platform but in the end, not many people decided to register.

4.6 Initial Exploitation within Project Duration: TSL User Forum

In order to prove the relevance, applicability and exploitability of the project approach, we have organised an exploitation activity for external regions: the **TSL User Forum**.

The TSL User Forum offered **knowledge exchange, practical insights, funding possibilities, and studies to help regions replicate and implement the TSL concept**. It sought to unite regions interested in adopting this innovative approach, facilitated capacity building and networking and supported the replication of successful TSL projects and fostered regional collaboration. Key objectives included sharing best practices, integrating learnings into the Super-Lab Roadmap and Knowledge Hub, and promoting partnerships.

As **part of capacity building**, the TSL User Forum incorporated online sessions aimed at guiding European regions in adopting and implementing the TSL methodology. These sessions covered critical topics including understanding the rationale for TSL, navigating the Roadmap and Transition Model steps, managing stakeholder relationships, strategies for engagement, action plan development, project replication, sustainability assurance, KPI evaluation, utilizing the Knowledge Hub for resources, and exploring finance opportunities.

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Moreover, the TSL User Forum included two significant in-person events: The Brussels Event, held in early 2024, and the final Transformer project event in Bochum in June 2024. These gatherings were instrumental in fostering networking opportunities and deepening participants' understanding of the Transformer project and TSL concept. In addition to presenting key project results, the Bochum event focused on sharing insights and outcomes from TSL User Forum discussions.

Figure 3: TSL User Forum offering

The regions could engage on two levels in the replication:

Replication level 1: "Being inspired"

- Exploring the feasibility of the uptake of the TSL concept in the region.
- Accessing the Capacity Building Programme offered to better understand the concept of Transition Super-Labs and develop a replication plan.
- Regions could also experiment with the stakeholder engagement process and provided feedback on specific opportunities and challenges.
- Regions could also have access to the Quantitative Regional Assessment Framework Tool and gained support to interpret the data on their region, easily accessing the tool, and benchmarking their region.

Replication level 2: "Replication potential"

- Accessed the Capacity Building Programme to better understand the concept of Transition Super-Labs and developed a replication plan.
- Regions could choose to conduct a feasibility study of their choice (QRAFT, Transition Readiness Assessment, and Evidence-based Use Case Impact Assessment Methodology). These methodologies were applied, tested, and evaluated to gain a deeper understanding of the region, its transition needs, and potentials.

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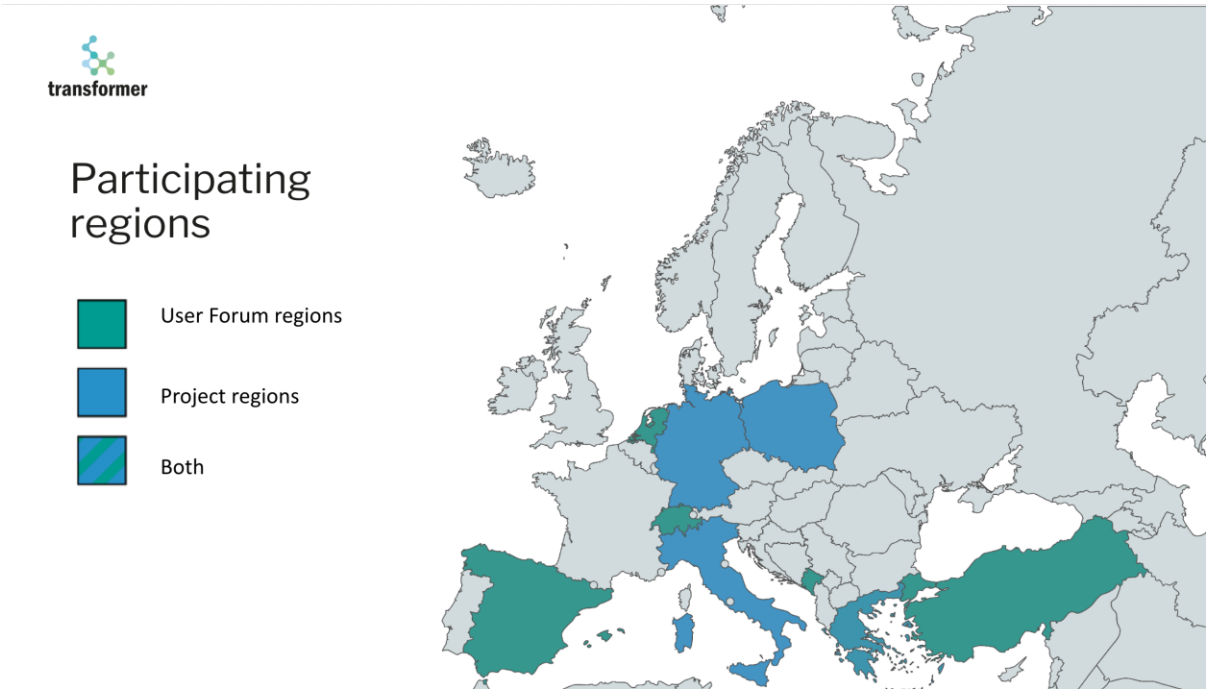

Figure 4: TSL User Forum participating regions

The TSL User Forum participants were invited to join the newly established Working Group of the European Network of Living Labs to continue the dialogue on the TSLs and collaborate on further initiatives. The Working Group is led by TRANSFORMER partner CERTH.

4.6.1 Initial Feedback from TSLs on the TSL User Forum

During each session of the TSL User Forum, feedback was meticulously gathered from the participants. These sessions allowed attendees to reflect on the topics presented, offering their perspectives and insights drawn from their unique regional contexts. This process enabled a rich exchange of ideas and highlighted region-specific challenges and solutions.

The primary aim of the TSL User Forum was to engage stakeholders from regions external to the project's core Transition Super Labs. Consequently, the TSLs did not participate in providing feedback during these sessions.

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5 Knowledge, Data and Intellectual Property Rights Management

In order to be able to exploit all project results and outputs, we needed to ensure that they could be shared, disseminated and essentially – openly accessed and under what conditions. All dissemination in the TRANSFORMER project is in accordance with applicable Intellectual property rights restrictions and in accordance with Horizon Europe and as defined in the project's Grant Agreement.

5.1 Existing intellectual property

All deliverables and outputs of the project are open access.

The development of new information systems, frameworks or methodologies may require previous knowledge, software or already existing resources and background. These assets are and will remain the property of the project partners during and after the project execution. When information was sensitive to their participants or connections, the consortium incorporated it only in an aggregated, generalised and abstracted form that respects the needs of participants/clients.

5.2 Access rights

Access rights to the project results and deliverables are granted to the project partners since all have participated in its implementation. Therefore, all partners will have the right to use and exploit the project results without any fee or charge, including the right to sublicense to its affiliates. Results are owned by project partners that generated them.

From the start, TRANSFORMER has taken an open-science approach to develop its methodology using open standards, protocols and, where applicable, open-source software. The majority of the project's research outputs are published following open-access requirements.

5.3 Open data sharing

TRANSFORMER's approach towards data management: The project involves collecting data, including personal data and metadata.

All processing of personal data will be conducted following the provisions of 1) the GDPR Regulation (EU) 2016/679)24, 2) the Universal Declaration of Human Rights and the Convention 108 for the Protection of Individuals with regards to Automatic Processing of Personal Data, and 3) the national laws applying its provisions, including those governing the acquisition of valid consent.

TRANSFORMER generates various data including quantitative and qualitative research data, research reports, deliverables, internal evaluation data, participant lists, dissemination material, meeting minutes, press releases, and agendas.

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Confidential data, as well as data about persons, data not meant for the public and internal data is treated as such and only stored via password-protected platforms. This kind of data is not a part of the exploitation.

Research data collected and generated by the project is made open and offered to the **Open Research Data Pilot,** in which TRANSFORMER declares its intention to participate.

In the TRANSFORMER project, the priority is accessibility while also respecting intellectual property rights (IPR). The management of the access to project results is done by:

- Publishing in open-access journals, presenting at academic conferences and public events (fairs), and share reports online, and organise knowledge-sharing events
- Granting non-exclusive licences, informing and involving stakeholders, disseminating the results with following regions (replication), and complying with EC guidelines

5.3.1 Data handling

All data handling procedures are defined in the Data Management Plan (D1.1) and therefore apply to i.a. also the aforementioned key outputs. The plan outlines how data is created or collected and the way in which it is handled, managed and shared throughout the project and thereafter. For more detailed references when it comes to the individual outputs, please refer to the D1.1.

5.3.2 Confidentiality

The consortium is committed to making knowledge, information and data produced through the TRANSFORMER project as exploitable and accessible as possible to third parties. A GDPR disclosure or waiver will be required considering the confidentiality of some data. Protection of Intellectual Property has and will continue to follow the principles of the European Union and is addressed in the consortium agreement.

5.4 Risk Management

5.4.1 Regulatory Risks and Mitigation

Regulations vary by region and can change over time, which could potentially impact the development and upscaling of additional Transformer Super Labs (TSLs). That is why the key outputs have a built-in component of flexibility, as it is essential to build a solid foundation that includes a variety of stakeholders. E.g. the TRANSFORMER Roadmap lays out the TSL development process and ensures that there are multiple opportunities to check-in with the different stakeholder groups and this works as a mitigation strategy to prevent the development of projects that will not be able to be implemented.

While regulations related to achieving climate neutrality in Europe can change over time, with the diversity of stakeholders involved in projects and the quantitative and qualitative tools used in the

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project, stakeholders should be able to assess the regulatory risks and be able to make informed decisions about whether to proceed with replication and scaling up and/or how to adapt.

5.4.2 Market Risks

Most of the market risks as related to the replication and development of a TSL, which is guided by the Roadmap. Following it, the assumption is that TSLs would be able to avoid the market risks: it should be able to identify the topics of greatest interest for the region; where there is an unfulfilled need; and work with diverse groups of stakeholders.

Other market risks are equally identified and tested through the TSL User Forum, with the goal of avoiding them.

5.4.3 Technical Risks

When it comes to technical risks, they principally apply to the maintenance of the Knowledge Hub and other online tools. As the Knowledge Hub is fully digital, if the website becomes inaccessible as the result of a malicious attack or a technical issue, the results of the TRANSFORMER project will no longer be accessible.

Currently and going forward, the Knowledge Hub is hosted at CERTH/HIT server and will be technically maintained by CERTH/HIT's own resources after the end TRANSFORMER project, ensuring not only technical upkeep but also further exploitation possibilities through the CERTH's own network.

6 Monitoring and Key Performance Indicators

6.1 Definition of KPIs to Measure Future Exploitation Success

All key outputs of the TRANSFORMER project discussed in this plan are meant to achieve a high level of scalability and support the regional green transition. Therefore, the four pilot TSL regions - the Ruhr Area, Germany; Emilia-Romagna, Italy; Lower Silesia, Poland; Western Macedonia, Greece serve as a flagship reference point for all other regions under transition that will be able to use the best practices, recommendations and guidelines derived from the real-life demonstrations of the project in order to develop their customised transition strategies. That is the reason for detailed monitoring of current pilots and further evaluation that will help inform exploitation strategies.

Looking at exploiting and uptake of TSLs (or partial TSL solutions) and building up transition regions across Europe, **the Key Performance Indicators (KPIs)** suggested below reflect the goals of enhancing regional development through TSLs piloted in TRANSFORMER and focus on both the direct outcomes and broader socio-economic impacts.

To that end, we suggest looking at the following KPIs when it comes to the exploitation of TRANSFORMER outputs and their exploitation or implementation:

- **Adoption Progress of TSL:** Following the implementation level of the TSL, e.g. using the steps in the Roadmap, following the completion level of a TSL.

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- **Adoption Rate of TSLs**: Measuring the number of local government and public services adopting project-developed TSL solutions.
- **Stakeholder Engagement Level**: Tracking the number and diversity of stakeholders actively engaged in the project and its exploitation activities. This includes participation in workshops, feedback sessions, and collaborative projects, which are vital for ensuring that the solutions developed are well-aligned with local needs.
- **Environmental and Socio-economic Impact**: Assessing the benefits derived from TSL implementation: such as job creation, CO2 emission decline, green energy adoption/ generation etc. This can be quantified by e.g. extrapolating from other KPIs collected on regional levels or tracking increases in employment rates, or indirectly – as a measure of progress towards climate neutrality of the region as a direct result of the project's outputs.

7 Dissemination, Communication and Engagement

7.1 Dissemination and Exploitation

In order to support further replication and uptake of the outputs that the project has developed, all TRANSFORMER results are communicated and disseminated at local, national, European and international levels, with the aim to target the key users and stakeholders as outlined above and in the Communication Strategy (D6.1).

Currently, the project communicates across the following channels sharing updates, insights and announcements through multimedia content such as photos, videos, and infographics to ensure engagement from target stakeholders.

- **Own channels**: the TRANSFORMER Hub, X (formerly Twitter), LinkedIn as well as consortium partner channels.
- **Network channels**: SSH partner channels; matchmaking platforms, researcher, policy, industry, start-up hubs and their online channels.

Most of these accounts, including the TRANSFORMER website will remain online, even if not continuously updated after the end of the project and therefore available to all interested stakeholders. An additional uptake by another – similar – initiative or CINEA itself is being currently evaluated.

Outreach and dissemination take place through social media[7], external newsletters, events and workshops. The purpose of these different channels is to educate, inform, build up anticipation and engagement and actively involve key stakeholders and multipliers.

[7] X/Twitter account ttps://twitter.com/Transformer_eu and LinkedIn account http://linkedin.com/company/transformer-eu

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7.2 Engagement and Exploitation

In order to maximize the impact and ensure further acceptance of the TRANSFORMER Knowledge Hub, Toolkit and Roadmap, it is important to ensure not only the sharing of knowledge and tools, but also active engagement of the stakeholders for whom they are destined. Further exploitation with target stakeholders is achieved through a **multi-channel approach** tailored to the specific needs and preferences of each target group.

Target stakeholder	Engagement channels and tools
Regional government authorities and policymakers	**Formal consultations, policy workshops, and demonstration projects** are effective, providing them with **direct evidence** of the project's benefits and operational frameworks. These activities are complemented by **policy briefs and case studies** available through the Knowledge Hub, which policymakers can use to advocate for and design more informed legislation.
Academic and research institutions	They are engaged through **collaborative research initiatives, conferences, and publications** that foster an academic exchange of ideas and findings. The project ensures their active involvement by offering opportunities for joint research and access to unique data sets collected during the project's implementation. Industry partners are involved through business roundtables, innovation challenges, and pilot testing opportunities that allow them to experiment with and influence the development of project outputs like the Toolkit and Roadmap.
Local communities, NGOs and civil society organizations	The project utilizes **community forums, public consultations, and participatory design sessions.** These inclusive formats ensure that diverse community perspectives are captured and that the transition strategies are adapted to meet local needs effectively. Regular updates and informational materials are disseminated through local media channels and the project's online platforms to keep these stakeholders informed and engaged throughout the project lifecycle.
Private sector and industry partners	Industry partners are involved through **business roundtables, innovation challenges, and pilot testing** opportunities that allow them to experiment with and influence the development of project outputs like the Toolkit and Roadmap.

Table 5: Engagement channels and tools

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7.3 TRANSFORMER Cafés

In addition to the existing tools and channels, we find it important to focus the exploitation on **furthering the dissemination through personalised and engaging knowledge sharing and capacity building** in (other) regions. To that end, one of the most suitable tools would be an online series – a TRANSFORMER Café – dedicated to the presentation of each of the outputs or tools and their use with a dedicated engagement session.

A TRANSFORMER Café:

- Has a defined structure, invited guests and is primarily online.
- Starts with a general introduction to the Transition Super Labs and the TSL process
- Spotlights a specific output – each one of the sessions is dedicated to one of the outputs
- A forum to directly address questions and answers (Slido)
- Invitations and participation of the SSH group of experts and regions as well as beyond
- Ongoing dissemination, due to its online placement, even beyond the length of the project

The format of the TRANSFORMER Café would be:

- A series of 5 agile sessions, each running for 1 to max 1.5 hours.
- They will comprise moderated engaging dialogues with the key presenters of a selected output and a Q&A.
- With a view to making the sessions more engaging, interactive webinar tools such as Slido will be utilised as support.
- The recordings will be published online, together with the material, for further reference and dissemination.
- All dissemination shall be supported by TRANSFORMER project partners, the SSH community and more.

In the case of physical events, that are planned beyond the length of the project, the sessions could also take place in person and be attached to a larger event such as the Barcelona SCEWC 2024 or POLIS conference.

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7.4 Dissemination and Exploitation Beyond the Length of the Project

To maximise reach, TRANSFORMER has capitalised on and included existing networks in dissemination activities (ENoLL, EIP-SCC, CIVITAS, matchmaking initiatives) and involved key research and industry stakeholders. Updates and event information were systematically shared with other projects on social media including Scalable Cities and Smart Cities Marketplace, Interreg H2CE projects.

Equally, TWE created and managed the **SSH joint repository**, a sister-project initiative, and a full mailing list and joint event activities. TRANSFORMER news articles were also published in projects' newsletters (EC2 and SSH Centre), along with a publication focused on Citizen Engagement methods.

As part of exploitation, relevant TRANSFORMER partners will **continue to disseminate, share, promote and communicate its outputs and outcomes** even beyond the length of the project. Further exploitation of results is assured through the continued support for the Knowledge Hub, the website and the Roadmap as well as, capacity building programmes and TSL User Forums. The Roadmap processes in TSLs also provide **opportunities for exploitation workshops with financing and funding agencies/organisations**.

8 Exploitation Strategies

8.1 Competitive Analysis

When it comes to sustainable transformation in regions, the pathway towards net zero is complex. This is why TRANSFORMER's **integrated approach**, which combines the Knowledge Hub, Toolkit, and Roadmap into a comprehensive suite of tools, is a lot more suitable for exploitation and scaling up. It does not focus on one aspect of transformation, such as technology deployment or policy advice, it offers a complex set of solutions and tools that are flexibly applicable.

This is further enhanced by the **method of engaging stakeholders** through the quadruple helix model, involving collaboration among governments, academia, industry, and civil society. This inclusive approach ensures that all relevant perspectives are considered in the development and implementation of transition strategies, thereby increasing their effectiveness and acceptance.

Additionally, the project's outcomes are designed to be **highly adaptable,** allowing for tailored solutions that can meet the specific needs and challenges of different regions, a flexibility that is sometimes lacking in more prescriptive programs. All this helps the project to an easier applicability across regions.

Lastly, the robust feedback and iterative improvement processes continuous updating of the Knowledge Hub and refining the Toolkit and Roadmap based on user experiences and changing conditions ensure that the TRANSFORMER tools and methodologies maintain their relevance, utility, flexibility and applicability also beyond the length of the project.

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8.2 Exploitation potential

Assessing the exploitation potential of the abovementioned results - the Knowledge Hub, Toolkit, Transition Readiness Tool, Roadmap and User Forum - we have looked at where each of the results stands in terms of exploitation potential, readiness and usability and potential user feedback.

- **Exploitation potential:** We looked at how broad the span of the output applicability is and what is the potential reach, e.g. due to the number of knowledge products incorporated or due to the openness to all different target stakeholders.
- **Readiness:** How finalised and ready to use the output is. Whether it has already been tested within the consortium TSLs or even externally.
- **Usability:** How flexible in adaptation it is, whether it is adapted / adaptable to the local and regional contexts.

This allows us to understand further, where and how to focus the recommendations e.g. for dissemination activities to enhance uptake and support greater adoption.

TRANSFORMER results	Exploitation potential	Readiness / Usability	Recommendation for exploitation
Knowledge Hub	The Knowledge Hub integrates existing knowledge and technologies to create a new step-by-step advisory hub to build competence in regions. It includes tools, methodologies and best practices, and is designed for easy accessibility and ongoing updates.	The Knowledge Hub has been developed and demonstrated in an operational environment, given its usage by stakeholders across various regions. It is actively being used for its intended purpose, and feedback loops are in place to refine and optimize its functionality.	For the KH to have the highest potential for exploitation, it should remain open and continuously updated.
Toolkit	The Toolkit comprises various tools that have been specifically developed to support the operations of TSLs. These tools facilitate collaboration, innovation, and practical engagement among stakeholders.	The various tools have been tested, showcasing their utility in facilitating stakeholder interactions and supporting the co-creation processes within the TSLs. However, given the nature of such tools, continuous improvements and adaptations are expected as they are further integrated into different regional contexts.	For the Toolkit, adaptability to local contexts will be key. Regional adaptations should / would ideally be jointly done with application workshops.

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TRANSFORMER results	Exploitation potential	Readiness / Usability	Recommendation for exploitation
Roadmap	The Roadmap outlines a systematic and iterative process with defined steps and activities for implementing the transition strategies. It is based on best practices derived from the TRANSFORMER project's experiences.	The Roadmap has been to a large extent integrated and tested in an operational environment across the four initial regions. The detailed and structured nature of the Roadmap, along with its application in guiding new regions towards climate neutrality, indicates high readiness.	For the Roadmap to remain highly usable, the various steps have to remain flexible enough to adapt to various regional contexts.
Quantitative Regional Assessment Framework for TSL	The QRAFT methodology helps define transition needs and potentials of regions to reduce GHG emissions from a TSL perspective.	The QRAFT is designed to support the first steps in the TSL process and the insights generated through this methodology feed into the next steps of the TSL process, indicating necessity and usability.	For the QRAFT methodology to remain highly usable, the steps, the calculation inputs and outputs have to be simple enough for the regions to be able to apply them. Clear outlines of interconnections and next steps shall also help with further application.
Transition Readiness Tool	The Transition Readiness Tool calculates the transition readiness of a region through a set of qualitative questions and identifies the strengths and weak points of the region.	The Transition Readiness Tool has been tested by the TRANSFORMER TSLs providing valuable insights on the regions' transition readiness score and recommendations that can be used by the regions beyond the project for increasing their transition maturity. At this stage, a single user from each region is able to use the tool.	For the Transition Readiness Tool to exploit its maximum potential, multiple actors from the same region with different expertise have to be able to answer the set of qualitative questions.
TSL User Forum	The TSL User Forum is a collaboration and exchange mechanism which aims to support the	The TSL User Forum has been piloted throughout the second year of the TRANSFORMER project.	The TSL User Forum served to transfer knowledge to further regions within the project.

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TRANSFORMER results	Exploitation potential	Readiness / Usability	Recommendation for exploitation
	transfer of the TSL concept to follower regions.		As a part of exploitation, its continuation is planned in a different format: through ENOLL Working Groups.

Table 6: Exploitation potential

Each component of the TRANSFORMER project exhibits a high level of exploitability, suitable for deployment and utilisation in various local / regional contexts. The Knowledge Hub and Roadmap are particularly advanced and should be able to demonstrate successful application and integration in real-world settings. The Toolkit shows substantial functionality and utility in relevant local and regional environments. These assessments suggest that the TRANSFORMER project outputs are not only innovative but also practical and ready for wider adoption and implementation across EU regions.

8.3 Exploitation at Consortium level

This exploitation plan focuses on identifying the tangible and intangible results of the TRANSFORMER project, optimising their value, enhancing their impact and facilitating their integration at multiple levels. To secure the sustainability of the key three tools, as the principal outputs of the project, the consortium is committed to dedicating efforts to promote it across Europe, creating synergies with other initiatives or stakeholders, also beyond the duration of the project.

Currently, several partners already plan to continue to disseminate results and exploit the results of the project through their own networks and presences with the aim to promote uptake and subsequently exploitation of the outputs:

- The TRANSFORMER project has submitted applications to present at the POLIS Conference (November 2024, Karlsruhe, Germany) and the European Week of Regions (October 2024, Brussels, Belgium).
- The Roadmap process alongside of other TRANSFORMER outputs will be discussed in an academic publication by RUB.
- A presence is planned at the Smart City Expo Barcelona (November 2024, Barcelona, Spain).
- Transition Super Living Lab Working Group session at the Open Living Lab Days (September 2024 in Timisoara, Romania).

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8.4 Exploitation at partner level

A detailed description of partners' exploitation intention to use TRANSFORMER results and to support their own activities is shown below:

WHO	ACTIVITIES	ROLE IN PROJECT	EXPLOITATION INTENTION
ANKO	Proposal for funding and communication	TSL Co-ordinator in W. Macedonia	A proposal for funding the establishment of a TSL, one of the TRANSFORMER use cases in the region, has been submitted to the Greek Managing Authority of the Just Transition Fund, utilizing the feasibility study that has been developed. The proposal outlines the implementation of TRANSFORMER outputs, along with corresponding communication and dissemination activities targeted at regional stakeholders and the public.
CERTH	Communication and Dissemination	WP5 Leader	Technical maintenance of Knowledge Hub and Transition Readiness Tool and continuous update of the Knowledge Hub with additional tools and methodologies beyond TRANSFORMER project. Presentation of TRANSFORMER results in future relevant events. Creation and lead of ENoLL Transition Super Living Lab Working Group to build upon the TRANSFORMER results and examine further the role of TSLs as transition accelerators of climate neutrality. Ongoing discussions with Mission 100 Climate-Neutral Cities on how the TSL approach can contribute towards the achievement of the objectives of EU Missions. Co-authoring scientific publications about TRANSFORMER results.
ENoLL	Communication	Capacity Building	Presentation of TRANSFORMER results in relevant events and Living Lab meetings; working group at ENoLL with User Forum participants and other Living Lab practitioners

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WHO	ACTIVITIES	ROLE IN PROJECT	EXPLOITATION INTENTION
RC	Dissemination	Project Manager & WP4 Leader	Presentation of TRANSFORMER Final Results at the POLIS Conference 2024, & future relevant events Inclusion of the TRANSFORMER project in the database of NetZeroCities and promotion of the TSL approach within the 100 Mission Climate-Neutral Cities. Co-authoring scientific publications about TRANSFORMER results.
RUB	Dissemination	Project Coordinator and WP 2 leader	Authoring scientific publications about TRANSFORMER results and further developing the TSL approach through presentations and discussions at conferences and workshops.
TWE	Communication and Dissemination	WP6 Leader	Continued support for the TRANSFORMER website Continued dissemination of key outputs through relevant stakeholder fora: events, conferences, presentations Continued promotion of TRANSFORMER cafes

Table 7: Exploitation at partner level

9 Conclusions and Recommendations

In conclusion, the TRANSFORMER project has successfully developed and demonstrated a suite of tools and methodologies designed to facilitate regional transitions towards climate neutrality. Each of the key outputs —the Knowledge Hub, the Toolkit, the Roadmap, and the Transition Readiness Tool— has shown significant potential for exploitation, demonstrating usability, readiness, and high applicability across various regional contexts. Equally so, the User Forum and the QRAFT methodology have shown their usability and further potential for exploitation within the process.

Taking into account all the learning through the project, in order to ensure the successful exploitation of these outputs, we provide the following recommendations:

- **Start with a Value Proposition**: Implementation of a TSL depends on the participation of motivated stakeholders. To ensure that they are motivated to participate over the long term in a systemic transformation it is recommended to create a common vision for the transition and provide a clear value proposition.

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- **Ensure collaboration and co-creation**: The implementation of a TSL benefits from collaborative governance so that it can help provide feasible solutions to complex regional transformation challenges. Ensuring collaboration, balanced representation and enabling all stakeholders to participate in a large-scale Living Lab is therefore highly recommended.
- **Build flexibility into the approach**: Due to limited resources and complexity, it is vital to ensure a feasible and manageable scope of the TSL and the Pilot use cases, usually through an iterative and complementary approach, that helps all stakeholders to follow individual steps of the TSL implementation progress.
- **Engage key stakeholders and build their capacity**: Focus on building capacity among local stakeholders through training and engagement activities. This will ensure that regions have the necessary skills and knowledge to drive the transition independently.
- **Monitor progress and evaluate results**: Implement a robust monitoring and evaluation framework to track the progress of TSL implementation and note partial and final results. Key Performance Indicators should include adoption progress, stakeholder engagement levels, and environmental and socio-economic impacts.
- **Continue to disseminate**: Create a dissemination strategy and share partial and final results through various channels, including social media, newsletters, events, and workshops in order to secure continued stakeholder and political support. Target key stakeholders to ensure widespread adoption and ideally further replication of the TSL approach.

More concretely when it comes to the TRANSFORMER outputs, we recommend:

- **Continuous Updating and Accessibility of the Knowledge Hub**: Maintain the Knowledge Hub as an open and continuously updated platform to ensure it remains a relevant and valuable resource for stakeholders.
- **Local Adaptations of the Toolkit**: Facilitate regional adaptations of the Toolkit through application workshops. This will help tailor the tools to specific regional needs and enhance their effectiveness.
- **Flexibility in the Roadmap Implementation**: Ensure that the steps outlined in the Roadmap are flexible enough to adapt to various regional contexts. This will support the successful implementation of transition strategies across diverse environments.
- **Broad Utilization of the Transition Readiness Tool**: Enable multiple actors from the same region to use the Transition Readiness Tool. This collaborative approach will provide a more comprehensive assessment and enhance the region's readiness for transition.
- **Support for User Forum Continuation**: Encourage the continuation of the User Forum through ENOLL Working Groups to facilitate the ongoing transfer of knowledge and best practices to new regions.

By following these recommendations, the TRANSFORMER project will help maximize the impact of its outputs, supporting regions across Europe in their transition towards climate neutrality fostering sustainable development practices and contributing to further implementation of the TSL approach across regions in Europe.

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