GREEN WIN
CLEANTECH INNOVATION BOOSTER

ROADMAP 2025-2030

AMBITION & STRATEGIC PRIORITIES TO DRIVE INNOVATION AND CLEANTECH DEPLOYMENT IN CHEMISTRY, CONSTRUCTION, AND ENVIRONMENT IN WALLONIA

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BY SIGNING
« GREENWIN, CLEANTECH INNOVATION BOOSTER »,
THE INNOVATION CLUSTER ASSERTS ITS VITAL MISSION:

TO BRING TOGETHER
WALLOON AND INTERNATIONAL STAKEHOLDERS
TO BUILD **A SUSTAINABLE, INNOVATIVE, AND VALUE CREATING ECONOMY**
IN THREE SECTORS: CHEMISTRY, CONSTRUCTION, AND ENVIRONMENT

Through collaborative innovation, our vision is to contribute to **a prosperous and sustainable Walloon society** by driving collaborative innovation: **enhancing competitiveness, productivity, wellbeing, and delivering a more positive environmental, social, and societal impact.**
GreenWin is founded on three pillars of sustainability:
ECONOMY, ENVIRONMENT, AND SOCIETY.

GREENWIN, **AN INNOVATION ACCELERATOR FOR CLEANTECH** IN CHEMISTRY, CONSTRUCTION, AND ENVIRONMENT, SUPPORTS BUSINESSES IN ITS ECOSYSTEM **TO REACH THEIR ECONOMIC AND ENVIRONMENTAL GOALS.**

GREENWIN defines CleanTech as innovations - technologies, techniques, products, services, processes, or even business or industrial design models - **aimed at creating added value by boosting company performance through:**

- **Innovation in products**
- **Process improvements**
- **Resource optimisation...**

and reducing negative environmental and societal impacts through:

- **Lowering greenhouse gases (GHG) emissions**
- **Efficient use of raw materials...**

CLEANTECH ENABLES BUSINESSES TO:

- Position themselves as sector leaders.
- Meet the expectations of consumers and the financial sector (ESG), save energy, and reduce costs.
- Improve competitiveness and profitability.

CLEANTECH OFFERS INNOVATIVE SOLUTIONS TO:

- Reduce GHG emissions.
- Improve energy efficiency and develop low impact processes, products, and materials.
- Develop technologies for pollution prevention or remediation.

ENTREPRENEURS AND PUBLIC & PRIVATE INVESTORS can also seize this opportunity to develop new economic activities and generate long term returns.

FOR PUBLIC AUTHORITIES, INVESTING IN CLEANTECH MEANS:

- Creating sustainable, non offshorable jobs.
- Stimulating economic growth and regeneration.
- Reducing public health costs related to pollution.

CLEANTECH IS AN ESSENTIAL DRIVER OF ECONOMIC AND **INDUSTRIAL REDEVELOPMENT FOR OUR REGION.**

Its implementation anticipates the need for energy, material, and human resources, which determine Europe's future prosperity.

ABOUT GREENWIN

GREENWIN'S *RAISON D'ÊTRE* IS TO ACCELERATE COLLABORATIVE INNOVATION IN CLEANTECH (ENVIRONMENTAL TECHNOLOGIES) **WITHIN CHEMISTRY, CONSTRUCTION, AND ENVIRONMENT SECTORS, FOR A PROSPEROUS AND SUSTAINABLE SOCIETY.**

GreenWin's mission is to bring together partners (and their expertise) and (public or private) funding to support and enable collaborative innovation projects (from R&D to market) in CleanTech for its Members, helping them achieve their ambitions.

GREENWIN'S CORE VALUES ARE:

CREATIVITY
BOLDNESS
COLLABORATION
COMMITMENT
TRUST

TO REINFORCE ITS STRATEGIC FUNDAMENTALS, **GREENWIN ADOPTS FIVE YEAR ROADMAPS SETTING OUT ITS STRATEGIC PRIORITIES.**

GreenWin aims to be the leading Walloon hub for mobilising innovation forces in Cleantech in Wallonia, in Belgium, and internationally, across its **three sectors:**

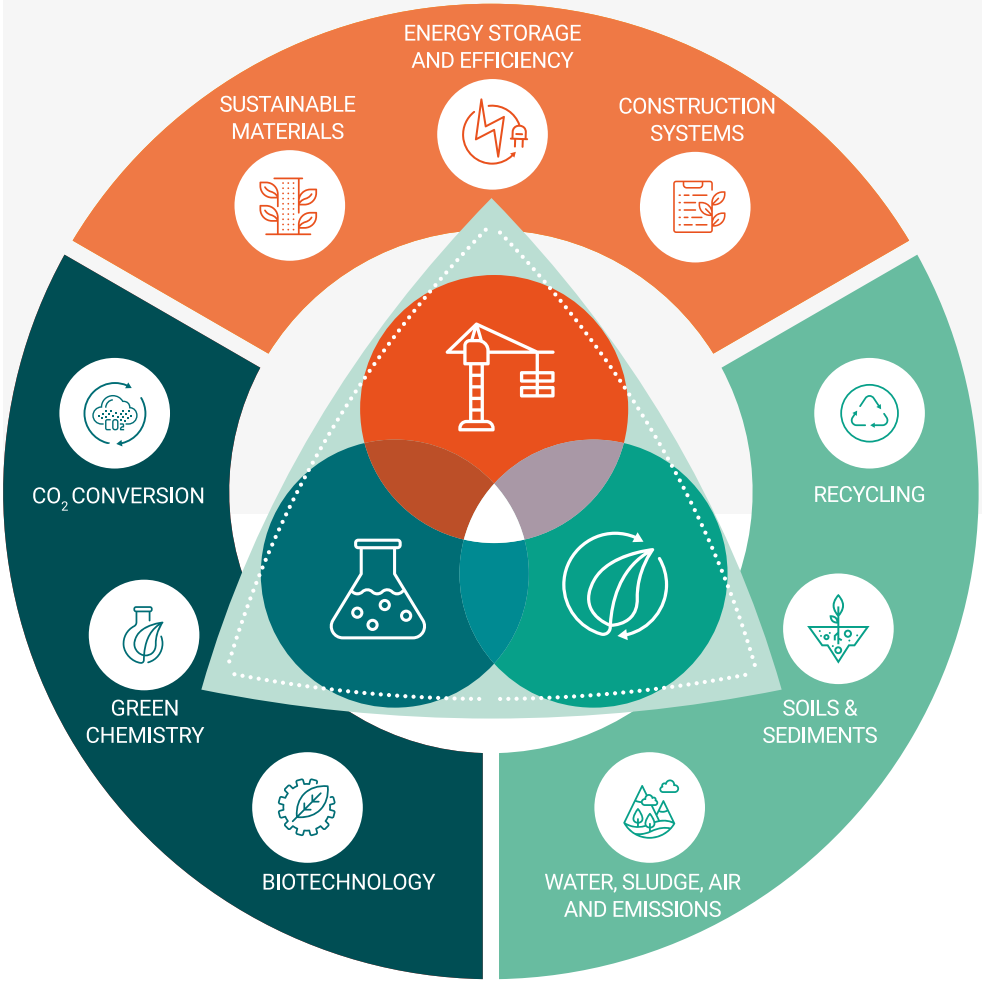
CHEMISTRY *

CONSTRUCTION **

ENVIRONMENT

and in its nine strategic activity domains: Green chemistry, CCUS, Biotechnologies, Sustainable materials and energy efficiency/storage, Advanced construction systems, Recycling, Soils and sediments, Water/sludge/air and emissions.

The cluster's efforts naturally focus on cross sectoral intersections, which are the most fertile grounds for innovation.



** Chemistry includes biotechnology applications.*
***Construction includes renovation and refurbishment.*

OUR AMBITIONS

Every **GreenWin** project, in **Chemistry, Construction, or Environment**, in Wallonia, Europe, and worldwide, drives one inspiring objective:

HOW CAN COLLABORATIVE INNOVATION PROPEL WALLONIA TOWARDS A SUSTAINABLY PROSPEROUS, JOB CREATING ECONOMY?

The cluster sets clear, ambitious targets to accelerate industrial transformation by 2030 in Wallonia and aligns its Roadmap with the United Nations Sustainable Development Goals (SDGs).

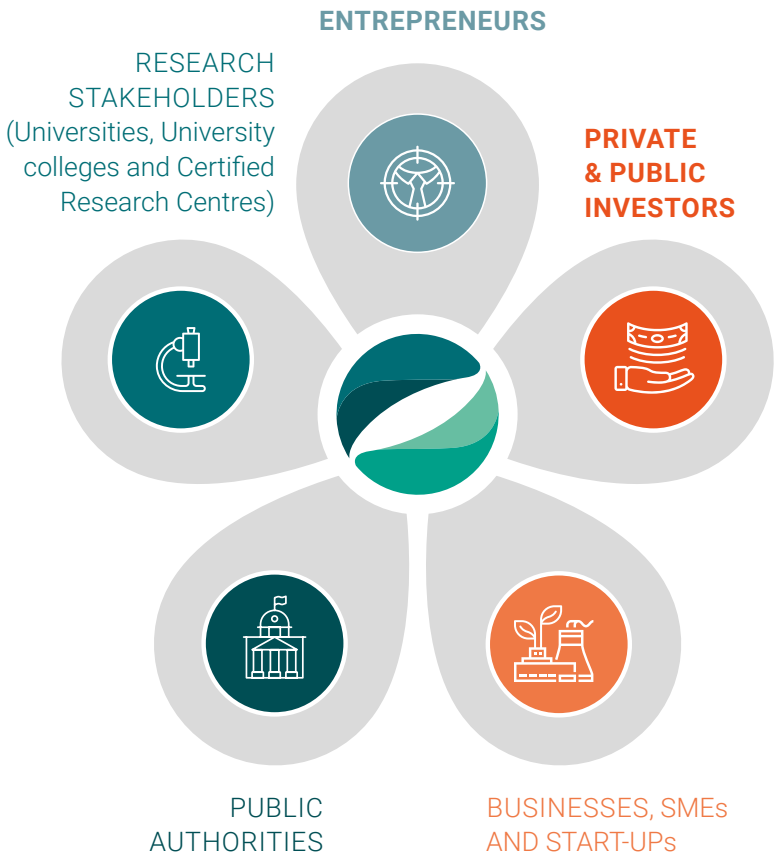
GREENWIN ASPIRES TO BE THE LEADING WALLOON REFERENCE SITE FOR MOBILISING INNOVATION FORCES FOR CLEANTECH IN WALLONIA, BELGIUM AND INTERNATIONALLY IN: **CHEMISTRY, CONSTRUCTION & ENVIRONMENT DOMAINS.**

GREENWIN:
FROM TRIPLE TO QUINTUPLE HELIX MODEL

Originally, cluster operations mandated by the **European Commission** were based on a triple helix model, where three players propelled functionality through interaction:

- **BUSINESSES**
- **RESEARCH ORGANISATIONS**
- **PUBLIC AUTHORITIES**

After 20 years, the concept must adapt to society's evolution: success now also depends on **mobilising entrepreneurs (including start-ups and incubators), and especially the increasingly ESG conscious financial sector.**



GreenWin intends to engage these additional pillars for the industrial transformation of its three sectors.

GREENWIN'S CURRENT PROJECT PORTFOLIO
CONTRIBUTES TO 12 OF THE 17 UNITED NATIONS SDGs.

The cluster aims to sustain and expand these contributions.

The Sustainable Development Goals are the pathway to a better, more inclusive future. They address global challenges such as poverty, inequality, climate, environmental decay, prosperity, peace, and justice

Goals are interconnected and, to leave no one behind, each target must be met by 2030.
These goals also act as criteria for good governance.

SUSTAINABLE DEVELOPMENT GOALS

: List of SDGs addressed by GreenWin's portfolio:

OUR PRIORITIES

GREENWIN UNVEILS ITS SECOND FIVE-YEAR ROADMAP, FOCUSED ON FIVE STRATEGIC PRIORITIES FOR 2025–2030.

These priorities are sustained over the next five years but are not exclusive: projects from any of the nine strategic domains of the cluster remain eligible for support.

THE FIVE MAJOR STRATEGIC PRIORITIES IDENTIFIED BY GREENWIN'S ADMINISTRATORS AND MEMBERS (ENTERPRISES, RESEARCH CENTRES, UNIVERSITIES, FEDERATIONS) ARE:

PRIORITY **#1** :
CIRCULAR AND/OR BIO-BASED MATERIALS

PRIORITY **#2** :
CLIMATE RESILIENT URBANISATION

PRIORITY **#3** :
CARBON NEUTRALITY

PRIORITY **#4** :
INDUSTRIALISATION OF CONSTRUCTION & ADVANCED BUILDING SYSTEMS

PRIORITY **#5** :
WATER, AIR, SOILS & ZERO WASTE

PRIORITY #1:
CIRCULAR & BIO-BASED MATERIALS

ACCELERATING IMPLEMENTATION OF CIRCULAR SOLUTIONS WITH INCREASED EFFICIENCY AND MORE POSITIVE ENVIRONMENTAL IMPACT, PRIORITISING TECHNOLOGIES AND SOLUTIONS ENHANCING COMPETITIVENESS.

Circularity in **construction**, renovation, **chemistry**, and plastics covers design, production, use, and end-of-life of materials. It aims to minimise waste and maximise reuse, recycling, and resource recovery.

Increasing resource circularity preserves non renewable natural resources, lowers total greenhouse gas emissions, and generates non offshorable economic activity. This applies to all material needs.

In construction, these materials offer sustainable alternatives to conventional ones: they reduce the carbon footprint over building and product lifecycles, and may offer advantages (user health, circularity, acoustic and thermal performance, etc.).
They build bridges between sectors to extract maximum value from raw materials.

EXAMPLES:

- Sand substitution
- Timber supply chain: innovative manufacturing processes and new products
- Bio-based insulating materials
- Bio-based paints, adhesives, binders
- Hybrid construction materials: mineral and bio-based sources
- Plastics circularity
- End-of-life deconstruction, recovery, and transformation into new innovative materials
- Preparation for reuse techniques
- Secondary mineral materials (new cement and concrete components, mineralisation of demolition waste) and synthetic materials (polymers, textiles, etc.)
- Eco-design
- ...

PRIORITY #2:
CLIMATE-RESILIENT URBANISATION

DEVELOPING SOLUTIONS TO ACHIEVE A CARBON NEUTRAL BUILT ENVIRONMENT RESILIENT TO CLIMATE CHANGE CONSEQUENCES.

Transitioning towns and communities towards carbon neutrality requires creating and disseminating solutions that reduce environmental impacts across lifecycles: high performance and sustainable materials, energy renovation, adaptable buildings for changing uses, integrating renewables, sustainable mobility infrastructure, and developing practices favouring urban densification, optimising existing spaces, protecting non built spaces, and sharing common solutions (district heating, energy communities, battery storage, etc.).

Technical innovation is also needed to adapt built environments to climate shifts and enhance collective resilience to extreme weather (combatting urban heat islands, managing heavy rainfall): permeable surfaces, greening, water management, recovery, and reuse…

EXAMPLES:

- Building energy renovation
- Reducing embodied energy
- Sustainable energy production, management, and storage
- Energy communities
- Infrastructure: heating and power networks, water management, recovery, and reuse
- Sustainable transport as part of urban planning
- Low carbon buildings
- Resilient urban planning: city greening, biodiversity, rainwater management
- Territorial foresight and innovation
- …

PRIORITY #3:
CARBON NEUTRALITY

DEVELOPING TECHNOLOGICAL SOLUTIONS TO REDUCE CO_2 EMISSIONS IN INDUSTRIAL SECTORS, BY:

- **Improving energy efficiency or electrifying processes.**
- **Developing technologies for synthesising novel decarbonised or low carbon energy carriers.**
- **Capturing, conditioning, and utilising CO_2 for construction materials, synthetic fuels, or chemicals.**

Rapid development of high performance, sustainable, low carbon energy solutions is crucial across all industries, especially in energy intensive sectors and those with significant process emissions, to maintain international competitiveness in accordance with the EU Green Deal.

Deployment will enable decarbonisation of vital materials used in key value chains, especially construction and chemicals.

EXAMPLES:

- Green chemistry
- Technical, digital, and process solutions for energy and environmental efficiency
- CO_2 mineralisation in demolition waste
- Capture technologies for small and medium emitters
- Air capture of CO_2
- CO_2 purification units for reuse
- Technologies for production, storage, and distribution of hydrogen
- CCU: CO_2 + H_2 conversion for e fuels (e-methane, e-kerosene, chemicals…)
- Chemical and biotech approaches to CCU
- Chemical energy storage & smart grids
- …

PRIORITY #4:
INDUSTRIALISATION OF CONSTRUCTION & ADVANCED SYSTEMS

DEVELOPING PROCESSES AND TECHNICAL SOLUTIONS TO ENABLE A TRIPLE PERFORMANCE LEAP IN CONSTRUCTION AND RENOVATION: PRODUCTIVITY, EFFICIENCY IN USING MATERIALS AND ENERGY, AND QUALITY OF PROCESSES AND FINISHED WORKS

For all stakeholders, regardless of size, the common challenge is cost efficient, profitable construction or renovation with lower workforce and environmental impact, while guaranteeing quality.
Several strategies may be pursued:

- **Innovative solutions and construction systems** that streamline supply, management, and on site implementation of materials.
- **Industrialisation of construction and renovation:**
  - **Product** industrialisation comprises two key concepts: off site prefabrication (shifting construction activities away from the site for module fabrication) and mass customisation (customising serially produced modules)
  - Industrialisation of value chain **processes**, with new business models, standards, and significant efficiency and productivity gains for all participants

These solutions advance construction and renovation towards carbon neutrality and increased circularity.

EXAMPLES:

- Building energy efficiency
- Innovations to scale up renovation
- Aggregation of renovation demand-coordinated renovation schemes
- Off-site production: prefabrication
- Modular construction, adaptable modular housing
- Optimising resource and energy use
- ...

PRIORITY #5:
WATER, AIR, SOILS & ZERO WASTE

DEVELOPING PROCESSES, PRODUCTS, TECHNICAL SOLUTIONS, AND EQUIPMENT THROUGHOUT VALUE CHAINS TO:

- **Achieve the EU Green Deal's «zero pollution» aim:** effective, affordable technologies for treating air, water, and soils to remove toxic (historic or new) pollutants and assure a healthy environment for citizens.
- **Design processes for separating or treating toxic compounds in air, water, soils** (PFAS, PCB, PAH, asbestos, NOx, micropollutants…), **and waste** (mineral, polymer, textile, hospital waste…).
- **Add value to resources recovered from waste:** innovative, competitive waste recycling solutions to reduce reliance on virgin resources and foster local economic activity.

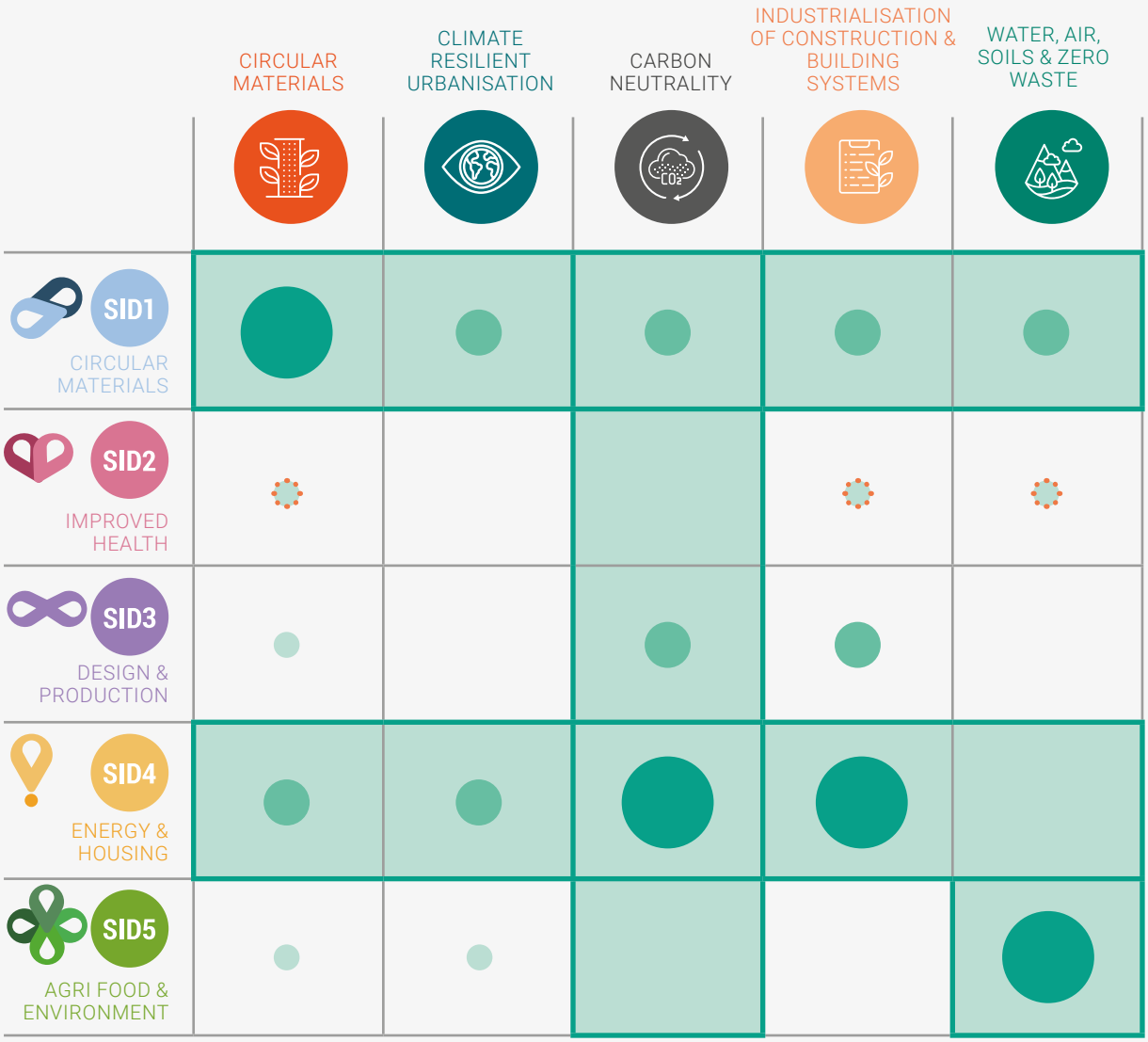
EXAMPLES:

- Indoor air quality
- PFAS, PCB, asbestos detection, removal and treatment…
- Mineral waste reduction
- Polymer waste reduction
- Hospital waste mitigation
- Polluted soil remediation
- Air treatment (NOx…)
- Effluent management (wastewater, stormwater, groundwater), water treatment, recycling and reuse
- Process optimisation and control (Zero waste, zero pollution)
- …

ALIGNMENT WITH WALLONIA'S S3
SMART SPECIALISATION STRATEGY

These five priorities for 2025–2030 demonstrate **Greenwin**'s continued alignment with Wallonia's S3 Smart Specialisation Strategy. The table below highlights the strategic innovation domains in which the cluster is active and involved.

Wallonia's S3 includes five Strategic Innovation Domains (SID), branching into 19 Strategic Innovation Initiatives (SII), with **GreenWin** active in 12.



THREE LEVELS OF CONTRIBUTION TO THE WALLOON SMART SPECIALISATION STRATEGY.

HEALTH AND PUBLIC HEALTH IMPACTS IN HOUSING AND ENVIRONMENTAL REMEDIATION PROJECTS.

DIS1 DIS4 DIS5 **GREENWIN PROJECTS PRIMARILY CONTRIBUTE TO DOMAINS 1 AND 4, AND SID 5 FOR ENVIRONMENT.**

IMPACT

GREENWIN: FROM VISION TO TANGIBLE IMPACT (KPIS)

OUR IMPACT:
Success criteria analysed at the end of R&I projects (often market uptake is realised after several years).

PROJECT SUCCESS CRITERIA:

- **Environmental:** reductions in CO_2 emissions including CO_2 equivalent, GHG balances, pollutant reduction/elimination*
- **Product Process Services:** technical/scientific aspects

VALUATION POTENTIAL OF COMPLETED PROJECTS:

- **Economic:** market launch, commercialisation, on KPI/project basis

VALUE ADDED AND JOB CREATION MEASUREMENT:

Tracking 10-year evolution of value added and employment (in FTEs) among Members, to enable KPI impact reading, contextualised for Members.

GREENWIN'S ROADMAP FULLY ALIGNS WITH THE PRIORITIES AND AIMS OF THE NEW WALLOON REGIONAL POLICY DECLARATION.

GreenWin actively supports these governmental objectives, especially through its five strategic priorities, aimed at **accelerating collaborative innovation and CleanTech deployment in Wallonia**'s three sectors, to maintain Members competitiveness (value added and employment), as measured against sector averages over the past decade.

ACTIVITY KPIS BY 2030:

- **150 innovation projects in the GreenWin portfolio**
  - 25% in cross labelling
  - 50% cross sectoral
- **A network of 350 members and partners.**
- **One major international conference annually.**
- **Three new structuring projects in Wallonia in the three covered sectors**, in addition to the two initiated in the previous 2020–2025 roadmap.

** Typical LCA (Life Cycle Assessment) deliverable covering scope 1 (direct emissions produced by the company), scope 2 (indirect, energy-related emissions), and scope 3 (emissions from and through upstream suppliers), projected over 10 years. A working group has been set up to standardise and further develop this tool/template by the end of 2024, with the aim of turning it into an eco-design, impact measurement, and reporting tool that companies can adopt to adapt their corporate culture.*

GREEN W!N
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