

*SCIENCE FOR THE TRANSITION TO A CIRCULAR ECONOMY OF THE NATURAL PARADISE
PROCESS INDUSTRY. 28-29 March. Covadonga, Asturias*

Working groups Reports

Participants of the different working groups:
<https://www.sciencemeetsasturias.es/participantes/>

On March 28th and 29th IDEPA brought together about thirty experts in Covadonga to discuss and agree on measures to facilitate the transition to a circular economy. As Asturias is a region where a highly industrialized economic model coexists with a high-value natural environment, the challenge of the transition towards a circular economy of the process industry through the recovery of industrial and urban waste reducing the impact of the activity was addressed from a scientific perspective.

The final objective was to identify agreed proposals that could be transferred to regional innovation and environmental policies, and in particular to complete the drafting of the Regional Agenda for Sustainable Materials and evaluate the opportunity of creating a Circularity Hub in Asturias.

The working sessions were held over a day and a half and the 38 participants were carefully chosen based on their qualifications and balanced participation, coming from the regional administration, the local scientific sector, process industry tractors, and trade unions joined by national and international experts.

The challenge was dealt with in parallel groups, defining two sub-challenges:

- Technological Group - Technological opportunities for the use of industrial by-products and MSW (Municipal Solid Waste) by the process industry.
- Socioeconomic Group - Socioeconomic aspects to be considered from early stages of R & D to promote the use of by-products and waste from the industry

The working groups have determined that the Principality of Asturias has the right conditions to become a European reference in circular economy due to the potential of its industry, its technological and research capacities, and the singularities of the territory, more than 50% environmentally protected under different categories.

In this sense, the idea of turning Asturias into a Circular Paradise gained strength. To this end, it was proposed to identify the possible participants and to achieve a solid social consensus, transferring the initiative to the agreements of concertation. The governance model (hubs) will be conditioned by the profile of the Hub. The Circular Paradise is seen as a scenario in which the industry maintains its leadership through a

high commitment to the environment; it is feasible to identify the process industry as the beginning and end of the waste.

Concerning the search for technological solutions, the following actions were proposed:

1. Complete the Mapping of R&D Infrastructures/by-products/resources of integral valorisation to facilitate the valorisation of the existing technological offer.
2. Anticipate to the R&D phase the analysis of the economic viability of circular economy projects through a rapid proposal evaluation tool that combines life cycle analysis, LCA, best available technologies, BAT (Best Available Technique), and productivity and market criteria.
3. Facilitate the scalability of the proposed solutions through process simulation or investments in demonstrators.

On the other hand, the members of the socio-economic group have discussed the need to move towards a favourable legal framework that would allow the development of business projects focused on the valorisation of by-products and waste, where public-private collaboration would play an important role.

Among the ideas proposed aimed at environmental policy, it was proposed to develop a shortened protocol to process industrial R & D tests, a methodological guideline about the conditions to be satisfied for certain specified waste to cease to be waste and create a database of inputs and outputs of residues.

Besides, they have stressed the importance of involving society, which should be duly informed of the measures to be carried out, the business activity that waste can generate, and the benefits this can bring to Asturias, giving the society a protagonist role in the transition to a circular economy. In this regard, it was proposed to create the Asturias Circular Paradise Platform, the development of actions aimed at improving the social perception of residue valorisation, and the use of slogans aimed at highlighting the value of waste and its link to the territory: "Your waste generates wealth", "It's not waste but resources" and "Asturias Circular Paradise".

Finally, the conclusions point out the sustainable character of the circular economy and the impulse it can produce in territorial development and the fixation of population when taking advantage of the endogenous resources of the territory. It was suggested, for example, the implementation of a model for the use of biomass waste with criteria of proximity and local development in small populations (< 1000 inhabitants).

Socioeconomic Group			
1. LEGAL FRAMEWORK: REDUCE ADMINISTRATIVE BARRIERS AND SPEED UP PROCEDURES TO DEVELOP THE CIRCULAR ECONOMY			
Responsible: GOBIERNO DEL PRINCIPADO DE ASTURIAS		Participants: Public Administration PROCESS COMPANIES OF ASTURIAS	
<p>Description of the actions</p> <p>Best ideas</p> <ul style="list-style-type: none"> - Abbreviated protocol for processing industrial R+D+i tests - Circular table (authorities, producers, and managers) - Provide resources to the administration (human, technical and training) - Develop end-of-waste and by-product guidelines - Asturian region must have a more relevant role versus the regional Ministry - Development of a database with inputs and outputs (residue and feedstock) <ul style="list-style-type: none"> • Circularity Table <p>R & D Protocols</p>	<p>6 weeks</p> <p>Constitution of the circular table: Regional Ministry + process companies</p>	<p>6 months</p> <ul style="list-style-type: none"> - Shortened standard for industrial R+D+i testing - Greater weight of the Autonomous Communities before the Ministry with competence in the environment (previous procedure) 	<p>6 years</p> <p>GUIDELINES and LEGISLATION ADAPTED TO THE NEEDS OF THE SOCIETY/BUSINESS</p>
2. CIRCULAR DEVELOPMENT OF THE TERRITORY: DEVELOPMENT OF PRODUCTIVE/ECONOMIC ACTIVITIES / ESTABLISHMENT OF ACTIVE POPULATION IN THE TERRITORY			
Responsible: PRINCIPADO DE ASTURIAS		Participants: <ul style="list-style-type: none"> • Asturian Government • Companies • Owners and neighbours 	
<p>Description of the actions</p> <p>Best ideas</p> <ul style="list-style-type: none"> - Proximity-based waste management - Introduction of the territory's endogenous resources into the circular economy - New waste streams: compost + textile waste <ul style="list-style-type: none"> • Waste as feedstock • fractions and resources for development 	<p>6 weeks</p> <p>- Identification of waste/resources and territories</p>	<p>6 months</p> <ul style="list-style-type: none"> - Producer - consumer connection - Feasibility of using indigenous resources - Identification of new indigenous waste fractions 	<p>6 years</p> <p>Implementation of viable exploitation projects Implementation of Circular Economy companies</p>
3. SOCIETY AT THE CENTRE OF THE CIRCLE (Communication): Changing the perception of circular economy actions, improving communication and cooperation, and linking activities to society			



<p>Responsible:</p> <ul style="list-style-type: none"> • Asturias Government • Oviedo University • Companies • Society as a whole 		<p>Participants:</p> <p>The same ones included in the previous box</p>	
<p>Description of the actions</p> <p>Best ideas</p> <ul style="list-style-type: none"> - Perception analysis: surveys, focus, focus group - Offer resources: workshops, materials - Recognition actions, e.g., awards - Asturias Paraiso Circular Platform. Collect information, dissemination knowledge/actions, offer/demand participation - Elaboration of the Circular Economy Strategy. Budget/time commitments - Communication of the results of the "Innovation Camp" event and the actions derived from it 	<p>6 weeks</p> <ul style="list-style-type: none"> - Communicate Innovation Camp results - Establish a working group for the platform 	<p>6 months</p> <ul style="list-style-type: none"> - Perception analysis design - Media workshop - Workshop for university students - Design the platform specifications 	<p>6 years</p> <p>Circular Economy Strategy implemented and active</p> <p>To propose new lines of R&D&I in Circular Economy by the Univ. of Oviedo and IPOs, and technology centres</p>

Technological Group			
1. TECHNOLOGICAL DEVELOPMENT: ESTABLISHING A TECHNOLOGICAL ADVISORY GROUP WITH A TECHNICAL PROFILE			
Responsible: Public Administration (Development Agency, organizer)		Participants:	
		<ul style="list-style-type: none"> • Companies, • Technological Centres + University • Civil Society 	
<p>Description of the actions</p> <p>Best ideas</p> <ul style="list-style-type: none"> - Creation of a dynamic, stable, and sustained technological working group to generate ideas - Assessment of technological processes using environmental assessment tools (Life Cycle Analysis) - Selection of priority flows by environmental criteria - Inventory of residue supply - Inventory of technological capacities - Best available techniques, state of the art technology - Development of technology groups on specific themes - Micro-technology for self-consumption - Improving the scalability of research, Scaling-up programmes 	<p>6 weeks</p> <ul style="list-style-type: none"> • Definition, profiling, and composition of the technology group 	<p>6 months</p> <ul style="list-style-type: none"> - Inventory of residue supply - Inventory of technological capacities - Consolidation of the Group 	<p>6 years</p> <p>Actual scaling of at least one disruptive technology</p>
<ul style="list-style-type: none"> • Implement the technological working group of the Asturias circular 			

2. G1- RADIAL: ACCELERATING THE IMPLEMENTATION OF CIRCULAR ECONOMY PROJECTS

Responsible: Circularity Hub		Participants: <ul style="list-style-type: none"> • Companies, • Technological Centres + University • Public representatives 	
Description of the actions Best ideas <ul style="list-style-type: none"> • Development of an analysis tool for the economic evaluation of circular economy projects 	6 weeks <ul style="list-style-type: none"> - Activator of the idea - IDEPA - Executor of the tool- Administration actor of the Regional R&D 	6 months <ul style="list-style-type: none"> - Project Activator -IDEPA - Executor of the tool, user guide, training - Regional R+D stakeholder administration - Tool feed - RTO - Tool Users (Testers, Early-adapters)- Company 	6 years <ul style="list-style-type: none"> Acceleration of decision making in circular economy projects Increased number of successful projects Fewer failed projects
<ul style="list-style-type: none"> • Quick tool • It will enhance the use of databases • Increasing-bringing together business-knowledge 			

3. ASTURIAS "CIRCULAR PARADISE" (NO WASTE REGION): MAINTAINING INDUSTRIAL LEADERSHIP COMMITTED TO THE ENVIRONMENT

Responsible: The propeller (Public administration, society, academy, company)			
Description of the actions Best ideas <ul style="list-style-type: none"> • Sustainable Management of MSW • Circularity Hub • H4C 	6 weeks <ul style="list-style-type: none"> - List of participants in the Hub (IDEPA proposal) - Concertation agreement (transfers) 	6 months <ul style="list-style-type: none"> - Defining executive governance (hubs) - Mapping of infrastructure / by-products / resources (IDEPA) 	6 years <ul style="list-style-type: none"> More sustainable management of MSW (municipality solid waste) Road Map Increased business opportunities linked to the circular economy
<ul style="list-style-type: none"> - Technical management office (G1) - Scientific/technical incubator/accelerator (spin off- Start-up) 			