

An aerial photograph of a massive, green, leaf-like structure, possibly a canopy or a large-scale art installation. The structure is composed of a network of dark, branching veins that create a grid-like pattern across a vibrant green surface. Numerous people are seen walking along these veins, providing a sense of scale. The overall scene is bright and natural, with sunlight filtering through the leaves.

Annual Report 2021-2022

“Boosting Smart Industry”

Mi4
MetaIndustry4



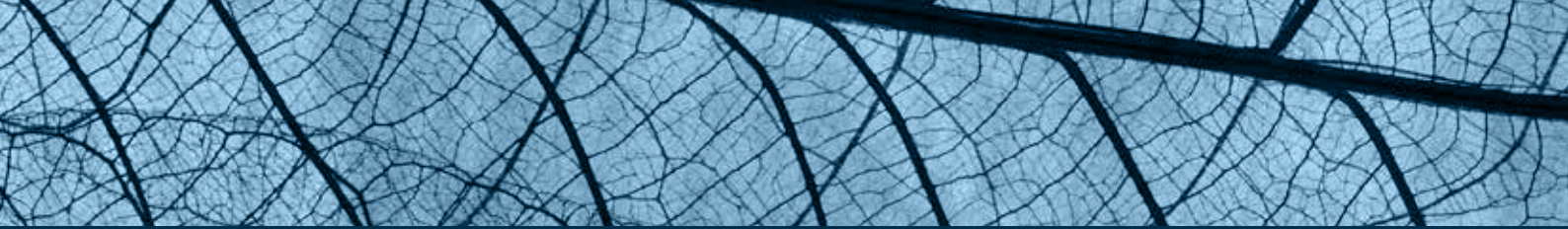
An aerial photograph of a large tree with a dense canopy of green leaves. The main veins of the leaves are dark brown and form a grid-like pattern. Several people are seen walking along these veins, appearing as small figures against the vast green background. A semi-transparent blue horizontal band is overlaid across the middle of the image, containing white text.

INDUSTRIA INDUSTRY
TECNOLOGÍA TECHNOLOGY
CONOCIMIENTO KNOWLEDGE





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PRESENTATION BY THE PRESIDENT



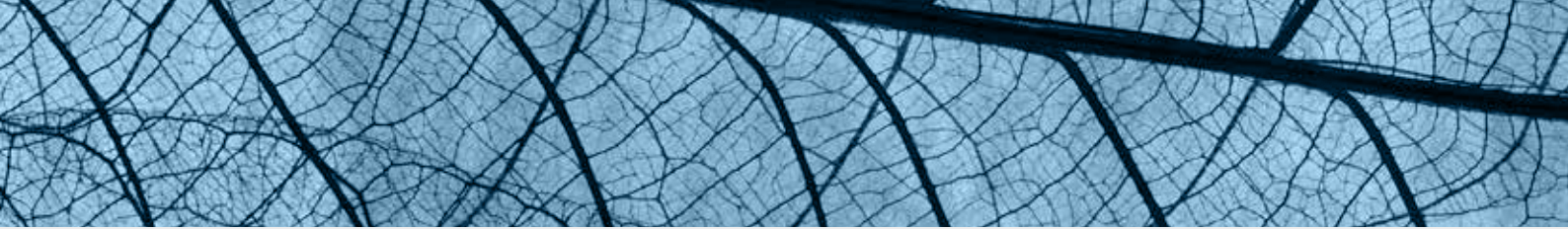
MetalIndustry4 have tried to convert the recent periods of uncertainty and uncertainty into windows of opportunity of opportunity.

Dear partner,

I would like to address to you for the first time as president of MI4 after accepting the tenure of managing the Federation of Metal of the Principality of Asturias. The annual report that I am presenting here relies largely on the excellent work led by my predecessor, Guillermo Ulacia, to whom we owe well-deserved recognition and gratitude for the work carried out over the years with **MI4** from its foundation to its full consolidation and positioning at national and international level. This motivates my first decision as president: to honor him with the honorary presidency of **MetalIndustry4**.

The last 12 months have been hectic. The pandemic situation is still threatening us along with the raw material crisis and the worrying changes in the energy and supply markets caused by the Russian invasion of Ukraine. These are periods of uncertainty and great concern that **MetalIndustry4** has tried to turn into spaces of opportunity.

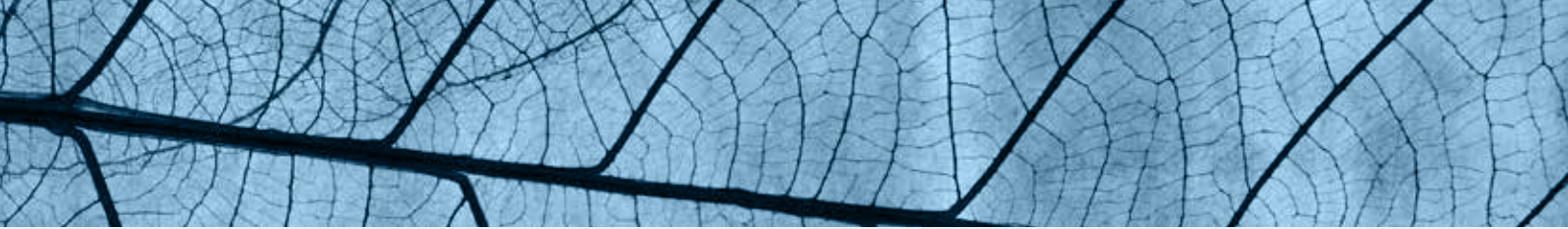
In the last year the Cluster has increased its associative mass by 12.7% and has consolidated human resources, expanding the team with a third professional dedicated to the management of innovation and digi-



We have increased our international presence, both in Europe and across the other side of the Atlantic, as a key innovator.

tization projects. During this inter-assembly period **MetalIndustry4** has launched three consortiums for the development of collaborative projects which have been financed by the Ministry of Industry. As a result, 740,000 euros of investment have been activated and we are the only Asturian organization that has accessed the financing lines for Innovative Business Groups.

At a European level we have just heard of a new approved project, Euroclusters Ingenious, which will be our goal in the next three years, and it is aimed to support the energy-intensive industry. This project joins a series of initiatives which have been already launched, such as ESECA, Mine.The.Gap and Cemivet. These projects are added to the increasingly extensive international collaboration network made up of nearly thirty organizations throughout Europe. Also on the other side of the Atlantic, the Cluster raises interest in its business model, which has been considered a case study by various business schools and institutions.



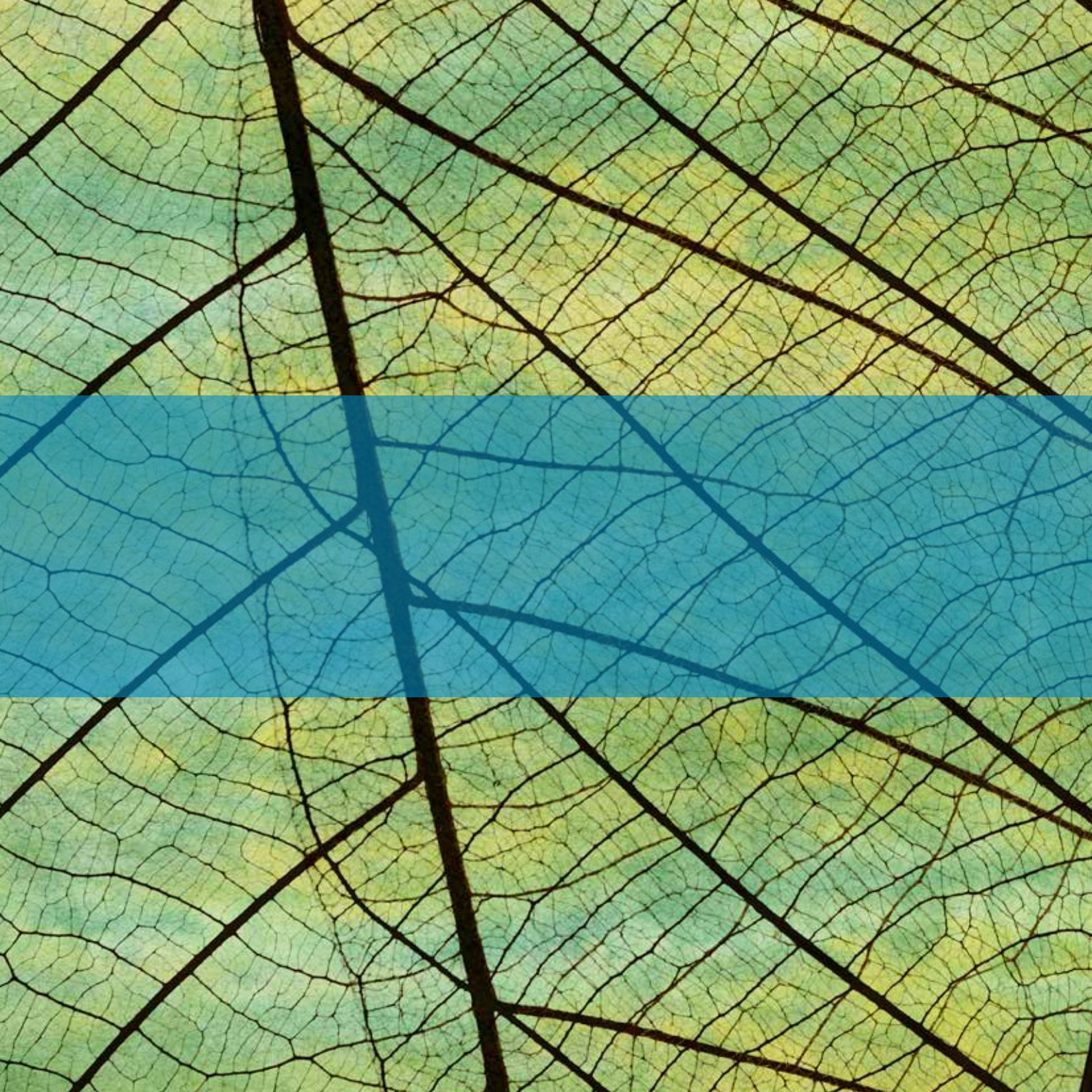
We have come a long way and achieved an early recognition that allows us to open more doors and attract new opportunities for the ecosystem of the metal industry in Asturias, but if we want to keep progressing we require the support of the institutions. A well-funded regional cluster policy is needed to encourage collaboration, dynamism, R&D, an international vision and the involvement of more and more companies and organizations. That is, a demanding standard that can assess our performance and the impact of our actions on the metal industry and the regional economy.

I believe that the culture of continuous improvement towards competitiveness and success is the path that we want to follow. I hope to carry on counting on your collaboration, support and participation so that we remain on this trail of growth and progress.

All the best,

Antonio Fernández-Escandón Ortiz
President of MetalIndustry4

We have reached an early recognition that allows us to open more doors and attract new opportunities for the metal industry in Asturias.



A close-up photograph of a green leaf with a prominent network of veins. A solid blue horizontal band is superimposed across the middle of the image, serving as a background for the text.

2

**METAINDUSTRY4
GOVERNANCE**



2 METAINDUSTRY4 GOVERNANCE

MetalIndustry4 is already a six-year-old Cluster which is consolidated and recognized at multiple levels. In these last twelve months, the Cluster has gone through a change of presidency of the organization along with **FEMETAL**. We said goodbye to Guillermo Ulacia as president and promoter of **MetalIndustry4** and welcomed Antonio Fernández-Escandón, who will take over for the next four years.

This change comes at a time of growth for the Cluster, which since its birth in 2016 has been increasing its number of associates to reach **71 current members, as well as it has gained recognition at regional, national and international level**. This support is sustained thanks to the actions carried out from **MI4**, always focused on progress and innovation of the **#MI4partners** and the position of Asturias beyond our borders.

MetalIndustry4 has gone on working as a multidisciplinary cluster which is aligned with the Smart Specialization Strategy of Asturias (RIS3), in which industry, technology and knowledge converge, and it has launched its **new Strategic Plan** in this period. Alongside with this, it has adjusted the mission and vision of the new reality of the Cluster focusing its objectives towards the future and it has based its pillars on **globalization, digitization and decarbonization**.

MISSION

Globalization, digitization and decarbonization

Provoke and promote the transformation of the Asturian metal industry with an eye on the horizon of 2030 through the development of a collaborative and combined work with the entire sectoral ecosystem aimed at facilitating the sector the best possible use of the opportunities derived from the three great challenges of the moment: globalization, digitization and decarbonization.

VISION

Competitiveness, cooperation and internationalization

Represent a modern industry with a prominent presence in the new value chains, based on innovative products with high added value developed by competitive, professional, internationalized, digitized and sustainable companies, capable of cooperating and working together through tractor projects with the support of a group of highly motivated and qualified professionals.

ORGANIC STRUCTURE

The organic structure of the Cluster has been preserved with the change of presidency and is composed of the General Assembly, the Board of Directors, the Presidency, Vice Presidency, Treasury and Management. The highest governing body of **MetalIndustry4** is the General Assembly, where all its associates are represented and therefore its decisions will bind the entire group. On the other hand, the body in charge of the responsibilities of direct management and management of **MetalIndustry4** is the Board of Directors.

The entity reports to the governing bodies and in order to manage the activity of the Cluster, the facilities and services, it has a multifunctional team whose main figure is the Management who is responsible for leading the entity, in accordance with the instructions issued by the Board of Directors.

MI4 focuses its objectives to address the challenges of globalization, digitization and decarbonization.

MEMBERS OF THE BOARD OF DIRECTORS

FEMETAL

Mr. Antonio Fernández-Escandón Ortiz
President

ISASTUR

Mr. Fernando Alonso Cuervo
Vicepresidente

FEMETAL

Mr. Arturo Del Valle Artime
Treasurer

ATOX

Mr. Fernando Sáez

CTIC TECHNOLOGY CENTER

Mr. Pablo Coca Valdés

GONVARRI

Mr. Luis Pérez Castaño

IDESA

Mr. Benjamín Baragaño Valdeolillos

IDONIAL TECHNOLOGY CENTER

Mr. Íñigo Felgueroso Fdez-San Julián

ITURCEMI

Mr. Manuel Ocáriz Alonso

SERESCO

Mr. Alejandro Blanco Urizar

TSK GRUPO

Mr. Arturo Betegón Biempica

Members

FEMETAL

Ms. María Pérez Medina
Manager and Secretary of the Board of Directors





3

MULTILEVEL GOVERNANCE



3 MULTILEVEL GOVERNANCE

In line with what has been developed so far, one of the main work lines of the Cluster is to consolidate its position in all areas of interest. As a result, its presence in the main business and institutional networks at national level is a reality and it is recognized as a dynamic agent in all its areas of influence.

An example of this is its membership in the **Network of Clusters of Asturias, the National Federation of Innovative Business Groups and Clusters**, and its position as a member of the 4.0 Industry Advisory Council of the Principality of Asturias.

Due to its international role, in recent years **MI4** has strengthened its presence outside the country by being present in forums, events and organizations where the Cluster shares objectives and a vision of growth without borders. **MI4** maintains its presence within the **European Cluster Collaboration Platform and its active participation in the European Lightweight Association**.

The positioning of the Cluster has grown and consolidated at national and international level.

3.1 INSTITUTIONAL PRESENCE REGIONAL

Asturias Cluster Network

The Asturias Cluster Network is the meeting point for the 9 existing Clusters in the Principality, among which is **MetalIndustry4**.



The development of this group arises in response to the need to generate a sector policy that allows the design of support instruments capable of responding to the specific needs of certain sectors.

Asturias Digital Innovation Hub

MetalIndustry4 is part of the **Asturias Digital Innovation Hub**. The **AsDIH** is the instrument for coordinating all the resources available in the region, to accelerate the digitalization process of Asturian industry.



The **AsDIH**, coordinated by **IDEPA**, is formed by the main scientific-technological competence centers of the region, in addition to the University, technological enablers, business associations, clusters, business R&D centers and the rest of the entities that make up the **IDEPA Group**.

Recently the **AsDIH**, with a consortium formed by 11 entities including **MI4**, has been recognized with the **European Digital Innovation Hub** seal and funding to develop its activities in the region. Only 12 hubs in Spain have received this recognition and **AsDIH** is one of them.

3.2 INSTITUTIONAL PRESENCE

NATIONAL AND INTERNATIONAL

FENAEIC

The **National Federation of Innovative Business Groups and Clusters** was established in Madrid in March 2009, and currently has around 45 members, spread throughout the country, including **MetalIndustry4**, which is also a **member of the Board of Directors of the Federation**.

FENAEIC is oriented towards the achievement of collaborative objectives between federations, clusters and their members, promoting the excellence of its member clusters and supporting the internationalization of their projects and initiatives and their financing, as well as the recognition of the clusters as innovation agents. .

Bronze Label

MetalIndustry4 is recognized, at European level, with the **Cluster Management Excellence Bronze Label**.

This seal is awarded by the **European Secretariat for Cluster Analysis (ESCA)**, under the approach of analysis and comparative evaluation with other organizations in the same technological field within the European sphere.





Register of Innovative Business Groups

MetalIndustry4 is one of the 94 entities registered with the Ministry of Economy, Industry and Competitiveness as AEI. This recognition is a requirement to access the national financial support programs, specific for Innovative Business Groups, which are aimed at promoting innovation strategies and business competitiveness. This condition provides added value to the members of the Cluster, who can benefit from the aid issued by the Ministry.

This recognition means:

- An **activation and linkage engine** between the different players in the industry.
- A **meeting point** between companies, clusters and other agents in order to exchange knowledge and obtain business opportunities.
- An **excellent tool** to access projects of common interest, both at national, European and international level.
- An **observatory** to identify market trends and needs.
- A broader **perspective** on the business, through contact with other companies with different visions and realities.
- **National and international visibility** acting as a joint positioning tool for companies and the sector.





European Lightweight Association

In line with the support for the Green Deal promoted by the European Commission, **MI4** is part of the **European Lightweight Association**, an association born in central Europe with associations and clusters from Germany, Spain, the Netherlands, Switzerland and Austria, whose main objective is to strengthen the competitive position of its members and aspire to create a common position in Lightweight technology.

The Association is committed to being a powerful base to make companies realize the benefits of reducing emissions for trade and climate protection.



European Cluster Collaboration Platform

MetalIndustry4 is registered and actively participates in the different initiatives organized by the **European Cluster Collaboration Platform, ECCP**.

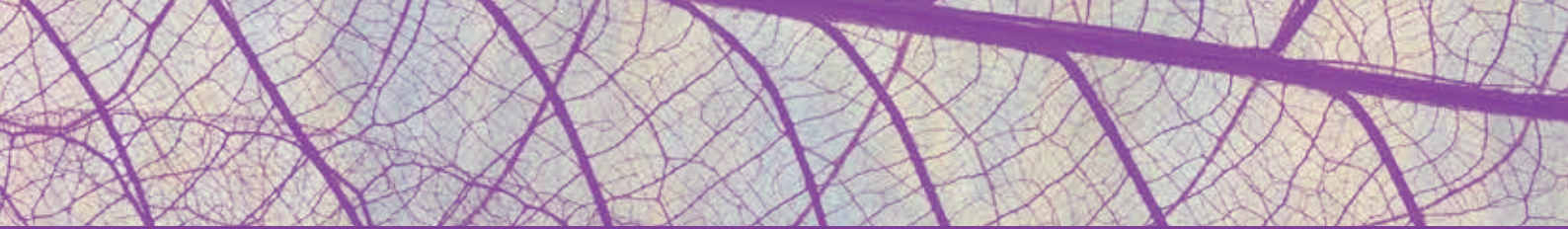
Promoted by the European Commission, the **ECCP** is the instrument to promote and support the activities organized by the **European Clusters**, in order to improve their performance and increase their competitiveness by stimulating transnational and international cooperation. The ECCP brings together nearly 1,200 cluster organizations from around the world and is the largest network of clusters worldwide..







PARTNERS AND AREA OF INFLUENCE



4 PARTNERS AND AREA OF INFLUENCE

Updated data on the sector indicates that the Asturian Metal Industry includes **766 companies**, excluding the self-employed, which have a turnover of more than **6,000 million euros** and employ more than **28,000 workers**. This represents **11% of the regional GDP**. On the other hand, in 2021, exports from the Metal Sector reached 3,635.69 million euros in 2021, which represents 70% of the total value of Asturian exports in this period.

The Cluster has grown exponentially in recent years, reaching **71 members** in this period. All of them carry out their work around activities related to advanced manufacturing and its entire value chain. Companies related to the manufacture, installation and repair of metal products, as their main auxiliary and complementary activities in the operational field, account for **56.3%** of the total number of members. Those focused on industrial digitization, **16.9%**. The rest of the partners, dedicated to activities related to advanced services, **15.5%**, technology and knowledge centers, **4.2%** and business support organizations, **7%** complement industrial companies to cover the entire value chain and position Asturias as a global brand.

Companies related to the advanced manufacturing and its value chain, accounted for 56.3% of the turnover in 2021 of their area of influence.



● **INDUSTRY**

1. ALEASTUR. ASTURIANA DE ALEACIONES
2. ASTURFEITO
3. ATOX SISTEMAS DE ALMACENAJE
4. BULLBOX. CONTENEDORES Y EMBALAJES NORMALIZADOS
5. CARROCEÍAS FERQUI
6. COUTO MAQUINARIA
7. CURVASTUR
8. DAORJE
9. DBV SERVICES
10. DELFIN TUBES
11. ELINOR
12. ENAGÁS RENOVABLE
13. ESTAMPACIONES Y DECOLETAJES RODISA
14. FÁBRICA DE PERSIANAS METÁLICAS CIERRES DEL HOGAR
15. FEDECOR
16. FUNDYSER. FUNDICIONES Y SERVICIOS
17. GONVARRI MS R&D
18. GONVARRI SOLAR STEEL
19. GRUPO NAVEC SERVICIOS INDUSTRIALES
20. HIERROS Y APLANACIONES. GONVARRI
21. IBERASTUR
22. IDESA. INGENIERÍA Y DISEÑO EUROPEO. GRUPO DANIEL ALONSO
23. INDASA. INDUSTRIAL DE ACABADOS
24. INGENIERÍA, PROYECTOS & CONSULTING LANZA
25. ISASTUR. INGENIERÍA Y SUMINISTROS

ASTURIAS

26. INSTALACIONES ELECTROASTUR
27. ITURCEMI
28. JUNTAS INDUSTRIALES Y NAVALES
29. MEFASA. MECANIZACIONES Y FABRICACIONES
30. METÁLICAS SOMONTE
31. OXIPLANT
32. SAMOA INDUSTRIAL
33. SEM. SISTEMAS ESPECIALES DE METALIZACIÓN
34. TALLERES ZITRÓN
35. TEKOX
36. TSK ELECTRÓNICA Y ELECTRICIDAD
47. WINDAR RENOVABLES

● **TECHNOLOGY**

1. BEZZIER
2. INCOSYSTEMS
3. INGENIACITY
3. INTERMARK
4. IZERTIS
5. KNOW-HOW INNOVATIVE SOLUTIONS
6. PIXELSHUB
7. R CABLE Y TELECABLE TELECOMUNICACIONES
8. SERESCO
9. SINFIN TURBINES
10. TÁCTICA TIC
11. TALENTO TRANSFORMACIÓN DIGITAL
12. TRIDITIVE

● **KNOWLEDGE AND INNOVATION**

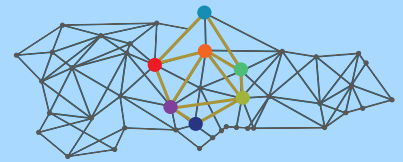
1. CTIC CENTRO TECNOLÓGICO
2. ESCUELA POLITÉCNICA DE INGENIERÍA DE GIJÓN. UNIVERSIDAD DE OVIEDO
3. IDONIAL CENTRO TECNOLÓGICO

● **ADVANCED SERVICES**

1. APPLUS NORCONTROL
2. BIOSFERA CONSULTORÍA AMBIENTAL
3. CASINTRA
4. COGITRANS PLATAFORMA LOGÍSTICA
5. CORDES. CORPORATE DEVELOPMENT SERVICES
6. DOGRAM
7. ENCAJA EMBALAJES DE MADERA
8. HUNOSA EMPRESAS
8. GRÚAS ROXU
9. PÉREZ Y CIA
10. PISA PDI
11. TÁCTICA DESARROLLO INDUSTRIAL
11. TOTAL ENERGIES

● **BUSINESS SUPPORT ORGANIZATIONS**

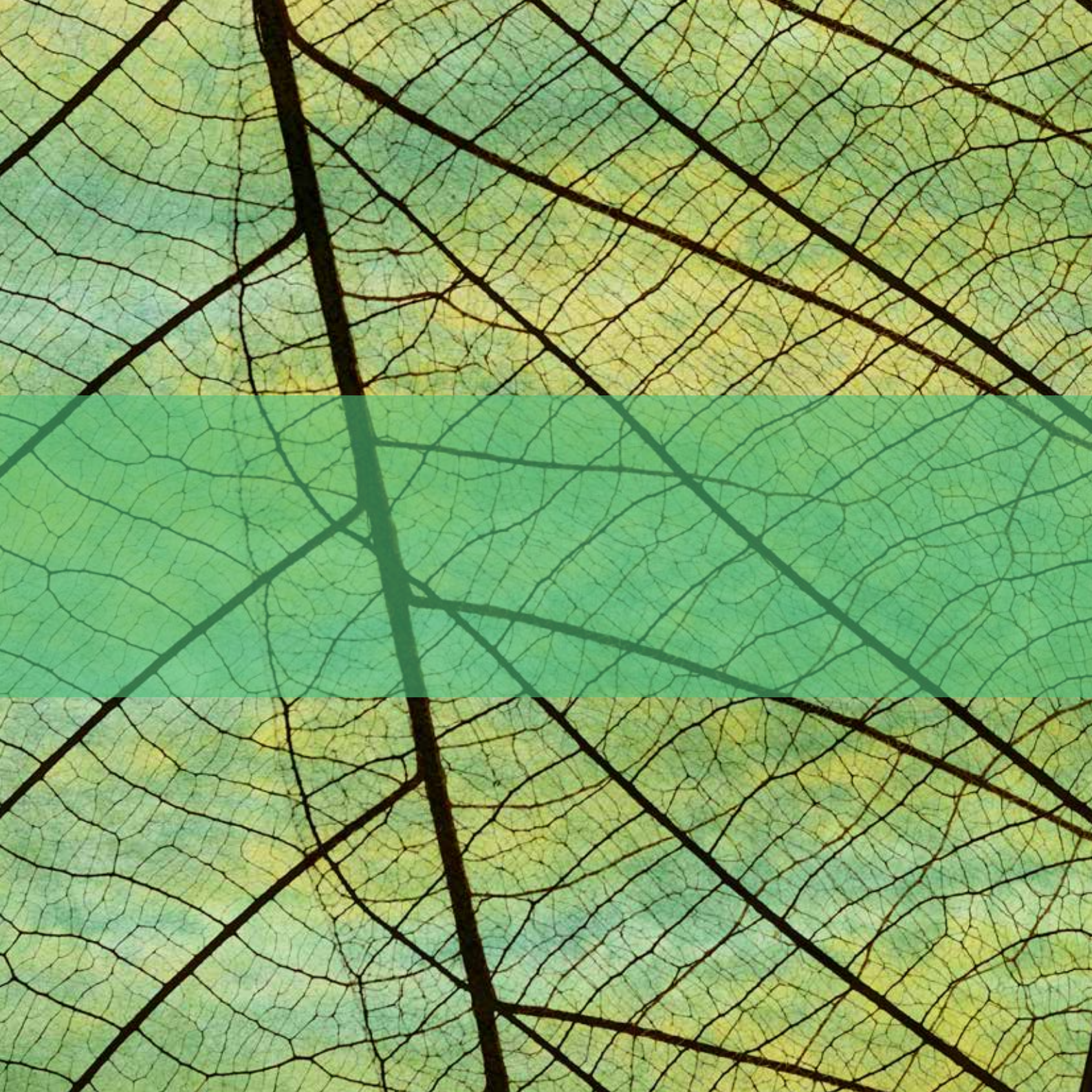
1. ASTUREX
2. AUTORIDAD PORTUARIA DE AVILÉS
3. AUTORIDAD PORTUARIA DE GIJÓN
4. CLÚSTER TIC DE ASTURIAS
5. FEMETAL



Mi4 | Area of Influence



Mi4





MANAGEMENT REPORT



5 MANAGEMENT REPORT

5.1 MANAGEMENT AND ORGANIZATION

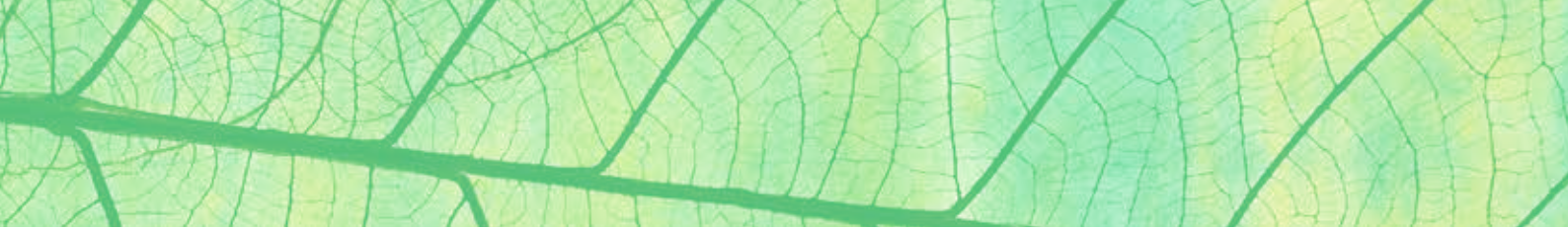
The changes in the environment and the successive crisis of recent months have affected the Cluster and the companies in the region, requiring faster changes and the necessary transformations to continue advancing in the face of any adversity. The Cluster, in this period, has demonstrated its strong commitment to three fundamental mainstays: decarbonization, globalization and digitization, focusing its activities around these elements.

To this end, it has designed and executed actions that pursue the following objectives:

- **Promote collaboration between the member companies of the Cluster** by facilitating the development of collaborative projects of a strategic nature through workshops to stimulate innovation.
- **Consolidate MetalIndustry4 as a meeting point between the demand and supply of solutions.** It is recognized as an agent that facilitates the transformation of advanced industry in Asturias, promoting the presence of the Cluster in the main institutions and networks of interest.



- **Promote the relationship of inter and intra cluster** companies by generating networking actions with clusters in the region and other communities with the aim of creating contacts and stimulating projects between companies.
- **Consolidate the presence of the Cluster and its companies at an international level**, attending international fairs and events and establishing strategic contacts with the main target markets.
- **Analyze the degree of integration of the circular economy in the Asturian metal industry** based on the group of members of the Cluster and defining an action plan to promote circularity in the business models of these companies, in addition to designing new innovative projects in this area.
- **Update the key communication tools with the partners and all the agents of interest that operate around MI4**, in order to have new members and create new collaborative relationships with them. To this end, specific actions have been taken such as:
 - The creation of a fully customized **project management tool** for the needs and circumstances of the Cluster. The main objective of this tool is to facilitate the control and monitoring of the increasingly numerous projects developed by the organization. The tool, which is quite simple and practical, is endowed with meaning and value thanks to the internal team of the Cluster who is in charge of completing all the corresponding information.
 - **Update of the current functionalities of the CRM tool** has been carried out with the aim of improving the existing ones and including those that develop the organizational and administrative management of the Cluster's activity and its relationship with the associates.



5.2 SOCIALIZATION

The presence in the main institutions and networks of the sphere of influence of **MetalIndustry4** is the key to its recognition and positioning at all levels.

During this period, the presence in forums and events has been reinforced, especially at an international level, without neglecting collaboration with agents in the region. These events have been the following:

- **Attendance at the Hyvolution fair**, Paris. October 2021.
- **Clusters Meet Regions, within the framework of Transfer Forum**, Málaga. February 2022.
- **Energy Clusters Summit**, Bilbao. April 2022.

In addition, **MetalIndustry4** has organized different events in which the member companies have been able to participate in benchmark meetings in the region which promote the growth of Asturias at a collective level.

- **Matchmaking event. Building bridges: business and innovation opportunities between France and Spain**, with the French competitiveness hub Materalialia. June 2021.
- **III Meeting of MI4 CEOs**. November 2021.
- **European Industry Week 2022**. February 2022.
- **IV Meeting of MI4 CEOs**. March 2022.
- **Technological Breakfast at TEC I4.0 Space**. October 2021.

MetalIndustry4 has been invited to share its good practices and the business model developed by the Cluster on multiple occasions and has been an international example for other organizations.

- Meeting with the national program of Clusters of Costa Rica and Diploma of Clusters of Mexico. November 2021.
- Presentation with the people responsible for the national program of Clusters of Costa Rica. December 2021.
- Meeting for the Chamber of Commerce of Manizales by Caldas. April 2022.
- Presentation for the degree in Commerce and Marketing at the University of Oviedo. April 2022.
- Participation in the floating off-shore energy working group with AWB. May 2022.

Following the recommended measures for this type of event, some of them have been held exclusively online, through video platforms, and when sanitary conditions have been favorable, those events have been held in person and in a hybrid way.

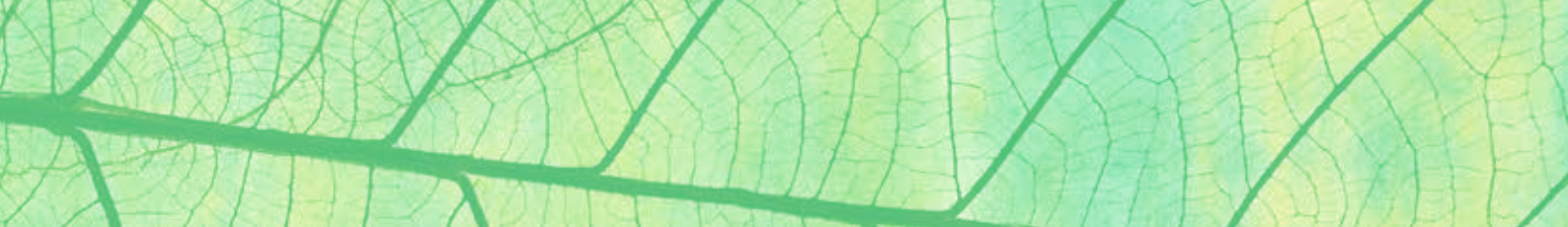
Attendance at international fair: HyVolution 2021



Due to the fact that one of the objectives of **MetalIndustry4** during this period is to position the Cluster and its members in the international sphere, all the partners of the Cluster were asked about the main sectors and markets they would like to address to.

From this consultation and in collaboration with the **IDEPA** and **ASTUREX** organizations, there was a visit to the **HyVolution Fair**, an annual event that brought together more than 220 exhibitors linked to **green hydrogen** in the fields of production, mobility and industry in Paris.

During the two days of the fair, the Cluster team and a delegation of eight Asturian companies participated in forums and webinars as well as they were able to contact international companies in the large exhibition space provided by the fair.



Clusters Meet Regions, within the Transifere Forum

In February, **MetalIndustry4** participated in the first **European Clusters Meet Regions** meeting held within the framework of the **Transfer Forum** in Malaga.

This forum was included in the **main R&D meeting in southern Europe**, in which for two days the aim was to share scientific and technological knowledge, promote innovation and connect science and business.

The event featured a "cluster elevator pitch" as an open space for the exchange of ideas and projects between organizations. **MI4** participated in this activity presenting the **ESECA project** to the more than 100 registered attendees and we opened the door to possible collaborations with other European clusters, organizations and companies.



Energy Clusters Summit

MetalIndustry4 attended the **meeting Energy Clusters Summit** which took place in Bilbao, within the **Fair Wind Europ 2022**. In this event the Cluster had the opportunity to present the activities in which it is immersed, highlighting the high level of specialization and capabilities of the Asturian industry and the strong commitment of **MetalIndustry4** to support **innovation in the industrial sector** at all levels.

These meetings allow the Cluster to maintain contact with organizations and other international entities that are always looking for new lines to create innovative projects.





European Industry Week in Asturias



After the success of the first edition of the **European Industry Week** held in Asturias, **MetalIndustry4** collaborated with **Innovasturias** for the second time to hold this event in the period covered by this report.

From February 21 to 25, 2022, this initiative tackled the most current challenges facing the industry on the continent, such as innovation in the sector, generational change, cybersecurity or industrial entrepreneurship. All this matters were explained by experts in specialized presentations for each of the topics:

- **Public-private alliances:** access to the internationalization of innovation.
- The next challenges of **innovation in industry**.
- How to train young leaders to prepare the **next industrial generation**.
- **Innovation, digital law and cybersecurity:** three complementary points for a successful professional projection.
- Strategies and good practices to promote **entrepreneurship**.

Building bridges: business and innovation opportunities between France and Spain

MetalIndustry4 held his first international matchmaking meeting with the French competition center **Materialia**.

This event, which was held online, aimed to strengthen ties between the partners of both organizations to identify opportunities for collaboration in innovation and business development in the international arena.

More than twenty companies made a presentation about their activity in order to publicize their potential, their teams and joint business possibilities.

After the first meeting, **MetalIndustry4** opened a collaboration path for companies and was the link to the **Materialia** business ecosystem.



Meetings of CEO's MI4

Launched in 2020, the **MI4 CEO Meetings** initiative has established itself over the past year as a meeting point for the main representatives of **MetalIndustry4** partner companies and organizations. It is a meeting place to address from a strategic and global vision the main challenges, initiatives and uncertainties to which the current context leads each of our **#MI4partners**.

In recent months, two of these meetings have been held to address issues of great interest to member companies.

The III CEO Meeting was the first to be held in a face-to-face format.

Mi4
MetalIndustry4



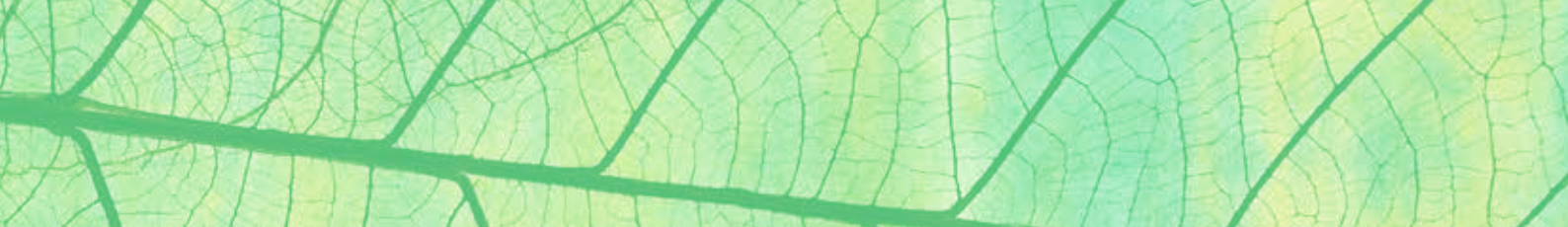
More than twenty representatives of **MetalIndustry4** member companies came to the NH Hotel in Gijón to participate in a working breakfast, with a **presentation by Willem Admiraal, Chief Procurement Officer** of the multinational electricity company **Arteche**.

The main theme of the day was the changes that have been taking place in global supply chains and how these have affected the regional industry.

The presentation was followed by a discussion and debate, in which attendees had the opportunity to express their ideas and concerns.



The next meeting took place at the Cluster's HQ and was held in a hybrid format to facilitate the attendance of different speakers. On this occasion, the situation of raw material shortage, the energy crisis and the the energy crisis and the transport strike, all in the context of the conflict in Ukraine. The event was attended by experts in different areas, such as **Ramón López, president-DG of the ASE group, Santiago Alonso of the ASE group, Santiago Alonso, corporate director at CTL Pack and Ángel Gil Gallego, manager of the Aragón Logistics Cluster (ALIA) and vice-president of the Spanish Logistics Center (Centro Español de Logística de Aragón).**



Technological Breakfast at TEC I4.0 Space


The Cluster has participated in the organization of a cycle of conferences entitled "**Technological Breakfasts**", in collaboration with IDEPA.

The objective of this initiative is to learn about the existing technological solutions for digital transformation and cases of implementation in Asturian companies, so experts in the field and good practices were present there.

José Ramón Natal, **MI4** Cluster Manager, participated as a speaker in the conference entitled "**Human resource skills for 4.0 industry**", where he presented the context of the new digital skills in the industrial sector.



MetalIndustry4 is always looking for participation in events and activities that promote the growth of Asturias at a collective level.



The working commissions have continued to be a space for strategic reflection for the identification and development of projects.

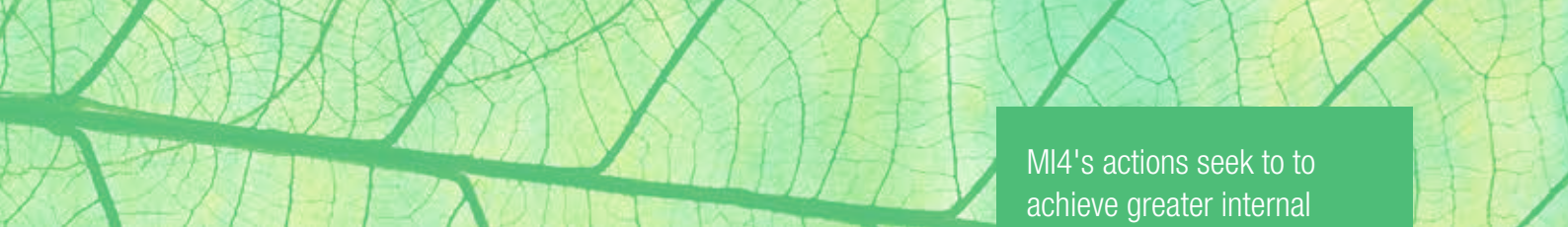
5.3 WORK COMMISSIONS

During these months **MetalIndustry4** has started working on the development of the new Strategic Axes, different networking and benchmarking activities along with its partners.

The Cluster has continued to adapt all its initiatives to the external situation that has caused the health crisis due to COVID-19. In this way, meetings have been held and activities have been carried out with its partners both online and in a hybrid way, or face-to-face when the situation was favorable. All these actions have achieved greater internal cohesion among the partners, generating as a result **collaborative projects** and joint actions with a **greater degree of knowledge** and trust between them.

The Axes contemplated in the new Strategic Plan which are adapted to the current reality of all the associates are:

- **Integration in global value and supply chains**, whose objective is to improve the position of the sector in its main value chains, and to introduce the sector to new chains.
- **Innovation and R&D**, in which work will be done to learn about and disseminate the "state of the art" of innovations with application in the sector, as well as to promote collaborative projects between associates.
- **Digital transformation and 4.0 Industry** to improve the level of incorporation of new digital technologies in the sector and develop digital solutions that provide added value to customers of metal companies.
- **Circular economy and sustainability**. This new axis focuses on promoting the circular economy and sustainability of the sector.
- **Talent and organizational transformation** will continue to work on the line of improving the training of present and future professionals, as well as promoting and facilitating the change of organizational culture in companies in the sector.



MI4's actions seek to achieve greater internal cohesion among the partners, resulting in joint actions.

All of them share some common objectives which are:

- **Update the analysis** on the different strategic areas in which the Cluster is constantly aligned.
- Exercise a **leadership** role on the projects framed in their area of interest and perform functions of management, coordination and monitoring of the proposals and actions promoted by each of the Commissions.
- To be a space for **strategic reflection** for the identification, prioritization and selection of recommendations for action in each area.

The work structure has continued in the form of Commissions, as a way of facilitating the organization of activities and the exchange of information. These commissions have maintained their turn with the coordination structure, keeping shared leadership between the coordinator, acting as the main organizer, and the figure of vice-coordinator. These two roles share management with the Cluster team, orienting their collaboration towards promoting the work of the Commission, in addition to assuming a role of greater public representation of MetalIndustry4 in forums and meetings.

The panel of coordinators of each of the commissions that are active is currently comprised of the following parts:

Integration Commission in global value and supply chains.

Manuel Ocariz from Iturcemi.

Commission of Innovation and R&D, Digital Transformation and 4.0 Industry.

Luis Pérez from Hiasa-Gonvarri and Diana Álvarez from Mefasa.

Talent Commission and organizational transformation.

Alejandro Blanco from Seresco and María Rivas from Isastur.



Workshops, webinars, presentations of international projects... have been the actions carried out by each Commission.

In this period a total of nine Commission meetings have been held with a total of 108 attendees.

Innovation and R&D and digital Transformation and 4.0 Industry Commission. 22/09/2021.

Talent Commission and organizational Transformation. 21/10/2021.


Innovation and R&D and digital Transformation and 4.0 Industry Commission. 22/12/2021.

Commission for Integration in global value and supply chains. 27/01/2022.

Innovation and R&D and digital Transformation and 4.0 Industry Commission. 08/02/2022.

Commission for Integration in global value and supply chains. 02/03/2022.

The activities carried out to achieve the goals of each of the Commissions have ranged from informative workshops and webinars to the presentation of collaborative projects, both nationally and internationally, always following the objectives defined by the axes: **improving positioning competitiveness** of companies and their **integration into global value chains**, the commitment to **collaborative innovation** and the incorporation of 4.0 Industry and support for the **development of talent**.



Facilitate a greater and better integration of the Cluster's member companies in the different Global Value Chains in which they are involved.

5.3.1 COMMISSION FOR INTEGRATION IN GLOBAL VALUE AND SUPPLY CHAINS

The work line established for this commission is ongoing and its main objective is to facilitate greater and better integration of the member companies of the Cluster in the different Global Value Chains in which they are involved.

The coordinator of the commission, Manuel Ocariz from Iturcemi is, together with the Cluster team, in charge of carrying out all those actions that foster an approach to market trends and opportunities, as well as activities that promote a joint participation of the partners in the most advanced links so that they improve the competitive position of the Asturian metal sector in the markets of interest.

During this last year, this Commission has carried out a total of 12 activities, including three Commission meetings, the inaugural meeting of the Logistics Working Group, and several Webinars, meetings and workshops framed within the Commission.

During this period a total of 12 activities have been carried out:

- Two Commission meetings.
- Five meetings of the Working Group for the development of Green Hydrogen.
- An international matchmaking event with the French Materialia Cluster: "Building bridges. Business and innovation opportunities between France and Spain".
- ESECA project presentation event.
- Two meetings for the development of projects.
- Attendance at the Hyvolution 2021 fair.



A total of 172 people participated in those activities.

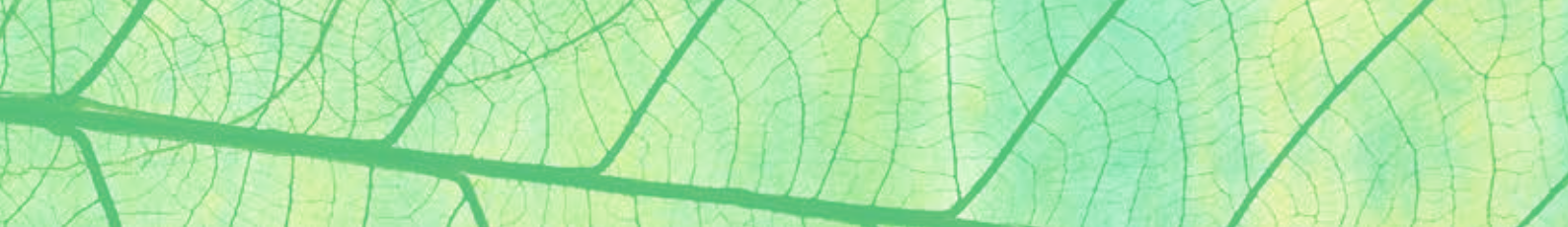
As previously observed, this Commission has been very involved throughout the period in the implementation of the Value Chain of engineering, manufacturing, management and development of projects associated with Green Hydrogen. In this way, with the aim that the Cluster and its companies are aligned with the new trends and European projects, **MetalIndustry4**, in collaboration with **Asturex**, launched this new project in which has developed this value chain, portraying the capacities of the companies in the Cluster to attract new business opportunities.

Green Hydrogen Monographic Group

During the period associated with this project, the Cluster has worked on the development of the **Value Chain of engineering, manufacturing, management and development of projects associated with Green Hydrogen, illustrating the capacities of the Cluster companies to attract new business opportunities.**

The European Commission has launched various lines to promote the development and recovery of European industry, with special emphasis on those that promote industrial ecosystems that include renewable energies and hydrogen as a green fuel in particular.

After carrying out this analysis, the Cluster set up a specific working group in which good practices, driving projects and pioneering companies in this field are attracted. Throughout the period **five meetings** have been held for this group with a total of **106 attendees**. The same structure has been followed in them: the exhibition of a guest company that has shared its good practices with the group. Leading companies in the sector such as **CELSA Group, Enagás, EDP, Hiperbaric or Iberdrola** have been some of the invited companies, accompanied by the active participation of the rest of the Cluster partners.



Update of the interactive platform MI4 Global Solutions

During the period covered by this report, the **MI4 Global Solutions** interactive platform was updated, that is, the website designed by the Cluster that serves as a regional presentation of the capacity of Asturian companies in the value chains of **Petrochemicals, Renewable Energies, Electricity Generation, Iron and Steel** and, as the latest addition, **Green Hydrogen**.

This website, which is active since 2018, contains information in English on all the companies that are part of these value chains, with their references, capacities and updated expertise. **MI4 Global Solutions** is a letter of introduction to the Value Chains as a whole that **MetalIndustry4** enhances for all the participating companies.



MI4 Global Solutions is the presentation of MetalIndustry4's presence and power in the main value chains.

In addition, continuing with its internationalization strategy, and following the guidelines that come from the European Commission, the Cluster has presented other projects that are oriented towards business development opportunities in renewable energies. This project is the following.

ESECA project. European Sustainable Energy Cluster partnership for Africa



In order to consolidate the position of Asturian companies in foreign markets, **MetalIndustry4** is part of the **ESECA project: European Sustainable Energy Cluster partnership for Africa**. The main objective of this project, in which MI4 participates within a consortium of four other European cluster organizations, is to intensify network collaboration between European SMEs in the renewable energy and electricity generation, distribution and transmission sectors. The aim is to develop a joint internationalization strategy plan with common objectives towards the markets of sub-Saharan Africa, specifically in Senegal, Ghana, Tanzania, Rwanda, and Kenya, and an implementation of a roadmap that facilitates the internationalization of these SMEs.



MetalIndustry4's role in the project focuses on designing the value chain in this sector that can be generated around the consortium. For this reason, work is being done to identify synergies between the partners in order to develop the value chain. In addition, it will be responsible for building collaboration opportunities between members.



The entire consortium met in Bilbao to launch the project during this period. During the meeting, a general presentation of the project was carried out through an online workshop in which companies from all the partners were able to participate and learn more about ESECA. Moreover, as an added value to the participating companies, the support programs that come from the European Union in terms of renewable energies in sub-Saharan Africa were presented, which will externally complement the project activities.



PARTNERS

Facilitate better and greater integration of technological advances and innovation in member companies, improving the knowledge of technological trends.

5.3.2 INNOVATION AND R&D AND DIGITAL TRANSFORMATION AND INDUSTRY 4.0 COMMISSION

This Commission has continued with its main objective, which pursues the enablement by the Cluster of a better and greater integration of technological advances and innovation in member companies, thus improving the degree of knowledge about constantly changing technology trends.

Within the framework of this commission, a total of **30 activities** have been carried out:

- Two Commission meetings
- Seven follow-up meetings for the Misiones H2 project
- A work dynamic for the Misiones H2 project
- 19 meetings for the preparation and monitoring of collaborative projects (aimed at the AEIs national call).
- InfoDay online conference MINE.THE.GAP project.

A total of **212 people participated** in the activities aforementioned.

Luis Pérez, from Hiasa-Gonvarri, has been the coordinator of the Commission, making a team with Diana Álvarez from Mefasa , as vice-coordinator.

Along with the main objective of this work commission, the main role of the Cluster has been to promote **collaborative innovation projects** that respond to the real and current needs of companies, incorporating new 4.0 technologies. These projects have been built on the basis of a national call for proposals for the **Association of Innovative Companies**, and for this, **MetalIndustry4** plays a fundamental role, since it constitutes the ideal space for sharing ideas and problems, offering members all the tools to be able to generate collaborative solutions that have a real positive effect, both in their companies and in the industrial panorama at a national level.

National projects. Group of Innovative Companies



The project **SMART CRANE**'s objective is the design and development of a new comprehensive artificial vision solution, capable of providing intelligence and predictive capacity to overhead cranes used in factories and industrial buildings, with a view to optimizing productivity, as well as avoiding human and material accidents. **SMART CRANE** aims to address the challenge of developing a new technology capable of minimizing accidents caused by moving loads on overhead cranes.

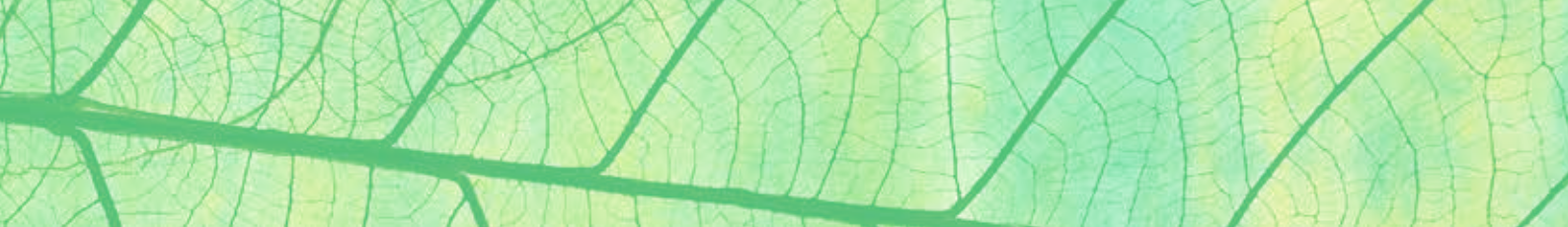
The main objectives are:

- A substantial improvement of smart security measures and tools for the prevention of accidents involving people, equipment and materials in the industrial environment.
- A minimization of human errors related to the handling of this type of machinery.
- The possibility of modernizing and adapting the current fleet of bridge cranes in accordance with the criteria or parameters of 4.0 Industry.

The project has a budget of €258,584.68 and the collaboration of two clusters: **MetalIndustry4** and **AFM**, which will carry out the important exercise of transferring the results obtained around the metal sectors and the machine-tool with a national reach.

The consortium is made up of **AFM, Delfin Tubes, Táctica Tic, Elinor, GH Cranes & Components y MetalIndustry4**, leader of the consortium.

PARTNERS



The project **DIGITAL POKA YOKE** with a budget of €238,218.00 is aimed at designing and developing an intelligent solution for detecting faults in serial production processes based on artificial vision and machine learning, capable of visualizing all the parts produced and identifying and classifying defects in real time. The **POKA-YOKE** system designed after training uses real defective images and correctly manufactured parts and will be tested on real production lines to proceed with its definitive validation.

The technology that is intended to be designed and developed must be able to learn to recognize defects or failures. So to speak, it will be necessary to develop an artificial intelligence based on neural networks which can be trained positively and negatively in such a way that data recognition models can be evaluated and validated.

MetalIndustry4 is committed to inter cluster projects, in this case with the collaboration of **Clúster de Bienes de Capital de Castilla y León**, **CBECyL** to promote the transfer of the results obtained with the development of the project and its implementation.

El proyecto está formado por **CBECyL**, **Intermark IT**, **Tekox**, **Juntas Industriales y Navales**, **Nomad Technologies** y **MetalIndustry4**.



PARTNERS



Horizon 2020 INNOSUP. Mine.The.Gap



This project has received funding from the European Union's EU Framework Programme for Research and Innovation Horizon 2020 under Grant Agreement No 873149.

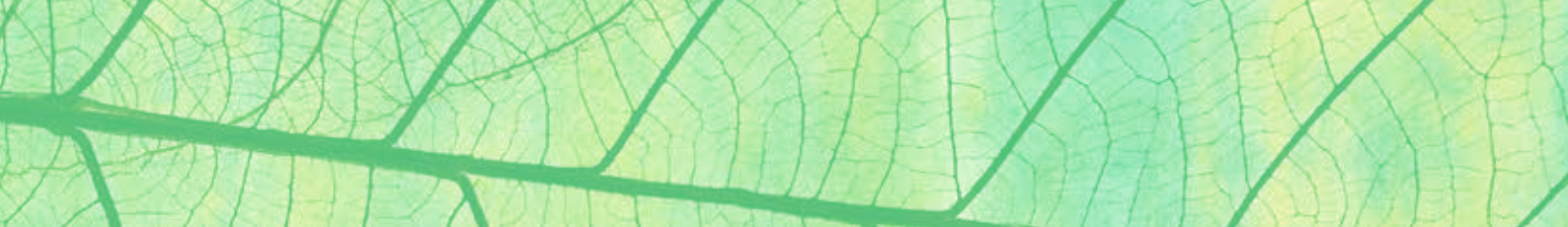
MetalIndustry4, together with the 11 European organizations that make up the consortium, have continued with the development of the Mine.The.Gap project, the first Horizon project 2020 in which the Cluster participates. Its objective is developing a network and a support platform for SMEs in raw materials and mining sectors to improve their productivity, competitiveness and capacity for innovation, promoting the introduction of new (disruptive) technologies and promoting access to new products and services to the market.

The project, with a duration of 36 months, has a budget of nearly 5 million euros, of which 75% will be dedicated to offering cascading financing for the development of technological modernization projects in companies directly or indirectly linked to the Mining value chain. The first call concluded with 14 approved innovative projects involving 31 SMEs throughout Europe. **MetalIndustry4** carried out the mentoring of one of the approved projects as support for the companies involved in the entire development of the project. The Cluster team had the opportunity to visit the facilities of the company Canteras Industriales, S.L., coordinator of the project financed by **Mine.The.Gap**.

During this period the consortium has met in Brussels for the first time with the aim of analyzing the progress and objectives achieved and working together on future project actions.



PARTNERS



Roadmap for the deployment of the Hydrogen – H2 industry

MetalIndustry4 presented the project “Roadmap for the deployment of the Hydrogen – H2 industry”, to the program Scientific Missions of Asturias carried out by the Ministry of Science Innovation and the University of the Principality.

The project pursues a series of objectives which are related to position Asturias as a consolidated regional structure based on its research and industrial fabric, being a benchmark in the field of renewable hydrogen. This is achieved by enabling and reinforcing the Asturian industrial capacity, so that it can access as a competitive solution at a technological and industrial level to a new and potential market niche such as the production, storage and use of Green Hydrogen.

MetalIndustry4 has been the leader of the work package in charge of establishing the roadmap, in which specific actions have been defined for each strategic axis and a portfolio of R&D&i projects has been established, which will position the industry and centers in the region as benchmarks in the sector.

The Cluster participates in this project together with another seven **Idonial Foundation, EDP, Duro Felguera, Imasa, Incar, University of Oviedo and Hunosa Group** as project leader. In addition, the project has seven collaborating members: **Faen, TSK, Química del Nalón, Hidritec, Windar, Idesa and Nortegas**.





5.3.3 TALENT COMMISSION AND ORGANIZATIONAL TRANSFORMATION



Continuing with the main objective of this commission, **MetalIndustry4** seeks the improvement of training and management of the present and future human capital of its partners. It has worked to improve the degree of knowledge about sector trends by promoting their training offer to the changing activity of the sector. In this way, benchmarking and the exchange of experiences between the **#MI4partners** can be carried out.

This Commission is led by the coordinator Alejandro Blanco from Seresco, who is accompanied as vice-coordinator by María Rivas from Isastur. In the last twelve months, the Commission has met once in a committee meeting.

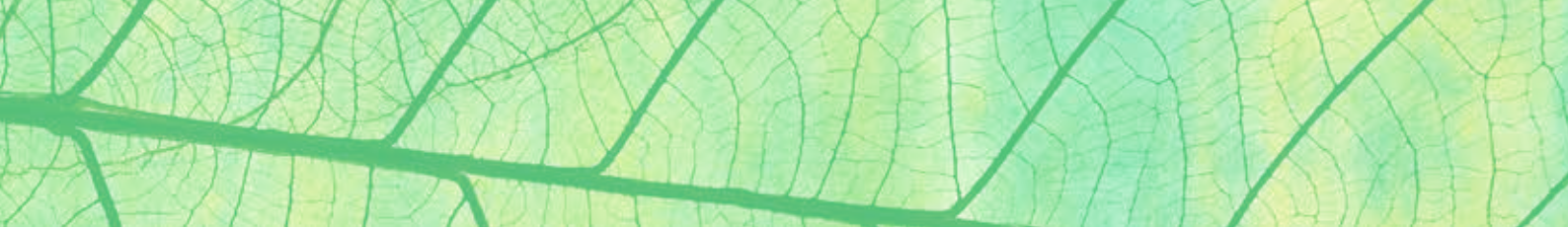
For the development of this Commission, the Cluster participates in European projects that work on the development of new vocational training curricula in the metal sector to align them with the new approaches that come from Europe, with sustainability and circular economy as essential elements.

Erasmus +. Circular Economy in Metal Industries VET. CEMIVET

The **CEMIVET European project** aims to support the SMEs of the Metal Clusters and their staff to understand the transformations underway (for example, the climate crisis), recognize their impacts and undertake the appropriate adaptation measures. They are aimed at presenting the possibilities of the Circular Economy into the metalworking and manufacturing sector.

Together with six European partners, **MetalIndustry4** is working on the analysis phase in which the existing skills in metalworking and manufacturing, their processes and their current skills will be determined. From this analysis, the new key competences to be

PARTNERS



taught in vocational training centers throughout Europe will be defined, along with suitable methods with adaptable and compelling concepts that create real long-term value for metal companies.

Some of the results of the project are already being shared with agents of interest at international level and they are used for specific analyzes of each country, such as the case of Ukraine and its publication in the scientific journal "Educational analytics of Ukraine".

During the period covered by this report, two Transnational Meetings have been held within the framework of the project, in which MetalIndustry4 and the entire consortium have had the opportunity to work together in the analysis of the objectives achieved and the development of future actions marked for the project.

These two meetings were held in Kaunas (Lithuania) and in Gijón. MetalIndustry4 was the host in this event. During three days of work, the entire project team shared ideas, doubts and improvements to be implemented during the remaining months of the project.

Los socios del proyecto son **IBBF, Innovation and Development Promotion Centre, Alytus Business Advisory Center, Reindustria y MetalIndustry4.**



5.3.4 CIRCULAR ECONOMY AND SUSTAINABILITY

Situation of the circular economy in the asturian metal sector

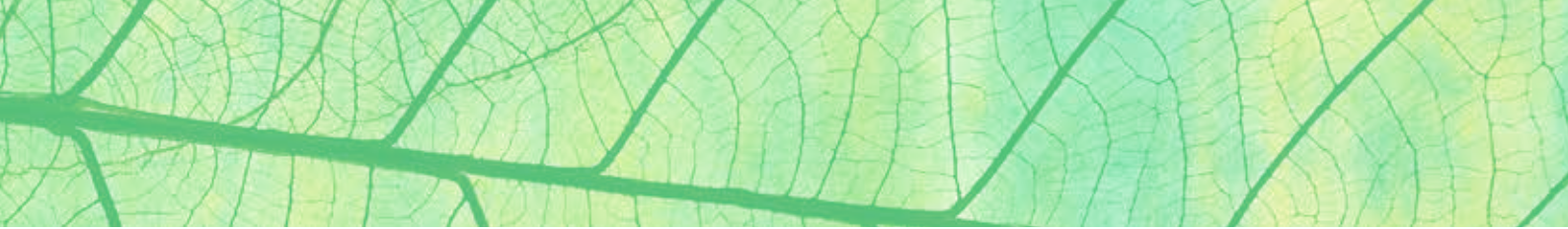


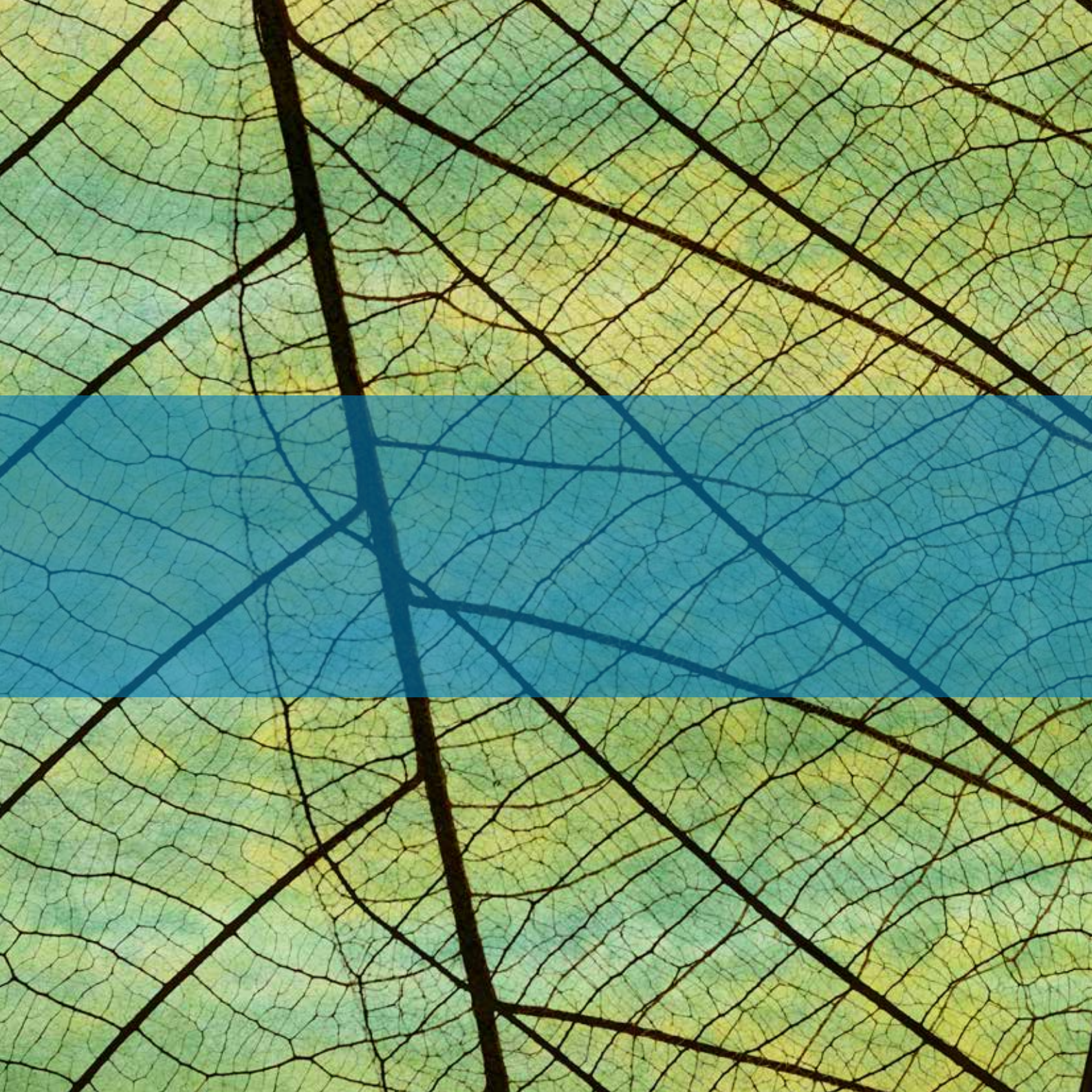
With the update of **MI4's** strategic plan, a new strategic dimension and a new line of action is opened, namely the one related to **Circular Economy and Sustainability**. For this purpose, and as the Cluster has systematically done since its constitution, the starting point of any line of work is to carry out a preliminary analysis to provide a diagnosis of the situation and to propose a series of proposals for action and objectives based on the current situation, on which **MI4** will continue to evolve in this area.

This first study on the situation of the Circular Economy in the Asturian metal sector, allows to know what the starting situation is, as well as to make the appropriate decisions on the possible initiatives to be addressed to develop a solid line of action, both from the perspective of necessity (regulation...) and from the perspective of opportunity (new lines of business, efficiency and cost savings, access to funds from the public support framework...).

Thus, the main expected results of the study have been articulated in two areas:

- **Internal scope**, aimed at defining the roadmap for the implementation of this new strategic dimension of **MI4**.
- **External scope**, through which the metal industry sector has for the first time an analysis of the positioning of Asturian companies in the circular economy.







**SOCIAL
IMPACT**



460 post
+15.000 visits

www.metaindustry4.com

The Cluster website, which has been working for 5 years now, continues to be the fundamental means of communication between the Cluster and its partners.

www.metaindustry4.com

All the information related to the Cluster, its associates and other agents of interest can be found on this platform, such as publishing activities and news of interest. Since its creation, more than 460 entries have been published, 91 during the period covered by this report. All entries are published in Spanish, and some of them are translated into English.



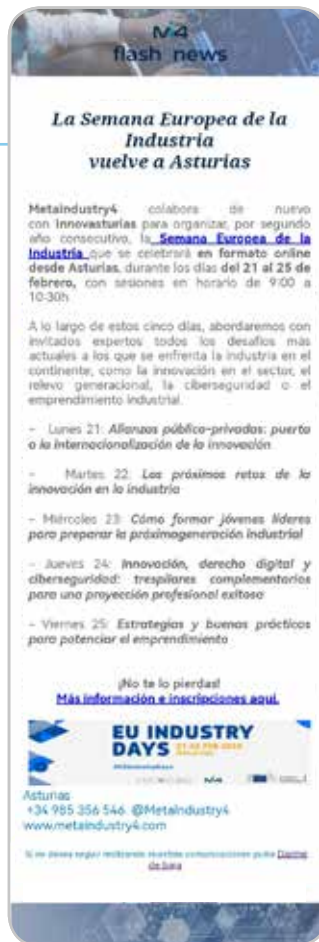
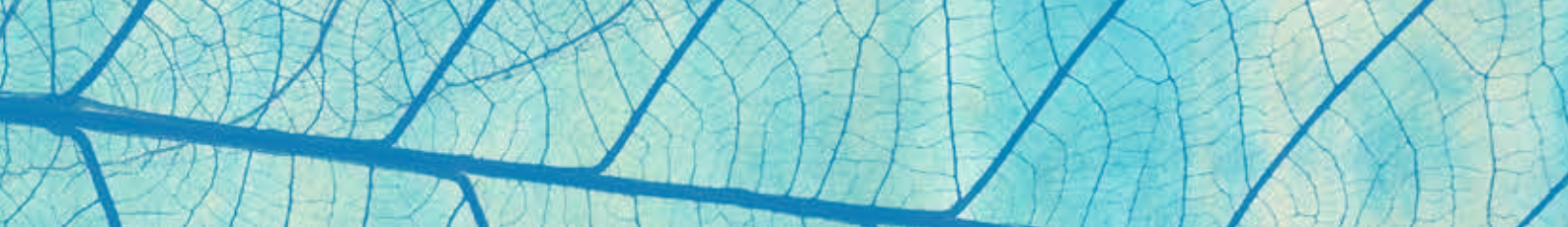


+3.276 followers
+500K impressions

Social Media. Twitter, LinkedIn e Instagram

MetalIndustry4's positioning in social networks has been growing in this period thanks to the constant communication and personal interaction that takes place in them with partners and agents within the Cluster's area of influence. Currently, the Cluster is present on the three most important platforms: Twitter, with a total of 1,234 followers; LinkedIn, in which the Cluster page has more than 1,646 followers, and Instagram, with a total of 396 followers.



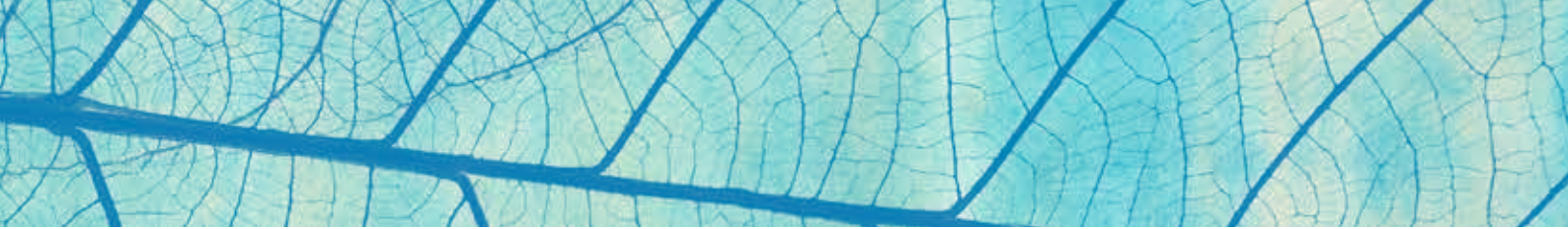


+100 newsletters 800 subscribers

Newsletter MI4 News

800 subscribers every fortnight with the most current and relevant information on the metal sector in the region, as well as nationally and internationally. Additionally, it is a window to the entire ecosystem in which the Cluster operates, since each new registration and relevant news is published.

The sending of **MI4 Flash News** has been unrelenting as a complement to the newsletter, which allows the team to send relevant information immediately with all those matters that require urgent dissemination. Flash News is more focused on communications to partners and may also be sent to the entire list of subscribers depending on its content.



industria & empresa 35

MetaIndustry4 habilita 1,5 millones para financiar proyectos en el sector minero y de materias primas

El cluster que promueve FIMETIA, pone en marcha el proyecto con el objetivo de mejorar la competitividad de las empresas

El proyecto MetaIndustry4 habilita 1,5 millones de euros para financiar proyectos en el sector minero y de materias primas. El cluster que promueve FIMETIA, pone en marcha el proyecto con el objetivo de mejorar la competitividad de las empresas.

MINE-THE-GAP

El proyecto MetaIndustry4 habilita 1,5 millones de euros para financiar proyectos en el sector minero y de materias primas. El cluster que promueve FIMETIA, pone en marcha el proyecto con el objetivo de mejorar la competitividad de las empresas.

48 | ECONOMÍA | ¿ACTÚA O INNOVA?

Diez aliados estratégicos para pilotar la transformación económica regional

Los clusters regionales diversifican áreas clave como el mar, la energía, la agroalimentación, la economía circular o las acciones TIC, culturales o de turismo de calidad

El motor de la transformación digital de pymes agroalimentarias

El hidrógeno y el negocio de las energías renovables, proyectos estrella en 2022

- INICIATIVAS CLAVE**
 - Agroalimentación: 15,3%
 - Economía circular: 14,8%
 - Agroindustria: 14,8%
 - Energías renovables: 14,8%
 - Industria 4.0: 14,8%
- ACTORES**
 - Empresas: 48,2%
 - Administración: 23,1%
 - Investigación y desarrollo: 12,5%
 - Centros de innovación: 12,5%
 - Universidades: 5,5%

¿ACTÚA O INNOVA? | ECONOMÍA | 49

Los 10 clusters de Asturias

Los clusters de Asturias son:

- Agroindustria: 15,3%
- Economía circular: 14,8%
- Agroindustria: 14,8%
- Energías renovables: 14,8%
- Industria 4.0: 14,8%

POR TERCETA

Cluster	Valor
Industria 4.0	4.633.500
Agroindustria	3.893.500
Economía circular	2.674.000
Agroindustria	1.732.500
Industria 4.0	1.561.500
Economía circular	1.233.500
Agroindustria	1.095.500
Industria 4.0	874.500
Economía circular	868.500
Agroindustria	699.500
Industria 4.0	604.500
Economía circular	574.500
Agroindustria	572.500
Industria 4.0	519.500
Economía circular	494.500
Agroindustria	492.500





**7 MI4
IN FIGURES**

MI4 IN FIGURES





Mi4
MetaIndustry4

Annual Report 2021-2022

“Boosting Smart Industry”

Marqués de San Esteban, 1 - 7°
33206 Gijón, Asturias

T. +34 985 356 546
metaindustry4@metaindustry4.com

www.metaindustry4.com

