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Association
Lightweight technology opportunities:
a B2B event for Indian and European stakeholders

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Lightweighting
“The Lightweighting Initiative has long ceased
to be a mere networking concept”

BUSINESS association

Lightweight technology opportunities: a B2B event for Indian and European stakeholders

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On March 24, the European Lightweight Cluster Alliance (ELCA), the ELCA internationalization project (COSME funding programme) and the European Business and Technology Centre (EBTC) hosted an online B2B event to kickstart future intercontinental collaborations between EU and Indian transport and lightweight technology experts.

In 2021, India's fossil CO₂ emissions reached 2.4 million tonnes. The country is currently the world's third biggest polluter, but boldly aspires to reduce its CO₂ emissions to zero by 2070.

India's incentives for collaboration with European lightweight technology stakeholders

Using lightweight materials in the automotive and aircraft industries can play a significant role since these sectors contribute to approximately 11% of total CO₂ emissions. Recent Indian government regulations on the maximum average tare weight for passenger vehicles, as well as the mandatory utilization of recycled materials in the manufacturing of new cars by the Automotive

Research Association of India, have significantly raised the Indian automotive sector's interest in implementing new lightweight solutions. On another note, the Indian government is planning to enhance regional air connectivity across India, which will directly lead to the updating and development of new airports.

The expected rise of maintenance, repair and overhaul facilities in the Indian aviation sector, as well as the recent changes to the drones policy by the Directorate General of Civil Aviation, which seeks to enhance domestic manufacturing capabilities in India, are also expected to significantly enhance the development, adoption and implementation of lightweight solutions in the aerospace sector. Considering these advancements in Indian legislation, the country could benefit from collaborating with ELCA, which can provide

Indian SMEs with extensive knowledge regarding new lightweight technologies in the transport sector and help the Indian transport industry to reach its CO₂ emission goals.

ELCA and the ELCA internationalization project

Originating from a pilot event in 2013 called “The chemical industry meets the automotive industry”, ELCA has been working for over eight years to accelerate the adoption of lightweight materials in strategic industries such as the automotive and aircraft sectors. The main goal is to boost European leadership in the lightweighting field, and therefore contribute to sustainability and resource efficiency.

The ELCA network currently includes 12 hubs from nine different EU countries, who jointly form a pan-European network of 2,330

entities, including small-medium enterprises large enterprises and research technology organizations (Figure 1).

Over the 2020-2021 period, ELCA's activities secured more than 15 million euros for research and development opportunities in the lightweighting field. Furthermore, three R&D projects were launched alongside different collaborative initiatives to improve the positioning of EU lightweighting activities on a global scale, such as the ELCA internationalization project (under the COSME Clusters Go International programme of the European Commission). This project's goal is to create an internationalization strategy between the EU and overseas lightweight technology stakeholders. Multiple events, both virtual and physical, are already planned to foster interactions with these overseas stakeholders (Figure 2).

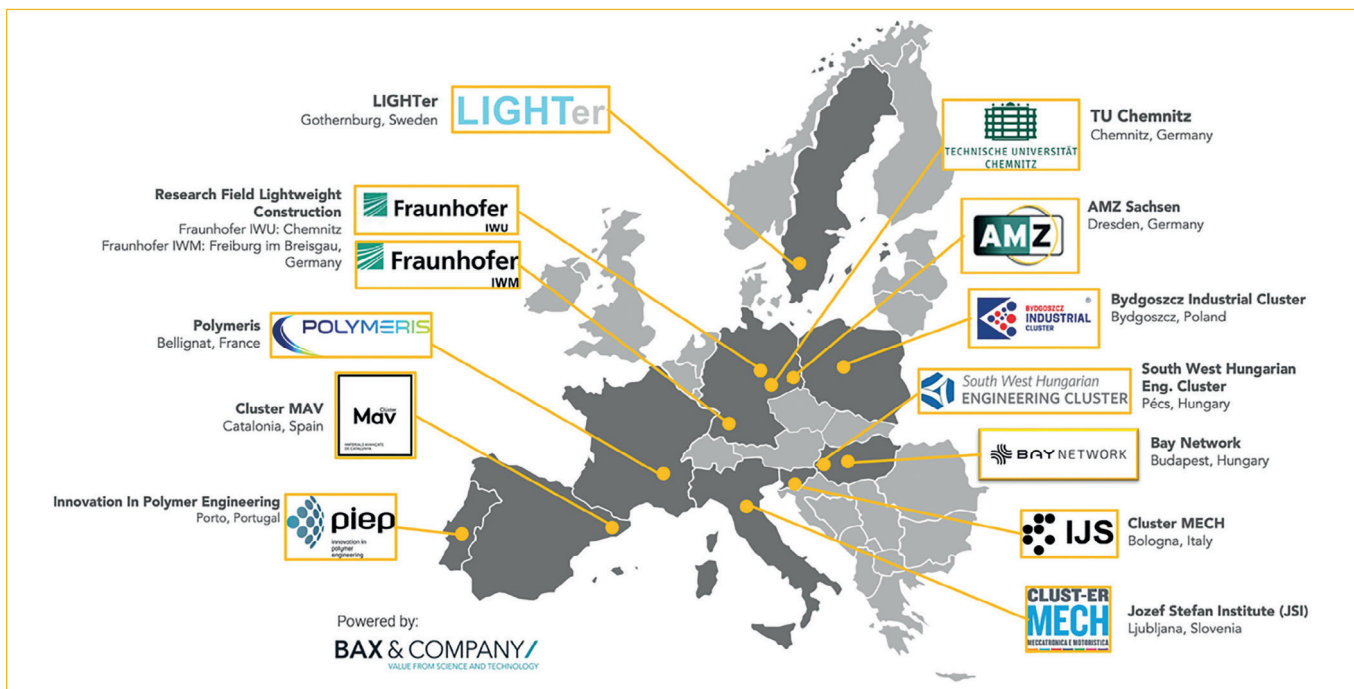


Fig. 1: ELCA's current network, with 12 hubs distributed across nine different countries. ELCA members are of two different natures: industrial clusters and research centres & universities as direct members

India is one of the target markets where the current policy context and future legislation to reduce CO₂ emissions represent a great opportunity. Various connections have already been established by the ELCA internationalization project partners to expand their collaboration with associates outside of the EU, such as EBTC, a project advisory and facilitation organization. As a trusted partner in the Europe-India Business Corridor, EBTC builds actionable intelligence through projects, clusters and programmes backed

by its vast body of knowledge and innovative solutions. EBTC enables smart collaborations between the two regions with a specific focus on sustainability, innovation, green technology and internationalization. In December 2021, to consolidate cooperation and create business opportunities for European and Indian stakeholders, EBTC and ELCA organized a virtual roundtable that focused on the most pressing issues where lightweight materials and related technologies could have an impact on the Indian market.

The Indian transport sector shows great interest in European lightweight technology experts

A follow-up event took place on 24 March 2022, the main goal being to host dedicated virtual B2B meetings where the needs of Indian stakeholders could be matched with the expertise from the ELCA ecosystem. The event included two plenary sessions. The first one elaborated on the latest lightweighting challenges and solutions for the automotive and aviation sectors. Business

opportunities for India and Europe to collaborate on new lightweight applications in the Indian technology sectors were also addressed.

In the second plenary session, EBTC described the status of the Indian transport and aviation industries and presented its transport clusters in India. Sixty B2B meetings were organised between EU and Indian organizations. Out of these 60 meetings, Indian companies were most interested in EU R&D institutions and companies specialising in fibre-reinforced polymer composites and lightweight materials (60% of the planned meetings). They were also interested in intellectual property rights (IPR), government and consultancy (20% of the meetings) and in automotive component manufacturers (15%). About 5% of the meetings were with companies providing tools for quality assessment or healthcare technologies. In addition, an IPR workshop was organised by EBTC to explain to EU stakeholders what the

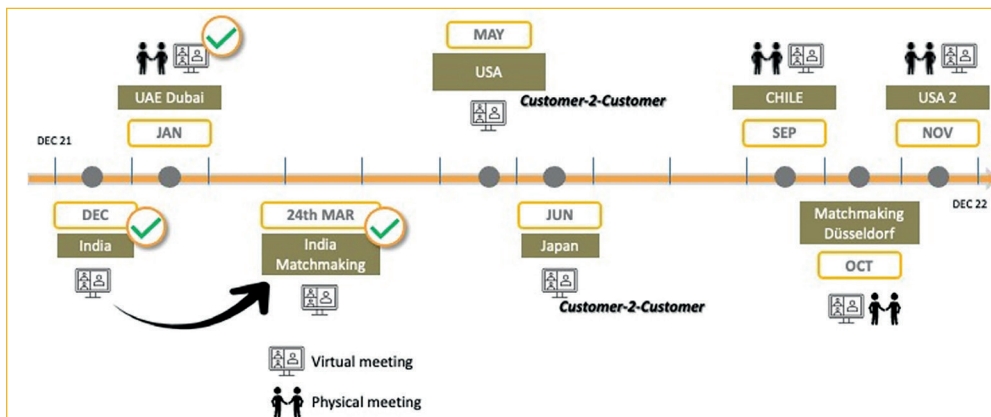


Fig. 2: The transnational mission calendar of ELCA's internationalization project

IPR challenges are to enter the Indian market. The event attracted 80 participants, resulting in promising insights about the new opportunities that can be created thanks to EU-India collaboration.

Insights for future lightweight technology initiatives between EU and Indian stakeholders

Some interesting insights surfaced during the plenary session discussions. As EBTC director Vincent van Noord mentioned, there is awareness for sustainable solutions in the Indian transport sector. However, companies are still not up to date on the urgency of the situation and the innovation opportunities laying ahead. The need for novel technological solutions providing weight reduction, but also recyclability and cost reduction, will increase exponentially in India the coming years. The first plenary session about global challenges also clarified that the worldwide emphasis on circular economy to improve the entire manufacturing value

chain will have a more prominent role in the development of new lightweight technologies. In the last plenary session, EBTC presented the recently launched Project Activation Group (PAG) on "Hydrogen-for-Mobility", under its Sustainable Mobility Cluster. This PAG was created following the positive evaluation of demand opportunities in India and encouragement by the central government to enhance the manufacturing and adoption of hydrogen passenger vehicles in the country. The Indian government is also in the process of inaugurating a pilot project for hydrogen-based advanced fuel cell electric vehicles.

On the other hand, the ELCA Internationalization project identified opportunities for European and Indian businesses, which could be explored by building on their complementarities, favourable innovation and business ecosystems, as well as on mutual trust. From the fruitful conversations between the consortium members and the participants, the

aspiration came to develop and explore affordable and sustainable lightweight solutions for Europe and India. It became clear that the focus should be set on cost- and material-efficient, scalable industrial technologies. The next step for ELCA and EBTC is to develop a Europe-India lightweight knowledge community, which will facilitate dynamic and efficient innovation processes of mutual benefit. These sessions acknowledged the opportunities already initiated by earlier surveys and conversations between EU and Indian stakeholders.

Positioning of lightweight technologies in India and the opportunities ahead

Before the event, a survey was carried out among Indian stakeholders in 2021-2022, which helped to identify the main needs and challenges of the Indian transport sector. The results highlighted that there is still a lack of awareness of the opportunities that lightweight technologies and other sustainable material

solutions can offer to the Indian aviation sector. However, another survey among approximately 90 Indian automotive companies showed interesting results considering the perceived future trends and main materials used in the manufacturing of automotive vehicles (Figure 3). The survey indicated that the main materials used are lightweight materials (46%), such as aluminium, light metal alloys, plastics and rubber, while steel (38%) is still widely used. However, only 6% of the lightweight materials used by Indian companies in the transport sector are composite materials, indicating a huge opportunity for EU experts in this field to transfer their knowledge. This knowledge transfer opportunity was evident from the B2B sessions, since most Indian companies sought interaction with research institutions specializing in fibre-reinforced polymer composites. The perceived future trends of electrification, digitalization and sustainability (61%, 74% and 78%, respectively, perceived these trends as increasingly important) show that the EU lightweighting experts have a wide range of opportunities to introduce modern technology and/or assist Indian manufacturers with the implementation of novel solutions for electric vehicles, circularity and digitalization. Finally, the survey identified that CNC machining and sheet metal stand out as the preferred manufacturing technologies, mostly related to steel parts and components, while both injection moulding and additive manufacturing, linked to the application of lightweight materials, are still underrepresented in the Indian market. This means that the EU can exploit the technology gap in the Indian lightweight market by introducing its state-of-the-art manufacturing technologies for lightweight materials as well.

The Indian automobile industry

AUTOMOTIVE TRENDS

The following results were derived from the survey of over 90 participants analysing a number of the main trends in the automotive sector:

Sustainability



Believe sustainability is relevant or very relevant in the near future.

Digitalisation



Rank digitalisation electrification as a major current trend

Electrification



Consider electrification as a relevant current trend.

Main materials used:



Lightweight materials



Steel



Other materials

Lightweight materials labelled include aluminium 16%, light metal alloys 14%, plastic and rubber 10% and plastic composites 6%, accounting for an almost 50% share of materials.

Main manufacturing technologies:

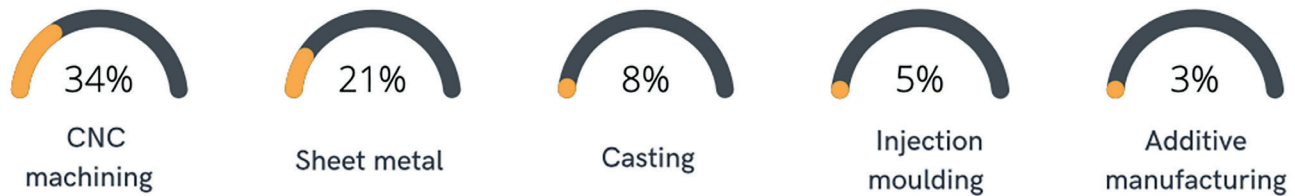


Fig. 3: Results of the survey conducted among close to 90 different Indian companies

Next steps towards future transnational collaboration

This B2B session platform was one of the first of a series of events that provide insights in the opportunities between the EU and Indian markets. The sessions kicked-off a range of activities supporting the further development of the business and innovation projects. One of them is a joint investment and collaboration initiative together with representatives of the government of Chhattisgarh, a central Indian

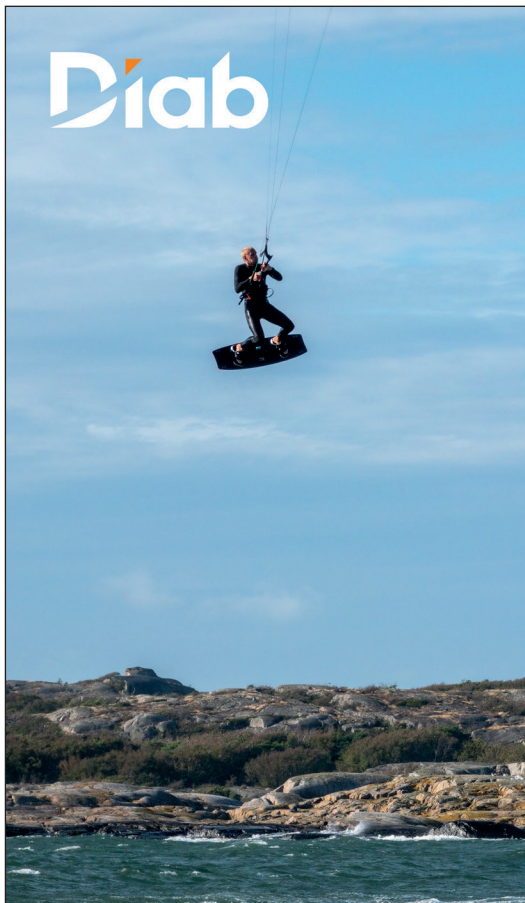
region with a market access to around 520 million people. Chhattisgarh is currently implementing a programme to attract investments and innovative technologies from Europe, which provides promising opportunities in fields such as e-mobility and e-vehicle technologies. The mutual interest of the European and Indian partners is to launch advanced environment-friendly technologies that are affordable, scalable and rely on circular economy principles. European

and Indian partners are invited to join the activities. The next workshops and B2B sessions will take place on 20 October 2022 in Düsseldorf.

For EU and Indian lightweight technology experts and automotive and aerospace businesses, ELCA offers unique opportunities to collaborate, learn and develop new technologies for the lightweighting field. The ELCA platform (<https://elca.innogetcloud.com/>) provides useful information about

lightweight technologies in the form of funding opportunities, event updates, newsletters, journal articles and many other valuable sources to find more about the current status, outlooks and opportunities in lightweight technologies. □

More information:
<https://ebtc.eu/index.php>
<https://elcanetwork.eu/>



LIGHTER THAN EVER

For over 70 years we have supported manufacturers in making products more competitive and sustainable, offering industry-leading competence together with the broadest range of core materials. Together, we develop solutions making your product lighter than ever.

Our high-performance core materials can be found in applications all over the world, in industries like marine, aerospace, wind energy and transport.

With our global manufacturing, sales and engineering presence we can ensure you security of supply, cost efficiency and local support for many years to come.

We are always at the core of your solution.