



2020 Annual Report

Building a Sustainable Future for Zinc



CHAIRMAN'S CORNER

While IZA's Chairman, I regularly touched on how materials competition, environmental regulations, and sustainability considerations shape our industry. I firmly believe the most efficient and effective way to manage these issues is collective, leveraging our resources, and working together through IZA. Covid-19 and the challenges it brought to all of us have only reinforced this belief.

As the leading advocate for zinc, IZA has built a globally recognized group of experts who support our industry on regulatory matters, sustainability planning, technology development, and market-building activities. The quality and transparency of this work have served to build trust and credibility for the zinc industry. In turn, this has helped secure our continued license to operate and market access and expansion for zinc products. These qualities have created an impressive record of accomplishments detailed in this report, proving once again IZA's value to our industry.

With my tenure as IZA Chairman recently ending, I'd like to express my gratitude to the IZA Board and Executive Committee for the opportunity to serve. I also want to thank the IZA staff for their dedication, hard work, and many positive contributions. There is no question that IZA and the zinc industry are stronger and more successful in good times, and especially the challenging ones, by working together.

- Rodrigo Daud



IZA APPOINTS NEW CHAIRPERSON

Lundin Mining's President, CEO, and Director, Marie Inkster, was confirmed as the new IZA Chairperson by IZA Board of Directors during its 2020 Annual General Meeting. Ms. Inkster will serve for three years helping guide IZA in its work to build sustainable, long-term markets for zinc and ensuring the industry's license to operate.

"The IZA plays a crucial role in growing global demand for zinc and promoting its essentiality to human health, crop nutrition, sustainable development, and modern life.

I hope that as Chair, I can help drive progress in all of these areas." - Marie Inkster.



Andrew Green
Executive Director,
International Zinc Association

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EXECUTIVE DIRECTOR'S LETTER

The way businesses respond during times of uncertainty is a good measure of their resilience and strategy. This year was undoubtedly that for IZA with COVID-19 and other aspects, and I'm pleased that actions to strengthen IZA's strategic future have served the association well.

Our succession plans were instrumental in facilitating a smooth transition of two retiring IZA Directors (i.e., Drs. Frank Van Assche and Frank Goodwin). Dr. Howard Winbow, Director of European Affairs, and Martin van Leeuwen, Director of Technology and Market Development, both assumed their new roles remotely this year, without missing a beat, amidst the COVID-19 lock-downs.

Another area of strategic focus has been to identify and prioritize leveraging opportunities. Despite the challenging landscape, IZA continues to grow its membership and raise third-party funding for its programs. Finding common ground and sharing expertise to resolve issues has enabled IZA to attract support from the private and public sectors and deliver results that positively impact zinc.

This year saw the launch of a new phase of the Galvanized Autobody Partnership and new initiatives to promote zinc die casting and zinc batteries. Collectively these programs brought in 20 new members and contributed more than 70% of the revenue spent on those programs. We've also entered into cooperative agreements with the Government of Australia, Canada, the European Union, New Zealand, and the United States to share resources on regulatory issues for zinc, thus increasing the leveraging of resources and helping to ensure appropriate science is used in decision-making.

IZA's management and Board are keenly aware that financial times are challenging amidst the 2020 pandemic, impacting the industry and IZA. We continue to work closely with our Members and stakeholders to ensure our programs and activities add value.

As we look ahead to better times, I want to thank our Members for their continued support and the IZA staff for their outstanding commitment in these difficult circumstances. The team has done an excellent job of adapting and achieving success in the various TMD, EHS, and Communication programs despite the new challenges COVID-19 has presented. I would also like to thank our past Chair, Rodrigo Daud, for his direction and support to IZA the past four years, especially during my transition time as the new Executive Director, and extend my welcome to our new Chair, Marie Inkster. Her leadership and experience have already proven to be an excellent resource for IZA, and I look forward to working with her as we navigate the opportunities and challenges ahead.

CORE IZA PROGRAM AREAS



The International Zinc Association's programs and staff are focused on maximizing Member value by building sustainable, global zinc markets and ensuring the zinc industry's license to operate. This is accomplished through innovative programs in its strategic focus areas of Environment, Health and Sustainability, Technology and Market Development and Communications.



36

Regular Members

174

Affiliate Members

66

Associate Members

ABOUT IZA

The International Zinc Association (IZA) was created in 1991 by a group of leading zinc producers and is guided by the principle of leveraging resources to undertake actions that positively impact the markets, regulatory affairs, and image for zinc.

IZA provides a forum for zinc-industry executives to analyze and anticipate issues affecting zinc globally and ensure a timely and appropriate response.

IZA cost-effectively coordinates initiatives good for zinc— undertaken either directly or through involvement and support of customer groups and related stakeholders on the local, regional, and global levels.

This publication highlights some of IZA's key achievements/activities in 2020 in the core program areas of TMD, EHS, and Communications.

REGULAR MEMBERS

American Zinc Recycling (AZR)
 Befesa Zinc
 Boliden
 Compañía Minera Antamina
 Doe Run Corporate Resources
 EverZinc
 Glencore
 Grillo-Werke
 Hecla Mining Company
 Hindustan Zinc Ltd. (incl. Vedanta Resources)
 HudBay Minerals
 Huta Cynku "Miasteczko Slaskie"
 Industrial Minera Mexico
 JSC Chelyabinsk Zinc Plant
 KCM 2000
 Korea Zinc
 Lundin Mining
 Metalurgica Met-Mex Peñoles

MMG Limited
 Mitsui Mining & Smelting
 New Century Resources
 Newmont
 Nexa Resources
 Rezinal
 Rheinzink
 South32
 Sumitomo Metal Mining
 Teck Resources Limited
 Terrafame Ltd.
 Trafigura PTD Ltd.
 Trevali Mining Corporation
 US Zinc
 VM Building Solutions
 Zinc Nacional S.A.
 ZM Silesia S.A.
 Zochem

TECHNOLOGY & MARKET DEVELOPMENT PROGRAMS

ZINC COATINGS

CONTINUOUSLY GALVANIZED STEEL

IZA's market development program for continuously galvanized steel sheet is mainly in partnership with the steel industry. Its focus has been on protecting and developing its use in automobiles and construction (roofing, facades, and steel framing).

IZA's Galvanized Autobody Partnership (GAP) launched a new phase in 2020, with 21 members and a \$3.7 million research plan over three years. The work underway represents the cutting edge of zinc coating technology and has drawn GM and Ford's support, which is a testament to both the quality of the GAP program and steel's future in the automotive industry.





All but abandoning steel in the mid-2000s in favor of aluminum, Audi has turned course, relying on galvanized high-strength steel to create the lightweight body and modern visual appeal of its latest all-electric offering, the 500+ HP e-tron GT.



Within the construction sector, IZA's focus is mainly on galvanized products for roofing, cladding, and light steel structures. This work aims to educate and develop standards and disseminate zinc-coated steel sheet information through venues such as the GalvInfo Center (visit www.GalvInfo.com).

IZA also provides marketing support and technology transfer to regions currently showing low intensity of use. An example is the Indian Sheet Steel Building Group (ISSBG), which brings together steel manufacturers, fabricators, and engineering professionals. The goal of ISSBG is to raise industry standards through technical information, publications, and expert guidance.

2020 was also a pivotal year for IZA's continuously galvanized rebar (CGR) market development activities. As a new entry to the market, this effort focuses mainly on developing standards and specifications and building awareness of CGR as a coating option. Twenty U.S. states now have CGR specifications, and a new CGR line was launched in India. And in a sign of expected growth in this market, CMC Commercial Metals, one of the world's foremost rebar manufacturers, acquired the North American Galvabar (CGR) assets of AZZ and joined IZA as an Affiliate Member.

GENERAL GALVANIZING

IZA partners with regional galvanizer associations to educate specifiers and government authorities on the importance of investing in better corrosion protection systems when building new infrastructure.

IZA jointly sponsors the Steel Utility Pole Coalition (SUPC) with the American Galvanizers Association (AGA) and the American Iron and Steel Institute. The program seeks to expand the market for galvanized steel utility poles through an education and training program aimed at electric utility owners, engineers and linemen. Throughout 2020, SUPC trained 139 linemen, held multiple webinars, and created six marketing videos. IZA also supported a Spanish translation of the AISI lineman training materials and is expanding the SUPC program into Latin America.

In addition to the CGR activities noted earlier, IZA supports the AGA rebar focus group in North America, rebar market development efforts with AMEGAC in Mexico, ICZ in Brazil, as well as GalvaLatina and others elsewhere.



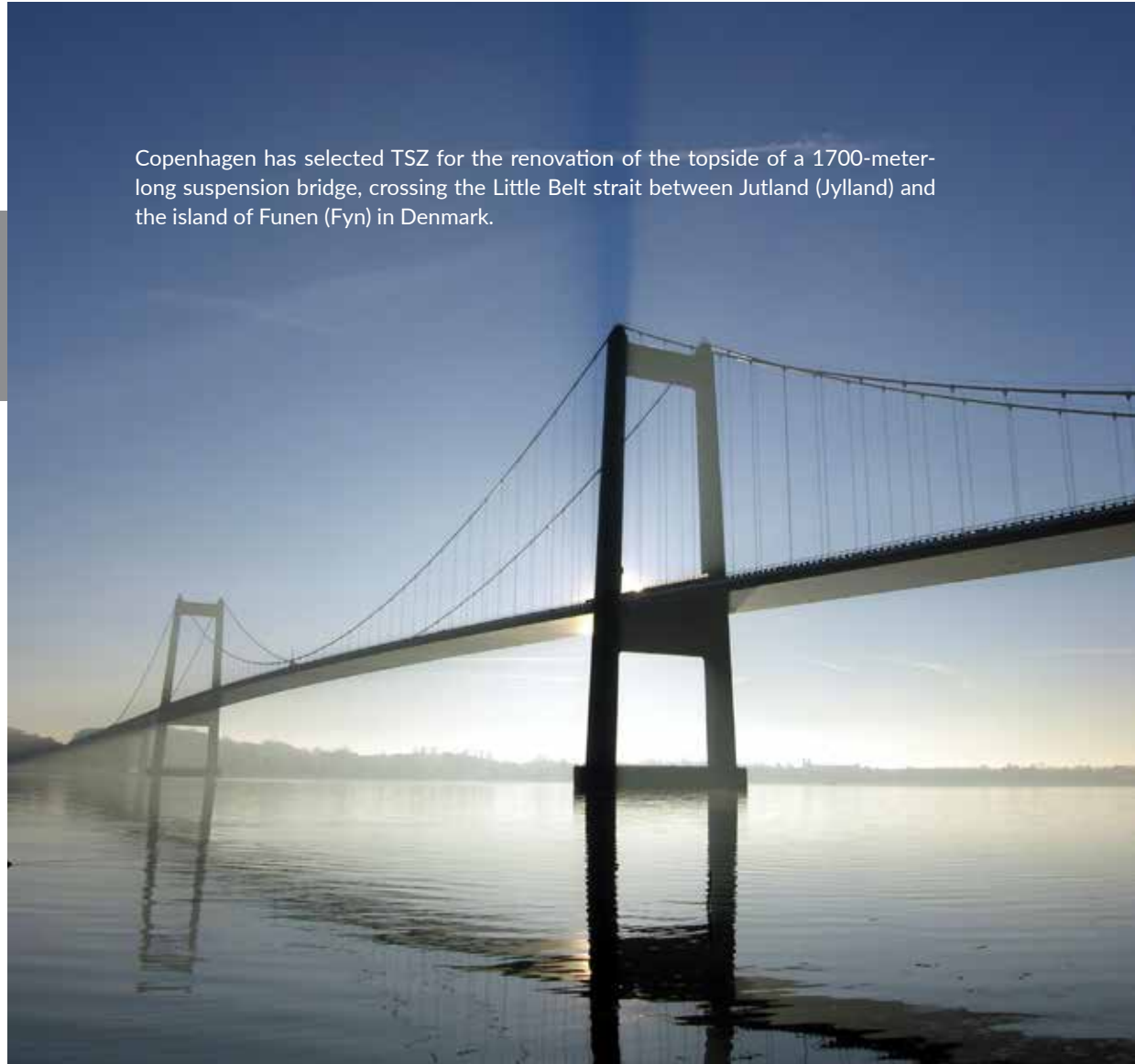
THERMAL SPRAY

IZA worked closely with State and National agencies to promote the use of thermal sprayed zinc (TSZ), and a number of new projects were specified in 2020.

In the United States, Illinois has specified TSZ for three new bridges in Champaign County. While in Europe, TSZ was selected for the renovation of the Little Belt Bridge in Denmark. Germany announced eight new bridge projects using TSZ. Most notable is the bridge over the A 565 Motorway near Cologne, which will be Germany's first highway bridge with a TSZ protective coating. TSZ was also specified for six new bridges over the Albertkanaal in Belgium.

Also in 2020, the Indian Railway gave final confirmation to protect tracks with TSZ, starting with 200,000 mt of rail per annum. These major projects show TSZ has a credible and important role alongside zinc-rich paint and galvanizing in protecting public infrastructure.

Copenhagen has selected TSZ for the renovation of the topside of a 1700-meter-long suspension bridge, crossing the Little Belt strait between Jutland (Jylland) and the island of Funen (Fyn) in Denmark.







ZINC BATTERY INITIATIVE

LOOKING BEYOND LITHIUM

IZA launched a new Zinc Battery Initiative to help promote and grow this emerging market. Zinc batteries have made impressive progress in the past decade and offer substantial advantages over competing chemistries. Yet, zinc products continue to be overshadowed by Li-ion and lead-acid batteries and have not achieved recognition to match the progress made in product development.

Five battery companies have formally joined the initiative, with three others expressing intent. At a November kick-off meeting the group agreed to a work plan aimed at increasing awareness of the virtues of zinc batteries, advancing the recycling of zinc batteries, regulatory monitoring, and stakeholder engagement.



ZINC NUTRIENT INITIATIVE

BUILDING MARKETS THAT ADDRESS GLOBAL PROBLEMS

IZA's Zinc Nutrient Initiative (ZNI) project with World Bank completed its first year of trials in Rajasthan, India. Demonstration plots of pearl millet and wheat showed yield gains as high as 25% with zinc fertilizers. Upon successful completion of the trial, it is expected that the findings will expand to other World Bank projects.

IZA also partnered with the Bangladesh Agricultural Research Institute (BARI) in a trial demonstration where zinc also significantly increased crop yield. As a result, the national guideline recommendation for zinc fertilizers increased by 50%.

These high-profile demonstration projects offer an excellent opportunity to showcase zinc's importance in crops through balanced fertilizer use and bring awareness to stakeholders, including policymakers and the farming community. In addition to addressing important global health and food security issues, the zinc fertilizer market is now over 300,000 tonnes per year due to ZNI activities.

One of the feature videos in the marketing campaign covers Recreational Vehicles where zinc die castings are relied on for their strength.

DIE CASTING

IZA partnered with leading die casting companies and suppliers in a promotional effort aimed at the North American zinc die casting market. The program involves a series of marketing initiatives to raise awareness of the superior characteristics and performance advantages that zinc casting alloys can offer.

As part of this effort, six videos were created in 2020 highlighting specific characteristics of zinc alloys using actual product examples. The videos and list of current program sponsors are available at diecasting.zinc.org/marketing.

Due to Covid-19, the planned European Zinc Die Casting Conference was rescheduled for 2021, but the student and professional zinc die casting design competitions went ahead in North America and Europe.

Light Acumen



ENVIRONMENT, HEALTH & SUSTAINABILITY PROGRAMS

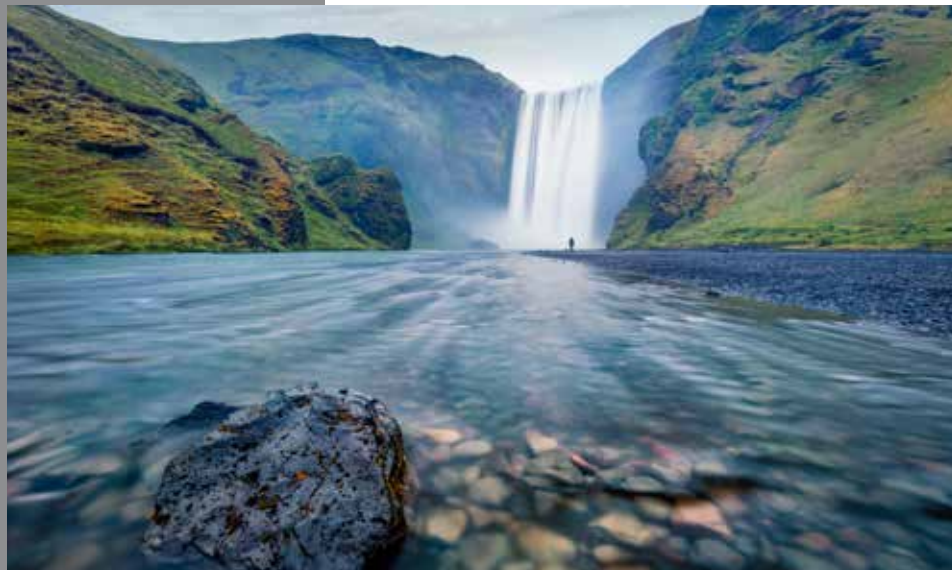
ENVIRONMENT AND REGULATORY

REACH

Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) is the most complex chemicals legislation ever introduced in the European Union and one of the few 'rolling regulations' with a legal requirement to provide regular updates. IZA manages four REACH Consortia, which keeps our team in Brussels extremely busy providing the needed data to register, update, and address challenges to 45 zinc, cadmium, germanium, and indium-related dossiers. In 2020, IZA started the extensive testing programs for zinc oxide to fulfill the requirements identified in the Evaluation framework of REACH.



International Maritime Organization (IMO) regulations govern the transportation and dumping of hazardous solid materials. IZA was instrumental in providing data and information for zinc concentrates to ensure appropriate classification that avoids additional shipping costs due to improper designation under the regulation, saving the industry an estimated 1-2 \$/tonne of shipped cargo.



ZINC WATER QUALITY STANDARDS

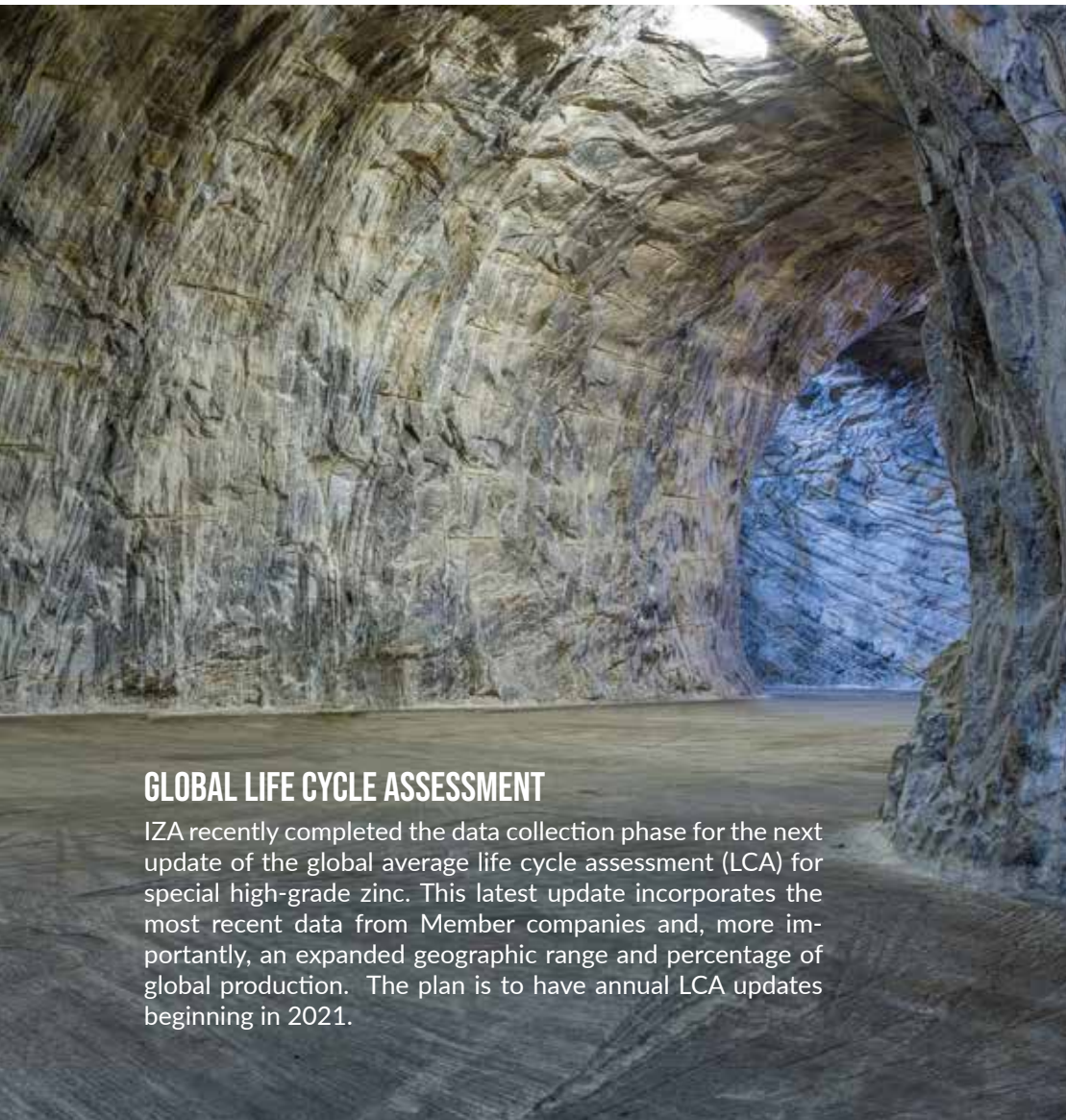
Research has shown that many different water chemistry characteristics influence the bioavailability and toxicity of zinc and other metals. Incorporating bioavailability-based tools into water quality standards for metals would result in water quality criteria more reflective of actual environmental conditions. To this end, IZA is working with authorities in the United States, Canada, Australia, and EU Member states to align Water Quality Regulations with the best available science by promoting the use of bioavailability-based approaches. These efforts will create a future Regulatory framework of more scientifically based water quality criteria for metals.

MERCURY EMISSIONS

In 2020, IZA partnered with the International Council on Mining and Metals and the International Lead Zinc Study Group in pursuing the position that mine tailings do not represent mercury waste under the United Nations Minamata Convention. The industry position for a tiered evaluation approach was accepted and tailings will be considered separate from other mercury waste. The new tiered system will allow for characterizing mercury leachability from tailing if a bulk concentration threshold is exceeded.

EU EMISSIONS TRADING SYSTEM

Based on a cap and trade system for CO₂, the policy has caused electricity prices in the EU to spike, presenting a financial burden for energy-intensive industries like zinc electrorefining. IZA made it possible for companies with zinc operations in the EU to be eligible for compensation for indirect cost of CO₂ tax on electricity price, saving the industry an estimated €90 per tonne of zinc produced. However, the aid depends on each member state's willingness and is negotiated on an annual basis. IZA continues to work with its Member companies ensure proper compensation from their respective Member State.



GLOBAL LIFE CYCLE ASSESSMENT

IZA recently completed the data collection phase for the next update of the global average life cycle assessment (LCA) for special high-grade zinc. This latest update incorporates the most recent data from Member companies and, more importantly, an expanded geographic range and percentage of global production. The plan is to have annual LCA updates beginning in 2021.



SUSTAINABILITY

RESPONSIBLE SOURCING

IZA is working with Members and Authorities to streamline responsible zinc sourcing initiatives. The aim is to minimize Member company burdens through cross-recognition among standards, linking key initiatives to promote efficiency, and making sure IZA represents zinc where it matters most.

To this end, we have begun collaborative partnerships with organizations such as the London Metal Exchange, Base Metal Due Diligence Standard, ResponsibleSteel, and the International Responsible Business Conduct (IRBC) for the Metals Sector.



SDG SECTOR ROADMAP

IZA also created an SDG Sector Roadmap for the global zinc industry. The Roadmap framework is based on Global Goals that aim to advance action and contributions to sustainable development, particularly across the private sector, and improve outcomes in the public sector, wider society, and single individuals.

The Roadmap outlines ten priority goals, which fall into four main themes: health and wellbeing, energy efficiency and climate resilience, operation impacts on people and the environment, sustainable cities and circular economy.

Through the SDG Sector Roadmap, IZA and its supporting members are committed to identifying, implementing, and leveraging these new strategies that will contribute significantly to a sustainable and responsible world through the zinc community.

COMMUNICATIONS

PUBLICATIONS AND MEDIA

IZA maintains unique expertise across a broad spectrum of technology and environmental issues concerning major zinc applications. This expertise is relied on daily by IZA membership, downstream users of zinc, and also media outlets which collaborated with IZA on 89 print and 50 online articles in the mainstream and technical press.

IZA also produces various print and digital publications that illustrate the versatility of zinc as well as reference and technical information covering most zinc applications. New for 2020 is the Zinc Sector Roadmap, Updated LCA, and Annual Report. IZA also publishes monthly newsletters highlighting current developments.





SOCIAL MEDIA & OUTREACH

IZA has built a diversified communications network of Government Agencies, NGOs, and end-user partners with shared interests in promoting zinc's benefits and value. In addition to significantly extending media reach, these partners serve as allies in championing positive zinc messages. In 2020 IZA launched a new Instagram account and increased its LinkedIn followers by 200 percent.

WEBSITES

IZA maintains a public information hub on the web in support of all aspects of zinc and IZA programs. In addition to the flagship site, www.zinc.org, IZA maintains a series of technical micro-sites on fertilizers, die casting, thermal spray, rebar, sustainability, and galvanized sheet. Developments for 2020 include a new Members site and micro-sites on zinc sheet and batteries.



CONFERENCES

Meetings, seminars, and the biennial Zinc College organized or sponsored by IZA, contribute to networking opportunities and improved expertise and efficiency in our Members and their customers. They also generate considerable revenue that is reinvested in programs. Covid-19 made face-to-face meetings impractical in 2020 and all events following the February International Zinc and Zinc Oxide Conferences were canceled or held virtually.



**A WORLD WHERE ZINC IS RECOGNIZED AS SUSTAINABLE
AND ESSENTIAL FOR MODERN LIFE**

www.ZINC.org