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DBU German Environmental Award for steel galvanising company ZINQ

'Inspiring role model for raw materials and energy efficiency'

Osnabrück/Gelsenkirchen. This year, the German Federal Environmental Foundation (*Deutsche Bundesstiftung Umwelt, DBU*) is awarding the German Environmental Prize to the management duo Lars Baumgürtel (59) and engineer Dr Birgitt Bendiek (58) from the steel galvanising company [ZINQ](#) in Gelsenkirchen – 'as an inspiring role model for raw material and energy efficiency, characterised by sustainability and circular economy in a resource-intensive industry,' according to DBU Secretary General Alexander Bonde. The prize, worth a total of 500,000 euros, is one of the most highly endowed environmental awards in Europe. Baumgürtel and Bendiek will share the prize money with Swiss climate researcher Prof. Dr. Sonia I. Seneviratne (51). The German Environmental Award will be presented by the DBU for the 33rd time in 2025, this year on Sunday, 26 October, at a ceremony in Chemnitz – handed over by [German Federal President](#) Frank-Walter Steinmeier.

Classic hot-dip galvanising process with molten zinc at 450 degrees

Galvanisation protects steel from rust. In the classic hot-dip galvanising process, steel parts are immersed in huge tubs containing molten zinc at a temperature of 450 degrees Celsius – but only after undergoing a multi-stage chemical pre-treatment involving degreasing, pickling, a flux bath, rinsing and drying at around 100 degrees Celsius. According to Bonde, Baumgürtel and Bendiek 'represent a company that is exceptionally strong in climate protection and has been outstandingly promoting an important issue for decades with the recycling of raw materials'. The company is a 'great example' of the circular economy in a manufacturing industry. 'This is the only way we can achieve climate neutrality,' says Bonde. Bendiek and Baumgürtel: 'In addition to minimising emissions of climate-damaging greenhouse gases (GHG) such as carbon dioxide (CO₂), our "Planet ZINQ" business model focuses primarily on circular economy practices.' The focus is on the product, whose design aims 'from the outset' at less CO₂, more material health, more recyclability and a longer service life, say Bendiek and Baumgürtel.

Patented microzinc process: top layer thinner than a human hair

The DBU also recognises the perseverance of Baumgürtel and Bendiek. Bonde: 'They have been putting their circular business model into practice for a quarter of a century.' Bendiek emphasises the primacy of the product. Her plea: 'All environmental impacts must be considered over the entire life cycle, including CO₂ emissions and savings in the life cycle assessment.' One result of this strategy is a patented microzinc process that enables an 80 per cent reduction in the ultra-thin zinc coating for steel parts and, like all of the company's piece galvanising

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surfaces, is certified according to the [cradle-to-cradle concept](#) based on [five sustainability criteria](#) – with the aim of advancing energy and material transformation within the company. The research and development department at the Gelsenkirchen site, known as ZINQ Futurium, also provides decisive impetus for this. Baumgürtel: 'We are hunting for the last calorie.' Heat recovery, optimised control technology, a switch to green electricity in 2012, special alloys with minimised resource use, efficient zinc bath management and other measures have not only reduced the demand for energy and zinc as a raw material, but also GHG emissions: approximately 285,000 tonnes of CO₂ since 2010. The microzinc process is remarkable: Classic galvanisation of steel has a coating layer of 80 to 100 micrometres, or My for short. One My is one thousandth of a millimetre. Bendiek: 'With microzinc, we reduce the coating layer to just ten My.' That's one tenth of a hair. What's more, the zinc-aluminium alloy in the microzinc bath makes it possible to lower the usual melting point from 450 to 420 degrees. This saves a lot of energy.

Billions in damage caused by rust

The entire galvanising industry is indispensable. Without steel objects and structures, everyday life would simply not function: sheet metal, bridges, balconies, nails, screws, wheelbarrows, containers, railings, machine, vehicle and hall construction, wind energy and solar systems, gutters and crash barriers – steel is everywhere. The catch: without surface coating, steel would rust immediately upon contact with oxygen. According to the [World Corrosion Organisation \(WCO\)](#) and the [Max Planck Society](#), rust causes economic damage amounting to three to six per cent of gross domestic product every year in Germany alone. That is 100 to 150 billion euros. Without corrosion protection, such as galvanisation, this figure would be many times higher. Nationwide, around two million tonnes of steel parts are coated with zinc every year to protect them against rust. According to its own figures, ZINQ contributes around 200,000 tonnes of galvanised steel to this, with a total of around 550,000 tonnes across all 50 of the company's European sites. 'To achieve this, we use almost 30,000 tonnes of zinc per year across the entire ZINQ Group,' explains Bendiek. The micro-galvanising process practised in Hagen contributes 15,000 to 20,000 tonnes of galvanised steel annually.

Galvanisation also at the Schalke Stadium

Hot-dip galvanising is one of several coating processes, but it is one of the most effective coating methods. It has been practised for around 150 years. 'Hot-dip galvanised products have a service life of up to 100 years – without maintenance costs,' says Baumgürtel. This is precisely where he sees his mission: despite an energy- and resource-intensive process, to create a product that ensures effectiveness and efficiency through its service life and circular quality. In addition to ZINQ, the market leader in Europe and number two worldwide in terms of sales, there are around 130 other galvanising plants in Germany. The origins of the owner-managed steel galvanising company date back to 1889, also in Gelsenkirchen. Perhaps without realising it, fans of the traditional soccer club FC Schalke 04 have a special connection to ZINQ: with a handshake from the then manager Rudi Assauer, the company was commissioned to galvanise the substructures of the seat shells in the stadium.

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