

LIGHTWEIGHT BOOSTS SWEDISH COMPETITIVENESS

– for a sustainable world

Strategic research and innovation programme for lightweighting

Summary of the Lightweight Agenda – with a 2040 perspective

The national Lightweight Agenda – with a 2040 perspective

Since 2013, LIGHTer has served as a hub for Sweden's development in the field of lightweighting. It is with great pride and pleasure that we now present our fourth Lightweight Agenda with a 2040 perspective. LIGHTer has taken great strides over the years, and is today a strong established partner in Europe. Our unique cross-sectoral initiative helps to generate fresh insights and constructive partnerships that have been proven to support global competitiveness, system changes and groundbreaking research.

To succeed requires continual progress and continued interaction among universities, businesses, research institutes and innovation organisations.

This is how we together can create the right conditions and lead the way towards more sustainable competitiveness for Sweden's manufacturing industry. Being involved in driving the development of lightweight solutions is incredibly inspiring, since we know that lightweighting does more than play a key role in reducing carbon dioxide emissions. Lightweight innovations can also improve the workplace environment and promote a more resource-efficient society. This is especially

true for energy and material use. Both the pandemic and increasing security policy concerns across the world have brought home the urgency of adapting to rapidly changing circumstances.



Nowadays, taking into account environmental, social and economic sustainability early on during product development is a must for achieving success in a global market, with rapidly expanding legal requirements and greater sustainability expectations among users. So we consider the Lightweight Agenda's value circle, in which each player does their part, as a model that helps enable lightweight innovation to reach its full potential across a range of new sectors – all based on our shared goal of achieving maximum sustainability and safeguarding the Earth's natural resources.

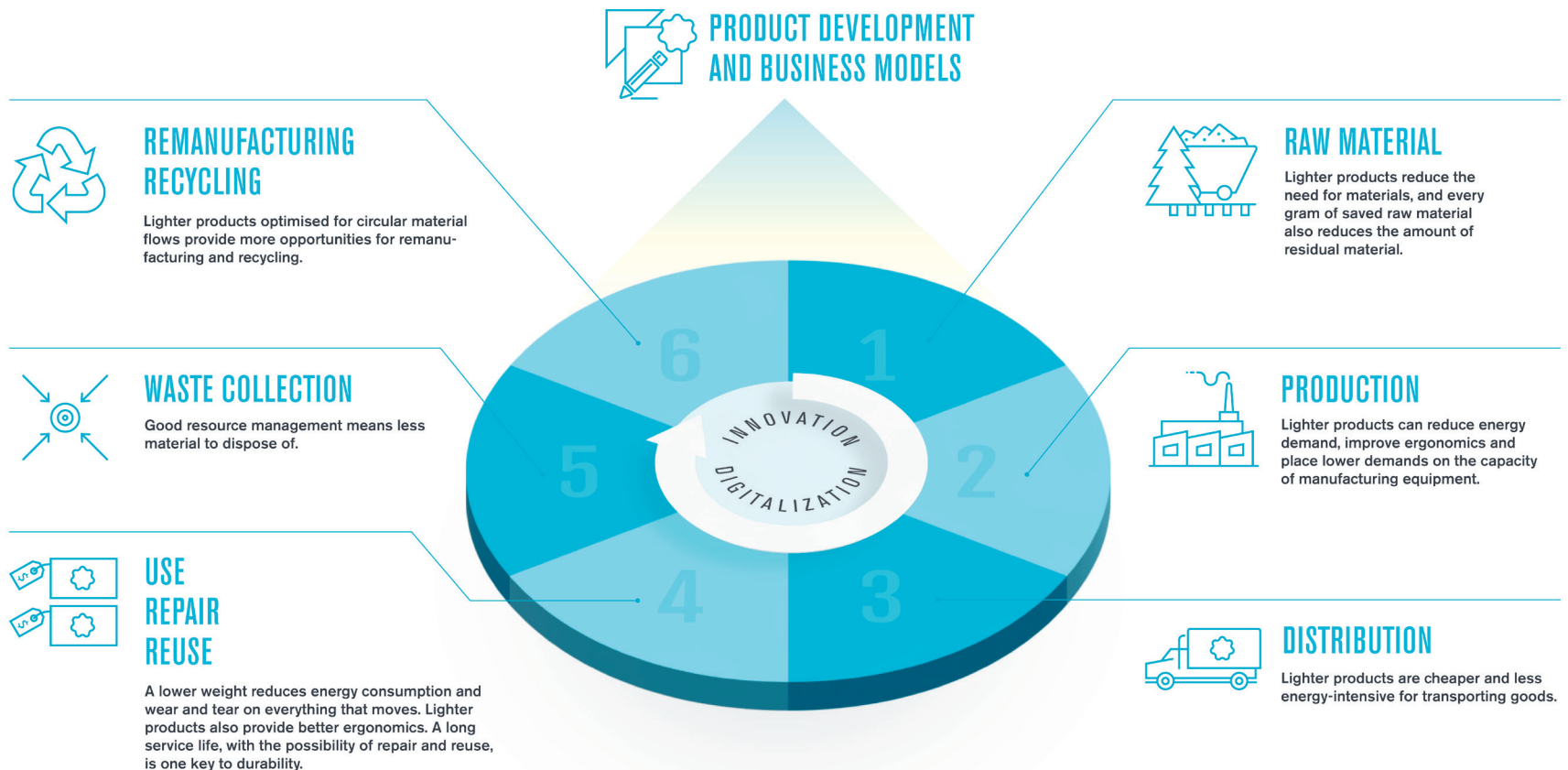
Bengt Nilsson

Chairman of LIGHTer's Board of Directors,
CEO of Lamera

Value circles promote a sustainable domino effect

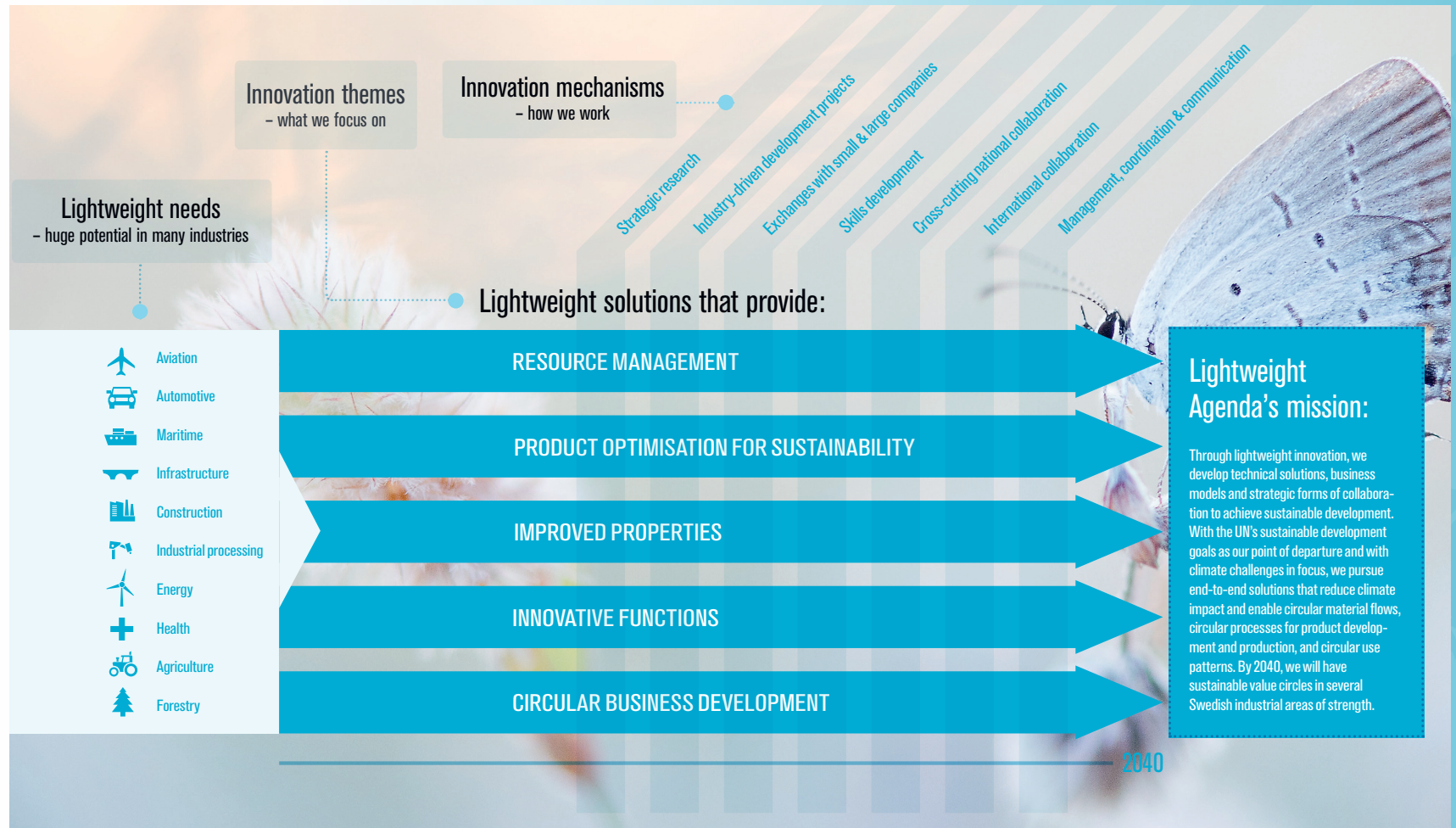
Early on in the product development and design phases, we must take into account all parts of the value circle, which in turn will also affect the choice of business model. Although the holistic perspective involves plenty of challenges, it paves the way for success in a market where the requirements for optimised circular flows are

increasing. Individual lightweight innovations that are put into a holistic context can in turn create additional innovations and a domino effect of improvements, which in turn can lead to new improvements. With innovation as a driver and digitalisation as an essential tool, progress is driven even more – one loop after another.



5 focus areas and 7 tools for lightweight innovation

The Lightweight Agenda's five innovation themes describe our priority focus areas for achieving the agenda's mission. The seven innovation mechanisms guide how we work and what tools we use.



3 recommendations for sustainable solutions*

With three encouraging recommendations as our point of departure, we wish to offer inspiration and to promote deeper collaboration through LIGHTer's activities and innovation mechanisms that can lead to sustainable solutions.

1. Optimise energy and resource efficiency

Increased energy and resource efficiency is necessary for creating sustainable success environmentally, economically and socially. The need for improved resource management is being accelerated by the diminishing globalisation brought on by the recent pandemics and conflicts. This, in turn, is putting pressure on the need for self-sufficiency due to a lack of materials, energy and secure supply chains. From this perspective, lightweight innovation is an enabler whose potential needs to be fully leveraged.

2. Create sustainable value circles

Solutions based on smart lightweight design and a technology for production and materials usually provide immediate results in terms of reduced carbon dioxide emissions. Yet we see that the positive sustainability impacts of lightweighting can bring about an even greater long-term domino effect when more dimensions of sustainability are taken into account early in the process. Getting there requires modified or completely new collaborative partnerships and, sometimes, new business models.

3. Bolster lightweight integration in more areas

For obvious reasons, much of the lightweight development that has taken place so far has been in the mobility sector. Demands for reduced carbon dioxide emissions in the automotive, aviation and shipping industries have been around for quite some time. Through determined efforts to integrate lightweighting in more contexts, circular solutions can get a big boost in significantly more areas. Construction, agriculture, forestry and energy are examples of industries where lightweighting shows great promise from a sustainability perspective.

6 sustainable development goals

– where lightweighting can play a crucial role

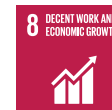
Lightweighting has a major role to play in enabling the world to meet several critical global challenges from the UN's 17 sustainable development goals (SDGs) in the 2030 Agenda. The effects of lightweight design as a natural part of life cycle assessment in circular manufacturing processes are clear: the direct reduction of carbon emissions and the development of more sustainable communities. Lightweight solutions can also have a direct impact on public health, through lighter work tool components or better-adapted tools that improve accessibility and user-friendliness in areas like healthcare or sport.



Affordable and clean energy



Sustainable cities and communities



Decent work and economic growth



Responsible consumption and production



Sustainable industry, innovation and infrastructure



Climate action

LIGHTer

LIGHTer has served as a strategic national research and innovation programme for lightweight technology since 2013. Since its inception, LIGHTer has contributed to system transformations, global competitiveness and groundbreaking research by stimulating and coordinating an effective collaboration model for the development of technologies, test environments and people, with a focus on lightweighting. We provide an innovation environment where major industries, small and medium-sized companies, innovation organisations, universities and research institutes all collaborate across silos. Our goal is to foster sustainable growth

and competitive Swedish businesses, and to export Swedish innovations that help to achieve sustainability worldwide.

Our strategic research and innovation agenda sets our long-term direction while enabling specific actions in the near term.

Read the entire Lightweight
Agenda
lighteragenda.nu/en



A national lightweight arena for companies, research institutes, universities, innovation organisations, industry organisations, municipalities and government agencies. Hosted by RISE.

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