

Powertrain Engineering Sweden AB

Annual report 2021

Corporate identity number 556830-5964

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The annual report and financial statements of Powertrain Engineering Sweden AB (corporate identity number 556830-5964), submitted by the Board of Directors and the Chief Executive Officer for the period January 1–December 31, 2021.

Powertrain Engineering Sweden AB's financial statements are presented on pages 31–41.

In this report, when using the brand name Aurobay to describe activities in 2021, we are referring to Powertrain Engineering Sweden AB.



Powertrain Engineering Sweden AB at a glance

Powertrain Engineering Sweden AB is a global supplier of complete powertrains, including next-generation internal combustion engines and hybrid solutions.

Headquartered in Gothenburg Sweden, the company comprises the Skövde powertrain plant and central functions, combining:

- Major manufacturing, R&D and digital capabilities
- More than 100 years of continuous innovation in powertrain technology and electrification
- A highly-skilled workforce of more than 1,850 people including almost 500 specialising in R&D and manufacturing engineering

becoming Aurobay

In June 2021 the shares of Powertrain Engineering Sweden AB were transferred as dividend to Geely Sweden Holdings AB as an interim step in its transition to the Aurobay brand. The company began using the Aurobay brand name from this date.

Our business areas

1

R&D, industrialization and production

Powertrain solutions developed in our research facilities or co-developed with customers, engineered by our expert teams, integrated into our industrial infrastructure and produced in our highly efficient plants.

2

Contract manufacturing

Hybrid and electric powertrain assembly and production, using the latest lean manufacturing processes.

3

R&D services

Support through all development phases – from concept and prototyping through to testing and validation in our world-leading test arena.

2021 highlights



Q1: Volvo Cars transfers ICE assets to Powertrain Engineering Sweden AB

On Jan 1 2021 Volvo Cars transfers all of its combustion engine operations to Powertrain Engineering Sweden AB for a net book value of SEK 3,965 million. This includes the Skövde powertrain plant, R&D and digital capabilities in Gothenburg and central functions.

Q3: Real estate assets transferred

Powertrain Engineering Sweden AB acquires Powertrain Engineering Sweden Real Estate AB on July 15, taking ownership of the factories, buildings and property assets.

Q3: Aurobay brand is launched

In June 2021 Geely Sweden Holdings AB receives the shares of Powertrain Engineering Sweden AB as dividend from Volvo Cars. Powertrain Engineering Sweden AB starts using the Aurobay brand.

Q3: 30 years anniversary

Our Skövde factory celebrated 30 years of innovative manufacturing.



Q3: Sustainable engine launch

Our next-generation LP Miller hybrid engine launched, 10% more efficient than the previous generation¹.



Q4: Lean award nomination

Aurobay's crankshaft specialists at Skövde were one of three teams nominated for the annual lean award at the Annual Swedish Lean Forum.

Q4: Quality and sustainability certifications

Our Skövde plant achieved ISO 9001 and ISO 14001, and we are now focusing on IATF certification.



Q4: 144 million SEK sustainability grant

The Swedish Environmental Protection Agency approves a grant of SEK 144 million for the conversion of part of the Skövde plant to produce powertrains for electric vehicles. The grant was awarded based on sustainable sourcing of machined parts for battery electric vehicle (BEV) powertrains.

¹ Dahl et al, 2020. The new Volvo mild hybrid engine, 29th Aachen Colloquium Sustainable Mobility 2021

Performance highlights

Billion SEK turnover

11.5

In our first year of operation, Powertrain Engineering Sweden AB achieved total revenue of SEK 11.5 billion.

Efficiency cost saving

7.74%

We achieved an all-time high material cost saving in production of 7.74% year-on-year through commercial negotiation and technical changes.

Related events after year end for Aurobay



January 2022

Following government approvals, the Zhangjiakou powertrain plant joins Aurobay. The addition of the Zhangjiakou plant, formerly part of Volvo Cars, means that Aurobay is now a global business with a footprint in both Sweden and China.



July 2022

Geely Sweden Holdings AB intends, after regulatory approval, transfer of its shares in Powertrain Engineering Sweden AB to Zhejiang Aurobay Powertrain (Aurobay), owned 67% by Geely Holding and 33% by Volvo Cars. This will fully establish Aurobay as a distinct group.



Building a stronger future together

In our first year of operation, we launched a new engine, made above target efficiency savings, and started to establish the systems and competences we will need for the future. We drove forward with our joint venture, backed by Volvo and Geely – launching Aurobay, a pioneering global powertrain company that will expand our capacity and drive our business forward towards a sustainable future.

We launched our first new engine during 2021, 4-cylinder 2.0 L 197 horse-power Miller engine, developed using the innovation capabilities of our in-house R&D team. Around 10% more fuel efficient than the previous generation, it's already driving down emissions in Volvo Cars' V60 model.

Our factory in Skövde produced more than 370,000 hybrid engines for Volvo Cars and other Geely Group businesses, while coping with production slowdowns caused by COVID-19 and the global semiconductor shortage.

Achieving efficiencies

During 2021, we achieved an all-time high saving of 7.74% (against a target of 7%) in material cost. Our Skövde plant continued to improve efficiency by value flow mapping and lean transformation, and we were proud to be nominated for the Swedish lean prize. We also achieved ISO 9001 and ISO 14001, and we began work on IATF certification in autumn 2021.

We started to drive forward new systems and competences, investing in digital capabilities and platforms to enable our future operations and offering.

Becoming Aurobay

We drove forward the joint venture between Volvo Cars and Geely Holding. In June 2021 Powertrain Engineering Sweden AB became part of Geely Sweden Holdings AB and began using the brand name Aurobay, with a vision to re-imagine motion for a brighter tomorrow.

This has paved the way for us to join with the Zhangjiakou plant in China, which celebrated making its millionth engine in 2021. The Volvo Cars Zhangjiakou plant was sold to Aurobay (Zhejiang Aurobay Powertrain Manufacturing Co, Ltd.) in January 2022. Geely Sweden Holdings AB intends to transfer its shares in Powertrain Engineering Sweden AB to Aurobay during Q3 2022, pending government approval. Under the same ownership, Aurobay's capacity will almost double in 2022, with significant additional e-drive production capability.

During the year, we started to define and develop Aurobay's culture, which is built on values of collaborating, caring and creating excellence.

Future strategy

As Aurobay, we expect to be partnering with customers both inside and outside the Geely Group as we evolve a solutions-focused business model addressing customer needs. We'll strengthen our systems and competences and continue to grow our core business and optimize our hybrid technologies. We will also explore new ways to power sustainable mobility, and develop innovative technologies, business models and partnerships in automotive and other industries.

Driving towards net zero

The world is facing a climate crisis. In common with every business in every industry, we need to accelerate the journey towards net zero. We believe we have a responsibility to make mobility as sustainable as possible, as quickly as possible.

In our view, several technologies will be needed to power motion in the future. Electrification will play an important role, but different regions around the world will need different technologies as infrastructure and readiness varies. We will have a portfolio on powertrain solutions for every part of the world, based on their needs. For Aurobay, it's not a race between different technologies to get to net zero. It's a joint effort towards the same goal.

Michael Fleiss

Managing Director, Powertrain Engineering Sweden AB

Innovating for 100 years

Pioneering in combustion management,
emission control and electrification since 1907.

Penta marine

The first engine is produced by the Skövde factory.

1907

1927

ÖV4 Jakob

Launch of Volvo's first car, powered by a 4-cylinder engine produced by Skövde.

Lambda sensor

Volvo becomes the first OEM to produce a 3-way catalytic converter with lambda sensor to control tailpipe emissions.

1976

Transverse 5-cylinder

The Volvo 850 is launched featuring the world's first transverse 5-cylinder engine.

1991

Diesel PHEV

The world's first premium diesel plug-in hybrid (PHEV) is launched in the Volvo V60.

2012

VEA PHEV

Volvo launches the range-topping T8 TwinEngine all-wheel drive (AWD) PHEV powertrain in the XC90, a VEA engine paired with an electric rear axle and producing a combined 300 kW.

GEP3 internal combustion engine (ICE)

The GEP3 engine, a 1.5 L 3-cylinder using the same modular design as the VEA 4-cylinder engines, is launched in the XC40, becoming Volvo's first ever premium 3-cylinder ICE.

Miller engine

Powertrain Engineering Sweden launches its first 4-cylinder Miller cycle engine on the VEA architecture.

2013

2015

2017

2018

2019

2021

Volvo engine architecture (VEA) i-ART technology

The first VEA engine, a premium downsized modular 4-cylinder, is launched. Pioneering i-ART technology, with pressure feedback from each fuel injector is incorporated into the VEA diesel.

GEP3 REX

The 1.5 L 3-cylinder GEP3 installed as a range extender on the London EV Company TX electric taxi.

GEP3 PHEV

Volvo launches the T5 TwinEngine AWD PHEV powertrain in the XC40, a GEP3 engine paired with an electric rear axle and producing a combined 192 kW.

Market trends shaping our future

Trend

1

The pace of electrification is accelerating

In automotive, the electrification market share is growing faster than anticipated, especially in the EU, which is proposing to ban all new pure petrol and diesel cars from 2035. The US and China are also moving toward electrification, albeit at a slightly slower pace. In the long term, vehicles powered by traditional technologies will be phased out in many markets.

Trend

2

Several technologies will power the future

The infrastructure required for electrification is less mature in some regions. That means the world needs several different technologies to help different regions on their net zero journey. Most researchers agree that there is no universal fix - the future calls for a variety of energy sources.

Trend

3

OEMs require suppliers to take responsibility for emissions

With increasing emphasis on Scope 3 emissions - those that come from the supply chain - OEMs are looking for powertrain suppliers to take responsibility for sustainability and compliance. There is more demand for solutions that are cleaner, circular and more efficient, engineering emissions out of the technology at source.

These are some of the global trends that inform our thinking and will influence demand for our services into the future.



Trend

Automation and connectivity are advancing

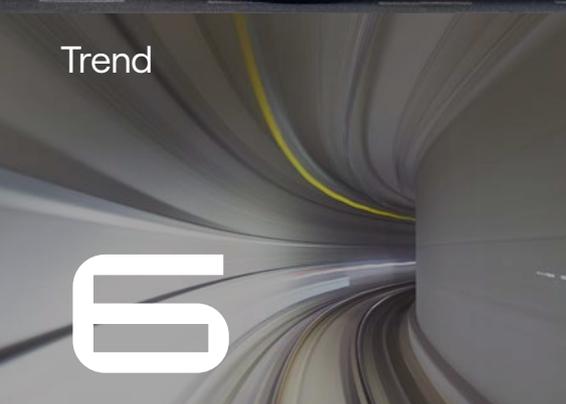
OEMs are increasingly focusing their efforts on connectivity, vehicle autonomy and sharing. As a result, they are looking for suppliers to provide more digitalized value-added content to enable these developments within each vehicle.



Trend

The world is moving to subscription models

As consumers become less focused on vehicle ownership, opportunities for new services and solutions will open up. These will be enabled by data – and deliver excellent customer service, coupled with safer and more sustainable mobility.



Trend

Driving towards net zero – beyond automotive

Other industries are behind automotive in their journey towards zero emissions. Soon every company that powers motion will be on the hunt for sustainable and practical ways to power their machines.



Becoming Aurobay: our strategy

Aurobay's mission is to develop and produce world-class powertrain solutions for a global market. The new business will continue to create value for customers by producing high-efficiency, low-emission engines, and providing world-class R&D and manufacturing services. But we'll also pursue our vision to re-imagine motion, pioneering new technologies and solutions that meet the mobility challenges of the future.

The world is in a critical period of transition. As the climate crisis deepens, the path to net zero must be accelerated. Rapid changes in technology, consumer demands and behaviors are driving a revolution in automation, customer focus and connectivity. These are among the greatest challenges – and opportunities – of our time.

But the future of mobility is complex. Electrification is part of the answer, but different regions with different societal demands, economies and technologies need different solutions to help them on the journey. We take a global outlook. A successful transition for the world will involve a variety of technologies and concepts working together towards common goals.

Over the coming years, Aurobay will help our customer respond to these challenges, focusing on three main areas:

- Core: Optimizing current business
- Explore: Identifying and addressing new customer needs
- Becoming Aurobay

Core: Optimizing current business

We will continue with our core business, ensuring customer focus, competitiveness and compliance to grow a global market. And pushing our core technologies and processes towards net zero.

Our journey starts here, with the technologies, and capabilities we have today. We will continue to develop our core offering and acquire new global customers for our current technologies. We'll work with our customers to help them achieve their climate goals and adapt to meet changing demand.

We'll do this by:

- Continuing to advance current powertrain technologies, driving down emissions and making them cleaner, more efficient and cost-effective.
- Providing world-leading engineering services that help our customers to develop, refine and adapt powertrain technologies for an increasingly digital and automated world.
- Co-developing solutions with our customers and helping them manage decreasing volumes in legacy products.
- Developing greener energy solutions for hybrid engines, including zero emission biofuels, with our partners.
- Building volume and making continuous efficiency improvements at our plants.

Explore: Identifying and addressing new customer needs

We will create Aurobay's core business of tomorrow by exploring innovative, sustainable technologies, business models and partnerships in automotive and other industries.

As current technologies reach maturity, we will explore new avenues for our business, building on our engineering excellence and expertise in powertrain technologies, solutions and services. We'll develop new sustainable technology concepts and new applications for existing technologies in automotive and beyond. Through this process, we will create new markets and develop our future core offering.

Areas we will explore include:

- E-powertrains
- The potential of digital capabilities and data as an asset
- Subscription business models
- Other industries that need powertrain solutions

Becoming Aurobay

We will build the Aurobay of tomorrow, ensuring we have the right systems and competences to deliver our strategy.

As the world transitions to the future of mobility, Aurobay is on a transformation journey as a company. From being a unit within an OEM to a leader in sustainable powertrain solutions, exploring new conceptual solutions and possibilities and partnering with other innovators to drive change.

How we will succeed

Key strengths and capabilities supporting our strategy:

- **R&D and engineering know-how:** we have vast experience that can be applied to other applications and industries
- **Innovation:** we have a track record of innovation, pioneering advances in manufacturing systems and sustainable automotive technology
- **Customer focus:** our outside-in perspective drives the way we make decisions to solve problems for our customers and the world
- **Manufacturing integration:** we can seamlessly integrate a wide variety of customer applications into our lean, flexible production structure
- **Sustainable by design:** over time we have successfully reduced the carbon footprint of our products, increasing performance while reducing emissions
- **Constant evolution:** we use our knowledge and our drive to innovate to continually repurpose our assets to meet new challenges

Aurobay locations

Powertrain Engineering Sweden AB, Gothenburg

- 502 people working in R&D and manufacturing engineering (including consultants)
- 141 people in corporate functions
- Located at Geely's home for innovators – Uni3 – in Gothenburg

Powertrain Engineering Sweden AB, Skövde

- 1146 people working at the Skövde plant
- Manufacturing and assembling combustion engines
- Powered by 100% renewable energy
- Certified ISO 9001 and ISO 14001, essential for OEM suppliers.
- Almost 372,000 engines in 2021
- Peak manufacturing capacity of 600,000 engines
- One of three finalists in the 2021 Swedish Lean Prize, awarded by the Lean Forum

Zhangjiakou Aurobay Powertrain Manufacturing Co., Ltd

- 821 people working in Zhangjiakou plant
- Manufacturing and assembling combustion engines and e-Drives
- Certified ISO 9001 and ISO 14001, essential for OEM suppliers
- 250,000 internal combustion engines and 120,000 e-motors in 2021
- Celebrated making its 1 millionth engine in 2021
- Chinese National Green Plant in 2017

Employee numbers as of June 2022.

With manufacturing capabilities in Skövde, Sweden and Zhangjiakou, China, Aurobay will combine more than 100 years of continuous innovation, engineering excellence and sustainability with an agile, can-do attitude, cost efficiency and vast global scale.



“ We’re on a journey of continuous improvement. Every day at the plant, we seek the next opportunity and find the best solution. We’re always strengthening our processes and that means our competitive advantage.
Bjarne Hammar, Head of Manufacturing, Skövde



“ We are passionate about safety, quality and efficiency. We’re always looking for ways to outperform, not only our competitors, but also our own previous ways of working.
Terry Zhang, Head of Manufacturing, Zhangjiakou



Our people

As the Aurobay brand develops, we're already building a great team, based on strong values: caring, collaborating and creating excellence. We look for energetic people who want to make a difference in the world, with an agile mindset, a global outlook and passion for innovation.

Our people have excellent opportunities for growth and development. Because we're a new company, each one of us has the opportunity to help shape the business. We can make our own choices and our performance is appreciated and rewarded. Here's what some of our people have to say about working at Aurobay:



Henrik Eigert, Digital

"You could say that I'm Volvo born and bred – as I went to the Volvo High School in Skövde, then spent the first part of my career at Volvo Group and Volvo Cars. When Aurobay was founded,

I followed our CIO here. His leadership style is inspirational, and I was ready to start a new journey.

"Aurobay is a great place to be in IT. We are setting up new systems and making changes that will make a real difference to the company. There aren't silos here, we're very agile. If you have a good idea, everyone is on board, and we figure things out together.

"As a leader, I'm pretty hands-off as our culture is about employing the right people and trusting them to do their job well. My focus is on the future. What IT competences, processes and platforms will we need to enable Aurobay's future business? Our future is really exciting."



Felicia Eriksson, People & Culture

"Aurobay really appeals to me because we're building a brand-new business. We have a new strategy, a new culture and a new leadership model, so we've got the excitement and innovation that

go with that, but we're also on firm ground because our background with Volvo Cars and Geely.

"Everyone here is very driven and motivated and that's so positive to be around. I'm Aurobay's recruitment specialist, and when I talk to potential recruits, I tell them that this is a fantastic environment to work in. You can bring everything you've learned in your life and work so far and use it to make a difference. It matters to me – and to most of the people I interview – to work for a company that's making a positive impact on the world. I'm proud of our stance on sustainability and diversity, and how we're finding new ways to reduce emissions. I'm proud to be part of the journey."



Kai Zhao, Zhangjiakou plant

"As a Quality Engineer in the Variability Reduction Team, my job is all about analyzing and mitigating deviations – for example, incoming materials that don't meet specifications or issues with

our process – then coming up with solutions. I really enjoy the logical thought that goes into improving the way we do things. It's a very creative and satisfying job.

"I like the way I get to work autonomously but always feel supported. My manager and team are always there for me. If a problem feels too big, I can ask for help. We put our heads together and collaborate to find the best solution.

"A few times a week, I have calls with colleagues to talk about what we're working on. It's important to me that I can share my own ideas and knowledge as well as learning from others.

"My previous experience focused on combustion engines. Now I work on both electric motors and combustion engines. It's the perfect environment for me to grow and develop."



Giulia Morello, R&D

"I joined Aurobay from Volvo Cars, working as R&D Process Manager. When R&D Projects and Quality was restructured into two groups to support the company's fast growth,

I was promoted to Team Manager for the Engineering Management group. I'm so pleased to be trusted with my first managerial position at 27 years-old, and to be working with such a wonderful team of people.

"I have great hopes and ambitions for our company, and I'm really glad to be able to contribute to our ambition to re-imagine motion for a brighter tomorrow with powertrain technologies that are both sustainable and practical.

"My team is working towards strengthening cross-functional support and collaboration within and outside engineering sections, which means we're helping to build a stronger platform for innovation throughout the whole business."



Hazim Karic, Skövde plant

"Aurobay offers a highly supportive work environment. It is a very open, collaborative culture that puts people at its heart. This helps us to work better together as a team and

learn from each other.

"As a team leader, I am always discovering new ways to improve my leadership skills while delivering value and quality for our customers. It really is a job where you learn something new every day, because each day presents new and interesting challenges. This continuous process of solving problems and coming up with fresh, innovative solutions means that I am constantly developing my skills and growing with my team.

"I have really enjoyed moving to Aurobay. It is especially motivating to be part of a small, committed team in a company that has such a strong focus on sustainable mobility.

"I also love how diverse and inclusive Aurobay is as a company. No matter your background or age, it is a place that recognizes talent and offers opportunities to everyone."

Sustainability strategy

A photograph of rolling green hills under a bright sky, with a herd of sheep grazing in the foreground. The hills are covered in lush green grass, and the lighting creates strong shadows and highlights, emphasizing the contours of the landscape. In the lower right foreground, a herd of sheep is grazing, with a person on a horse visible among them.

We are committed to a sustainable future for our planet, our community, and our business. Cars, light trucks and motorcycles are responsible for around 9% of global emissions. We understand not only our responsibility to reduce our impact, but our opportunity to make a positive difference.

Sustainability is core to our strategic vision of re-imagining motion for a brighter future, and one of our critical success factors. We want to be known as among the world's most sustainable powertrain companies, as well as being a leader in ethical business.

Setting our ambition

Aurobay will lead the way in powering sustainable mobility. That means going beyond what could be reasonably expected of us by customers, consumers and regulators. Setting ambitious targets. Pushing further and faster than before.

Aurobay will focus its sustainability efforts in three areas:

- **Environmental impact:** we will become carbon neutral by 2040. Our highest priority is to reduce our carbon footprint and push our environmental impact towards zero. We have already started lowering our engine, operational and supply chain emissions, and we are innovating to reduce them further.
- **Circularity:** we will become a circular business by 2040. Our products will maximize reuse and recyclability,

minimize waste, and use sustainable materials. We are exploring the potential of remanufacturing as a service.

- **Responsible business:** we want to be a leader in social responsibility for our industry by 2030. Good business conduct and ethical values will run through everything we do.

Defining our targets

We have set stretching targets to manage our impact, across each area of our sustainability strategy. As a new business, 2021 is our baseline year, and we are therefore not reporting on our performance for 2021. Our targets and sustainability performance will be presented in detail from 2022.

Managing sustainability

Sustainability at Aurobay is managed by our Sustainability function, following direction set by Aurobay's Boards and the Executive Management Team. We also have a Sustainability Board which is a cross-functional team, who manage sustainability implementation across the business and accelerate change.



¹ Greenpeace, Crashing the climate 2019

Powertrain Engineering Sweden AB, Executive Management Team

At publication of this report June 2022.



Michael Fleiss
Managing Director
Nationality: German

Michael set up Powertrain Engineering Sweden as a unit within Volvo Cars in 2019. He has 25 years' experience in product development, having started his career at Volkswagen in Germany, before moving to Bentley Motors in the UK and then to Volvo Cars in Sweden. Michael holds a Masters in Mechanical Engineering from the University of Lübeck.



Ken Lam
Chief Financial Officer
Nationality: Canadian

Ken has 28 years of finance leadership experience in the automotive industry, 12 years with Volvo Cars and 16 years with General Motors. He holds a Bachelor of Business Administration from the Chinese University of Hong Kong and an MBA from Ivy School of Business in Ontario, Canada. Ken is also a Certified Public Accountant/Certified Management Accountant Ontario and a Chartered Financial Analyst.



Daniel Alvarsson
Head of Manufacturing Engineering
Nationality: Swedish

Daniel came to Powertrain Engineering Sweden AB after over 20 years of leading and managing industrial projects and production operations within Volvo Cars. He holds a M.Sc. in Automation from Chalmers University of Technology in Gothenburg and an MBA from the University of Gothenburg.



Mats Andersson

Head of R&D
Nationality: Swedish

Before joining Powertrain Engineering Sweden AB, Mats held R&D leadership roles at Volvo Cars, heading up Short I6 Engine programmes 2003–2007 and building up Electrical Propulsion Systems 2014–2017. He holds a Ph. D. from Chalmers University of Technology in Gothenburg and was an Associate Professor in Microelectronics there during the 1990s.



Mattias Berglund

Head of Strategy and Alliances
Nationality: Swedish

Mattias joined Powertrain Engineering Sweden AB from Volvo Cars, where he was Manager for Powertrain Product Strategy. Mattias holds an M. Sc. in Mechanical Engineering and Industry analysis from Chalmers University of Technology in Gothenburg and comes with more than 20 years of experience within the automotive industry.



Helene Carlson

Head of Communications and Public Affairs
Nationality: Swedish

Helene has 20 years of strategic marketing and communications leadership within automotive and healthcare. Before joining Aurobay, she was Head of Communications and Investor Relations and was a member of the executive management team for listed company Opus Group AB. She holds an M.A. in Strategic Marketing Communication and Media Studies from the University of Gothenburg, and Leeds Beckett University in the U.K.



Per Engler

Head of Corporate Functions
Nationality: Swedish

Per joined Volvo Cars in 2017 as Head of HR Digital and Consumer Experience, before moving to Powertrain Engineering Sweden AB. Previously, he was Head of HR at Latour Industries for eight years, also serving as CEO of Specma Seals within the group. He holds a Masters in Marketing Management from Griffith University, Australia.



Bjarne Hammar

Head of Manufacturing, Skövde
Nationality: Swedish

Bjarne joined Volvo Cars in 2017 before transferring to Powertrain Engineering Sweden AB. He has had several senior positions in supply chain, R&D and project management within Husqvarna Group and also worked as CEO for a tech company. He holds a M.Sc. in Engineering and Finance from Chalmers University of Technology.



Annica Johannsson

Head of Quality and Sustainability
Nationality: Swedish

Annica moved to Powertrain Engineering Sweden AB after over 20 years of global leadership experience at Volvo Cars, within R&D and Quality. She holds a B. Sc. in Innovation Engineering from Halmstad University and a certification in Combustion Technology from Chalmers University of Technology.



Jonas Leo
Chief Information Officer
Nationality: Swedish

Before joining Powertrain Engineering Sweden AB, Jonas helped drive Volvo Cars' digital transformation and online consumer experience, first as Director of Enterprise Digital Transformation and then CTO Volvo Online Digital, Care by Volvo. Other roles with the company included Director Global Application Services and Head of Enterprise Digital APAC. He has an M.Sc. in Mechanical Engineering.



Shan Liu
Head of Procurement
Nationality: Swedish

Formerly Head of Procurement for Internal Combustion Engines at Volvo Cars, Shan has many years of management experience within procurement in Sweden. She also spent three years as a strategic buyer at Hyundai in China. Shan holds an M.Sc. in Logistics and Transportation Management from Gothenburg University.



Petra Odenman
Head of Sales and Market
Nationality: Swedish

Petra came to Powertrain Engineering Sweden AB from AB Volvo, with substantial experience leading matrix organizations in an international environment. She has spent many years in management positions within Sales, Strategy, Production, Logistics and Procurement. Petra began her career at OEM international Inter-nordic Bearing AB, and studied International Business Management at Jönköping University.



Terry Zhang
Head of Manufacturing, Zhangjiakou
Nationality: Chinese

Terry is Plant Manager of the Zhangjiakou Engine Plant and an operational member of Michael Fleiss' management team, supporting Powertrain Engineering Sweden AB's transition to the Aurobay brand. Terry has extensive experience in manufacturing engineering, production and project management in both FIAT and Volvo Cars. He holds a Bachelor's degree in Engineering and an MBA.

Powertrain Engineering Sweden AB, Board of Directors

At publication of this report June 2022.



Per Ansgar

Chairman of the Board
Deputy CFO of Volvo Cars
Nationality: Swedish

Per has more than 35 years of industrial experience, most of which has been in the automotive industry. His career has taken him to China and the US as well as Sweden. He is now one of the Deputy CFOs at Volvo Cars.



Hanna Fager

Board member
Head of Corporate Functions at Volvo Cars
Nationality: Swedish

Hanna has been Head of Corporate Functions at Volvo Cars since 2020, having held several leadership positions within Human Resources. She holds a B. Sc. in Human Resource Development, Labour Relations from University West, Sweden and is also Deputy Board member of Fager & Fager AB and Independent Interior Group Sweden AB.



Michael Fleiss

Board member
Managing Director of Powertrain Engineering Sweden AB
Nationality: German

Michael set up Powertrain Engineering Sweden as a unit within Volvo Cars in 2019. He has 25 years' experience in product development, having started his career at Volkswagen in Germany, before moving to Bentley Motors in the UK and then to Volvo Cars in Sweden. Michael holds a Masters in Mechanical Engineering from the University of Lübeck.



Lee Ma

Board member
Deputy CFO of Volvo Cars
Nationality: Chinese

Lee is one of the Deputy CFOs in Volvo Cars and the CEO of the Volvo Tech Fund. He has more than 15 years of automotive industrial experience – having worked within Geely, General Motors and Delphi in the US, China, and Sweden.



Dr Yuan Shen

Board member
General Manager, Collaborative Innovation Center at Zhejiang Geely Holding Group
Nationality: Chinese

Yuan has worked at Geely Group since 2010 and has helped develop a variety of products including the award-winning 1.3T, 1.4T, and 1.0TD turbocharged engines. Previously, he worked at AVL and at the US National Vehicle and Fuel Emissions Laboratory. He has a Ph.D. in Mechanical Engineering and a B.Sc. and M.Sc. in Mechanical Engineering.



Javier Varela

Board member
Head of Engineering and Operations at Volvo Cars
Nationality: Spanish

Javier is Head of Engineering and Operations at Volvo Cars, having spent his career within various automotive companies around the world. He holds a degree in Industrial engineering from the University of Vigo, Spain and sits on the Board of GV Technology Sweden AB.



Joe Zhang

Board member
CFO of Zhejiang Geely Holding Group
Nationality: Chinese

Joe has been CFO of Zhejiang Geely Holding Group since 2021. Having joined Geely in 2014 as the Financial Director of Geely Commercial Vehicle Group, he became Head of Finance at Geely Auto in 2017 and Head of Treasury of Geely Holding Group in 2019. He has rich management experience, especially in treasury, group M&A and financial management.

Employee representatives



Marko Borg Peltonen

Board member
Representative of the blue collar union
Nationality: Swedish

Marko is the chairman of the blue collar union at Powertrain Engineering Sweden AB. He joined Volvo Cars in 1984 and worked in manufacturing, machining cylinder blocks before becoming a full-time union representative.



Joakim Dahlin

Board member
Representative of Unionen
Nationality: Swedish

Joakim is chairman of the Unionen club at Powertrain Engineering Sweden AB and is a full-time union representative. He previously worked as a productivity engineer in projects at the Skövde engine plant.



Tony Hansen

Alternate
Senior safety representative
Nationality: Swedish

Tony is the senior safety representative of the blue collar union. He joined Volvo Cars in 2001 and worked in assembly before starting his current role on a full-time basis.



Håkan Modigh

Alternate
Representative of Ledarna, Sveriges Chefsorganisation
Nationality: Swedish

Håkan is chairman of The Swedish Managers Association at Powertrain Engineering Sweden AB. He previously served as Quality Manager at the Skövde engine plant.



Board of Directors' report

Powertrain Engineering Sweden AB does not consolidate its subsidiaries in accordance with the Annual Accounts Act chap. 7 § 2. The consolidated financial figures are represented by the consolidated annual report of Geely Sweden Holdings AB (corporate identity number 556810-9010).

Ownership structure

Powertrain Engineering Sweden AB is a fully owned subsidiary of Geely Sweden Holdings AB (corporate identity number 556810-9010). Geely Sweden Holdings AB is owned by Shanghai Geely Zhaoyuan International Investment Co., Ltd., registered in Shanghai, China. Shanghai Geely Zhaoyuan International Investment Co., Ltd. is ultimately owned by Zhejiang Geely Holding Group Company Limited, registered in Hangzhou, China.

Significant events during 2021

On May 31, 2021, 100% of the shares in Powertrain Engineering Sweden AB were sold to Volvo Car AB (corporate identity number 556810-8988). On June 30, 2021, 100% of the shares in Powertrain Engineering Sweden AB were transferred as dividend to Geely Sweden Holdings AB (corporate identity number 556810-9010).

On July 15, 2021, Powertrain Engineering Sweden AB acquired 100% of the shares in Powertrain Engineering Sweden Real Estate AB (corporate identity number 559140-6425).

On November 24 2021 an extra shareholders' meeting was held where it was decided to pay a dividend of SEK 410 million.

Comparative figures covering several years

THOUSAND SEK

	2021	2020	2019	2018	2017
Revenue	11 522 815				
Income after financial items	307 760	441	-15	-13	-26
Balance sheet total	7 000 119	4 750 558	187	184	190
Equity ratio (%) ¹	62,0	100,0	65,8	73,4	77,4

(1) Equity ratio = Adjusted equity divided by total assets.

Development of the company and associated risks

As detailed on pages 13–16 of this annual report, the company's strategy is to join with the Zhangjiakou plant in the Zhejiang Aurobay Powertrain Co. Ltd. (Aurobay) joint venture. Geely Sweden Holdings AB is due to transfer its shares in Powertrain Engineering Sweden AB to the joint venture in July 2022. However this is subject to government approval in China, which is as yet uncertain.

Through its activities, Powertrain Engineering AB is also exposed to risks of a variety of operational risks that could negatively impact the company and its financial position. The Board of Directors identifies and evaluates these risks and ensures that measures are in place to limit their impact.

Risks that have been identified as priorities over the coming year include the shortage of semiconductors, caused by ongoing supply chain disruption related to the global pandemic, which will continue to constrain our operations and impact our customers.

Operations in research and development

Powertrain Engineering Sweden AB carries out in-house research and development of solutions conceived in our research facilities or co-developed with customers. The company also provides R&D services for companies developing their own products, providing support through the product journey, from concept and prototyping through to testing and validation.

Proposed distribution of earnings

The following funds are at the disposal of the Annual General Meeting (AGM):

Retained earnings brought forward		4 340 199
Net profit for the year	THOUSAND SEK	967
		4 341 166

The Board proposes the following allocation of funds:		4 341 166
Carried forward	THOUSAND SEK	4 341 166

For the results and financial position in general reference should be made to the following income statement and balance sheet, together with the notes.

Income Statement

THOUSAND SEK	Note	2021	2020
Revenue		11 544 829	-
Cost of sales		-10 661 640	-
Gross income		883 189	0
Selling expenses		-24 654	-
Administrative expenses		-473 324	-
Other operating income		38 608	-
Research and development expenses		-102 885	-
Other operating expenses		-20 243	-16
Operating income	2	300 691	-16
Result from financial items			
Financial income	3	14 664	458
Financial expenses	4	-7 595	-1
Total income from financial items		7 069	457
Income after financial items		307 760	441
Appropriations	5	-307 000	-282
Income taxes		207	-33
Net income		967	126

Balance Sheet

THOUSAND SEK	Note	2021-12-31	2020-12-31
Assets			
Fixed assets			
Intangible assets			
Software	6	35 347	-
Concessions, patents, licenses, trademarks and similar rights		39	-
		35 386	0
Tangible assets			
Other improvements and installations	7	76 121	-
Land and land improvements	8	154	154
Machinery and equipment	9	2 849 190	-
Equipment, tools, fixtures and fittings	10	405 787	-
Construction in progress	11	73 502	-
		3 404 754	154
Financial assets			
Participations in subsidiaries	12	988 484	-
Deferred tax assets		2 435	-
		990 919	0
Total fixed assets		4 431 059	154
Current assets			
Inventories			
Finished products and goods for resale		54 952	-
Products in progress		346 307	-
Goods in transit		176 174	-
		577 433	0
Current receivables			
Accounts receivable		13 926	-
Other current receivables		7 827	14
Receivables from group companies		406 582	4 750 390
Current tax assets		60 199	-
Prepaid expenses and accrued income		660 273	-
		1 148 807	4 750 404
Cash and cash equivalents		842 820	-
Total current assets		2 569 060	4 750 404
Total assets		7 000 119	4 750 558

Balance Sheet

THOUSAND SEK	Note	2021-12-31	2020-12-31
Equity and liabilities			
Equity			
Restricted equity			
Share capital		50	50
		50	50
Non-restricted equity			
Retained earnings		4 340 199	4 750 073
Net income		967	126
		4 341 166	4 750 199
Total equity		4 341 216	4 750 249
Provisions			
Other provisions		239 785	–
Total provisions		239 785	0
Current liabilities			
Accounts payable		1 285 877	–
Liabilities to group companies		474 920	282
Current tax liabilities		–	14
Other current liabilities		111 113	–
Accrued expenses and deferred income		547 208	13
Total current liabilities		2 419 118	309
Total equity and liabilities		7 000 119	4 750 558

Changes in equity

Share capital	Other non-restricted	Total equity	
Balance at 1 January 2020	50	73	123
Shareholder's contribution	–	4 750 000	4 750 000
Net income	–	126	126
Balance at 31 December 2020	50	4 750 199	4 750 249
Dividend to shareholder	–	-410 000	-410 000
Net income	–	967	967
Balance at 31 December 2021	50	4 341 166	4 341 216

Number of shares for the company are 500.

Notes

Note 1

Accounting and valuation principles

The financial reports have been prepared in accordance with the Swedish Annual Accounts Act (1995:1554) and the Swedish Accounting Standards Boards general guidelines BFNAR 2012:1 Annual Report and Consolidated Financial Statements ("K3").

Assets and liabilities have been valued at acquisition value unless otherwise stated below.

Applied accounting principles in 2021 are unchanged compared with the previous year.

Foreign currency

Powertrain Engineering Sweden's functional currency and reporting currency is Swedish kronor. Transactions in foreign currencies are translated at the exchange rate currency on the transaction date. Receivables and liabilities in a currency other than the functional currency are translated to the functional currency using the closing day rate at year-end. Exchange rate differences relating to operating assets and operating liabilities are recognised in operating profit, while exchange rate differences relating to financial items are reported in net financial items.

Revenue recognition

Revenue from sale of goods and services

Revenue is recognised when the customer obtains control of a delivered good or service, and thus has the ability to direct the use and obtain the benefits from the goods or services. The company's reported net sales mainly relate to revenue from the sale of goods and services. Powertrain Engineering Sweden AB manufactures and sells engines, spare parts and accessories.

Gross sales have, where appropriate, been reduced by the value of discounts granted and returns on goods.

Income taxes

Current taxes are valued on the basis of the tax rates and tax rules that apply on the balance sheet date. Deferred taxes are valued on the basis of the tax rates and tax rules decided before the balance sheet date. Reported income taxes include tax to be paid or received for the current year, adjustments for previous years' current tax and changes in deferred tax. For items reported in the income statement, related tax effects are also reported in the income statement. Tax effects of items that are reported directly against equity are reported against equity.

Deferred tax is calculated on all temporary differences that arise between taxable and reported values of assets and liabilities. Deferred tax assets relating to loss carryforwards or other future tax deductions are reported to the extent that it is probable that the deduction can be set off against surpluses in future taxation.

Lease contracts

All lease contracts, regardless if they are financial or operational, in Powertrain Engineering Sweden AB are reported as operational lease contracts. Lease fees are charged to operating expenses under the duration when reported as operational contracts.

Inventories

Inventories consists of raw material, consumables and supplies, semi-manufactured goods, work in progress and finished goods. Inventories are carried at the lower of cost and net realisable value.

Financial instruments

Financial instruments are valued on the basis of acquisition value.

Financial instruments reported in the balance sheet include accounts receivable and other current receivables, accounts payable and other current liabilities. The instruments are reported in the balance sheet when the company becomes a party to the instrument's contractual terms.

Financial assets are removed from the balance sheet when the right to receive cash flows from the instrument has expired or been transferred and the company has transferred virtually all risks and benefits associated with ownership.

Financial liabilities are removed from the balance sheet when the obligations have been settled or otherwise ceased.

Accounts receivable and other receivables

Receivables are reported as current assets with the exception of items maturing more than 12 months after the balance sheet date, which are classified as non-current assets. Receivables are recognized at the amount that is expected to be paid after deductions for individually assessed doubtful receivables and are reported at accrued acquisition value.

Loan liabilities and accounts payable

Loan liabilities and accounts payable are initially reported at an accrued acquisition value after deduction of transaction costs. If the reported amount differs from the amount to be repaid at maturity, the difference is accrued as interest expense over the term of the loan using the instrument's effective interest rate. In this way, at the due date, the reported amount and the amount to be repaid correspond.

Government grants

A government grant is recognised when there is reasonable assurance that Powertrain Engineering Sweden AB will comply with the conditions attached to the grant and that the grant will be received. Government grants are recorded in the financial statements in accordance with their purpose, either as a reduction of expense or a reduction of the cost of the

capital investment. Government grants are recognised in the income statement over the periods necessary to match them with the related expenses which they are intended to compensate. Government grants related to assets are deducted from the carrying amount of the asset which will result in reduced depreciation expense over the useful life of the asset. In case the received government grant is not intended to compensate any expenses or acquisition of assets, the grant is recognised as other income. Government grants for future expenses are recorded as deferred income.

Classification of current and non-current assets and liabilities

An asset is classified as a current asset when it is held primarily for the purpose of trading, is expected to be realised within twelve months after the balance sheet date or consists of cash or cash equivalents, provided it is not subject to any restrictions. All other assets are classified as non-current assets.

A liability is classified as a current liability when it is held primarily for the purpose of trading or is expected to be settled within twelve months after the balance sheet date. All other liabilities are classified as non-current liabilities.

Intangible assets

An intangible asset is recognised when the asset is identifiable, Powertrain Engineering Sweden AB controls the asset, and it is expected to generate future economic benefits and the cost could be measured reliably. Intangible assets in the Company comprise mostly investments in externally acquired administrative IT systems and software.

Intangible assets are recognised at acquisition cost less accumulated amortisation and any impairment loss. The acquisition cost includes, where applicable, internal costs directly related to the development of the asset.

Internally developed intangible assets such as internally developed software and product development are expensed as incurred within Powertrain Engineering Sweden AB.

Amortisation methods for intangible assets

Intangible assets are systematically depreciated over their respective useful life or the length of the contract term.

As the main rule, the following estimated useful lives are applied:

Software	3–8 years
Licenses	10 years

Tangible fixed assets

Tangible assets are recognised at acquisition cost, less accumulated depreciation and potential impairment loss. Cost includes expenditure that can be directly attributed to the acquisition.

Subsequent expenditures on property, plant and equipment increase the acquisition value only if it is probable that Powertrain Engineering Sweden AB will have future economic benefit from the subsequent expenditure. If one asset is replaced by another, then the carrying amount of replaced part is derecognised. All other repairs and maintenance are charged to the income statement during the financial period in which they are incurred.

Depreciation methods for tangible assets

Tangible assets are systematically depreciated over the expected useful life of the asset. Each part of an item of property, plant and equipment, with a cost that is significant in relation to the total cost of the item, is depreciated separately when the useful life for the part differs from the useful life of the other parts of the item. Land is assumed to have an indefinite useful life and is not depreciated.

As the main rule, the following estimated useful lives are applied:

Land improvements	30 years
Machinery	8–30 years
Equipment	3–20 years

Depreciation is included in cost of sales, selling or administrative expenses depending on where the assets have been used.

Provisions

Provisions are recognised in the balance sheet when a legal or constructive obligation exist as a result of a past event and it is deemed more likely than not that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated.

Shares and participations in group companies

Shares and participations in group companies are reported at acquisition value less write down.

The carrying amount of shares and participations in group companies is impairment tested regularly to assess whether there is an indication of a decline in value. When there is an indication that shares and participations in subsidiaries have decreased in value, a calculation is made of the recoverable amount. The recoverable amount is the highest of an asset's fair value and value in use, where value in use is defined as the

present value of future cash flows. If the recoverable amount is lower than the carrying amount, a write-down is made.

The write-down is reported as Income from participations in Group companies in the income statement.

Group contributions

Paid and received group contributions are reported as Appropriations in the income statement.

Note 2

Employees

THOUSAND SEK

The average number of employees

Women

Men

Total**2021****2020**

529

1296

1825

-

-

0

Note 3

Financial income

THOUSAND SEK

Interest income from group companies

Foregin exchange differences, net

Total**2021****2020**

1943

12 721

14 664

458

-

458

Note 4

Financial expenses

THOUSAND SEK

Other financial expenses

Interest expenses to group companies

Total**2021****2020**

-7 529

-67

-7 596

-

-1

-1

Note 5

Appropriations

THOUSAND SEK	2021-12-31	2020-12-31
Group contributions paid	-307 000	-282
Total	-307 000	-282

Note 6

Software

THOUSAND SEK	2021	2020
Acquisition value		
Balance at January 1	-	-
Additions	43 145	-
Divestment and disposals	-52	-
Balance at December 31	43 093	0
Accumulated depreciation and impairment		
Balance at January 1	-	-
Depreciation expense	-7 746	-
Balance at December 31	-7 746	0
Net balance at December 31	35 347	0

Note 7

Other improvements and installations

THOUSAND SEK	2021	2020
Acquisition value		
Balance at January 1	-	-
Additions	83 522	-
Balance at December 31	83 522	0
Accumulated depreciation and impairment		
Balance at January 1	-	-
Depreciation expense	-7 401	-
Balance at December 31	-7 401	0
Net balance at December 31	76 121	0

Note 8

Land and land improvements

THOUSAND SEK	2021-12-31	2020-12-31
Land		
Balance at January 1	154	154
Net balance at December 31	154	154

Note 9

Machinery and equipment

THOUSAND SEK	2021	2020
Acquisition value		
Balance at January 1	-	-
Additions	3 349 785	-
Divestment and disposals	-15 578	-
Balance at December 31	3 334 207	0
Accumulated depreciation and impairment		
Balance at January 1	-	-
Depreciation expense	-485 018	-
Balance at December 31	-485 018	0
Net balance at December 31	2 849 189	0

Note 10

Equipment, tools, fixtures and fittings

THOUSAND SEK	2021	2020
Acquisition value		
Balance at January 1	-	-
Additions	527 682	-
Divestment and disposals	-1 472	-
Balance at December 31	526 210	0
Accumulated depreciation and impairment		
Balance at January 1	-	-
Depreciation expense	-120 423	-
Balance at December 31	-120 423	0
Net balance at December 31	405 787	0

Note 11

Construction in progress

THOUSAND SEK	2021	2020
Balance at January 1	-	-
Additions	73 502	-
Net balance at December 31	73 502	0

Note 12

Participations in subsidiaries

THOUSAND SEK	2021	2020
Accumulated acquisition values		
Opening balance, January 1	-	-
Investments	988 484	-
Closing accumulated acquisition value	988 484	0

	No. of shares	% interest held	Net result	Book value 2021-12-31	Total equity 2021-12-31 ⁽¹⁾
Powertrain Engineering Sweden Real Estate AB, 559140-6425	100	100	780	988 484	275 830
Total				988 484	275 830

(1) Total equity includes shareholders equity and equity part of untaxed reserves.

Note 13

Significant events occurred after the year end

The war in Ukraine is an external situation, initiated after the end of the balance sheet date, which could affect the industry, our customers and also our business. It may cause delivery issues on behalf of our suppliers and thus increase costs. We predict a continued volatile market situation for our products. Given the uncertain development of the war, Powertrain Engineering Sweden AB continues to follow developments and is taking necessary measures as needed.

Signatures

Gothenburg, June 2022

Per Ansgar
Chairman of the Board

Marko Borg Peltonen
Union representative

Joakim Dahlin
Union representative

Hanna Fager
Board member

Michael Fleiss
Board member

Lee Ma
Board member

Dr Yuan Shen
Board member

Javier Varela
Board member

Joe Zhang
Board member

Our audit report was submitted

Deloitte AB

Jan Nilsson
Authorised Public Accountant

Aurobay

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Powertrain Engineering Sweden AB

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Corporate identity number 556830-5964

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