

FOCUS ON
**AUTOMOTIVE
SECTOR**

IN POMERANIA
2021



Invest
in Pomerania

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INTRODUCTION

When in 1886 Carl Benz patented his three-wheeled vehicle with internal combustion engine and electric ignition, few could have expected that his invention in the following decades would drastically and, it seems, irreversibly change the way mankind organises transportation, builds cities or wages wars. Probably just as few people at that moment saw that the foundations were being laid for a completely new industrial sector, which in the second decade of the 21st century would provide employment for millions of people around the world. In less than 150 years, the automotive industry has become one of the most valuable components of the global economy, responsible not only for the huge value of sales, but, above all, for the powerful contribution to innovation and social issues, due to the level of employment generated.

Just as the automotive industry changed the world, today, the world is changing the automotive. Advancing climate change is forcing the switch to electric power, the development of artificial intelligence is blocking the way for autonomous vehicles, flexible forms of financing, combined with the new approach of developed societies to property, enable consumer leasing and carsharing. Then there is COVID-19 and the completely unpredictable changes that a pandemic can bring in terms of, for example, public transport. All this is crucial for companies operating in the automotive sector – it determines future sales levels, directs investment activities, models new products.

In this report, we take a closer look at these trends. We do it through the prism of the Polish automotive industry, but we also take a closer look at Pomerania, where, contrary to all appearances, a lot is already happening in terms of the development of the sector, and with the development of new trends, even more can happen. A significant part of our publication is devoted to foreign direct investments, as they are the driving force of the Polish automotive industry.

We wish you an interesting read.

Invest in Pomerania Team

“

The automotive industry has been developing in Pomerania for years in the shadow of traditional sectors such as shipbuilding and logistics. However, in the context of electromobility and autonomous vehicles, this situation will change dynamically. Pomerania has all the assets to become an important supplier of products and services for the automotive industry of the 21st century.

Mieczysław Struk, Marshal of the Pomeranian Voivodeship

”



“

Electromobility, autonomous driving, or hydrogen solutions are the future of the broadly understood automotive industry, which has long been the economic pillar of Poland. The changes that have been observed in this industry in recent years provide an opportunity to further strengthen Poland's position in the international value chain. The emergence of completely new, big players on this market also opens up new opportunities for regions of the country so far not traditionally related to the car industry. I hope that the cooperation of, among others, the Gdańsk University of Technology with foreign investors will contribute to technology transfer and talent development and will lead to the creation of new R&D centres of the industries of the future.

”

Marcin Fabianowicz, Director of the Investment Centre at the Polish Investment and Trade Agency



02.

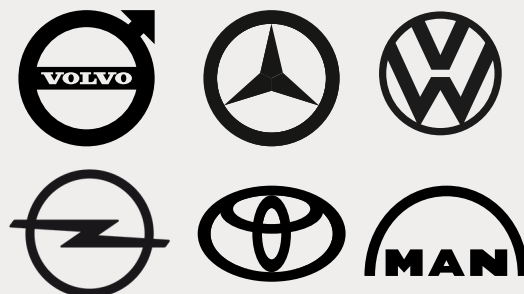
AUTOMOTIVE MARKET IN POLAND AND POMERANIA

Poland has for years been one of the largest European manufacturers for the automotive industry. The region, which, due to its coastal location and dynamically developing port infrastructure, has a huge development potential, is the Pomeranian Voivodeship.

AUTOMOTIVE SECTOR IN POLAND

29.7

**EXPORT VALUE IN 2020
[USD BILLION] [1]**



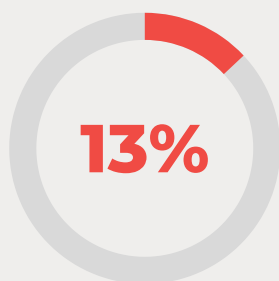
**THE LARGEST CAR
MANUFACTURERS IN POLAND**

Poland is one of the largest producers of cars and car parts in Europe [2]. Despite the difficult situation of the automotive industry caused by the COVID-19 pandemic, Poland noted only a slight decrease in exports of goods from this sector in 2020, mainly due to a significant increase in exports of lithium-ion batteries.

The automotive industry provides more than half a million jobs, of which more than 213,000 are manufacturing jobs [3].

509,000

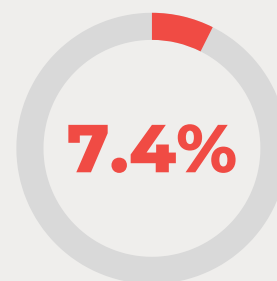
**NUMBER OF PERSONS
EMPLOYED IN THE
AUTOMOTIVE SECTOR**



In 2019, the automotive accounted for 13% of the total export of goods [4]

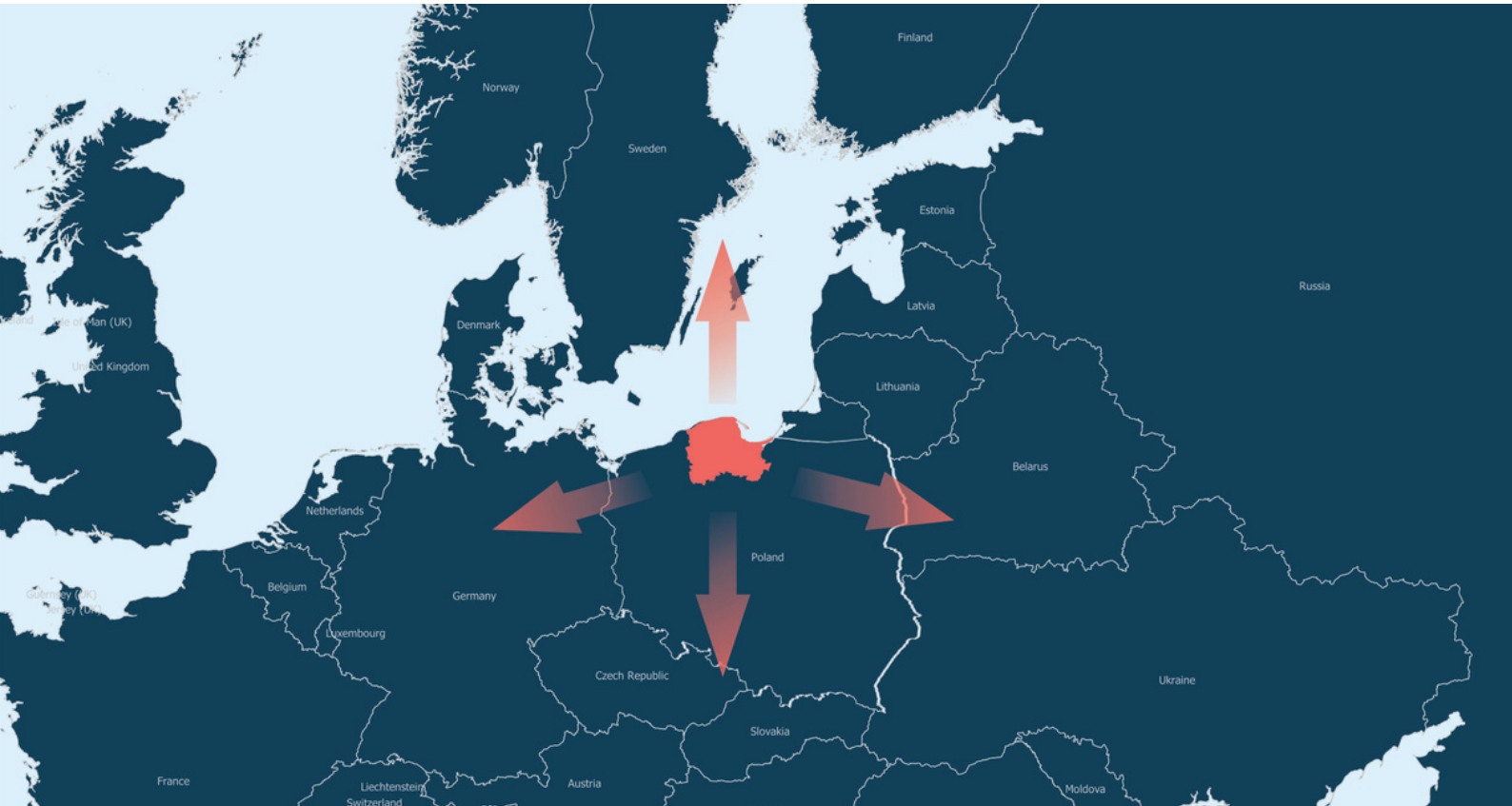


The automotive sector accounts for 10.5% of total industrial production sales [5]



Automotive manufacturers provide 7.4 % of total industry jobs [6]

POMERANIAN VOIVODESHIP

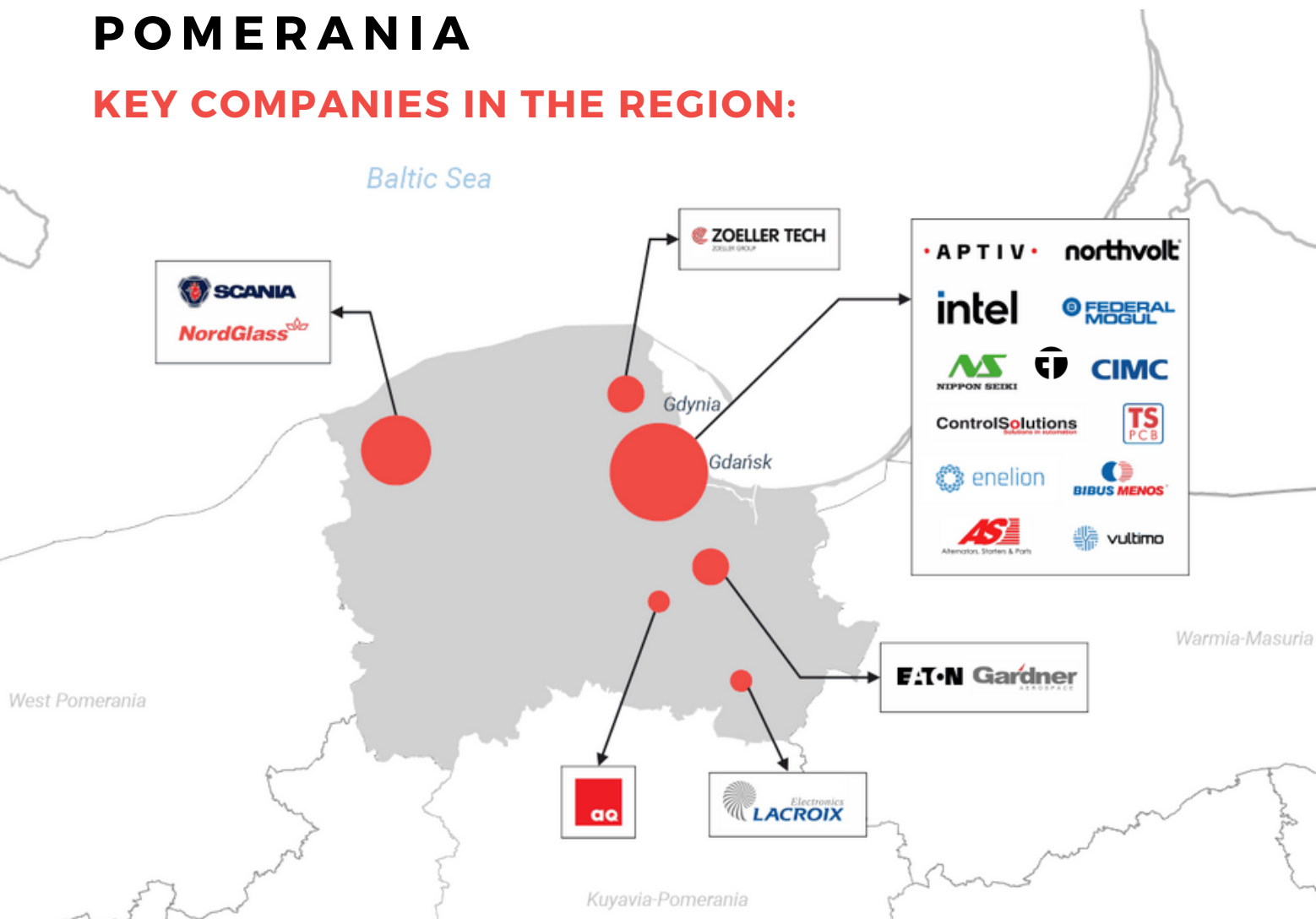


As a member of the European Union, Poland guarantees unlimited access to one of the largest markets in the world. At the same time, compared to western European countries, Poland still offers lower operating costs while maintaining high labour standards.

The Pomeranian Voivodeship is located in the northern part of Poland, on the coast of the Baltic Sea. In terms of the GDP growth dynamics, Pomerania is one of the fastest growing regions in Poland. In 2018, we were able to observe a 7% GDP growth dynamics, which gives one of the best results against the background of other Polish voivodeships [7]. The two largest cities in the Pomeranian Voivodeship (Gdańsk and Gdynia) have seaports that actively support the development of the industrial sector not only in Poland, but throughout Central and Eastern Europe.

THE AUTOMOTIVE SECTOR IN POMERANIA

KEY COMPANIES IN THE REGION:



21,300

NUMBER OF PERSONS EMPLOYED IN
IN THE AUTOMOTIVE SECTOR IN POMERANIA [8]

PRODUCTS PRODUCED IN THE REGION:



Lithium batteries
for e-cars



Chargers
for e-cars



Technological solutions,
cameras and
autonomous driving
computers



Trucks and
buses



Semi-trailers

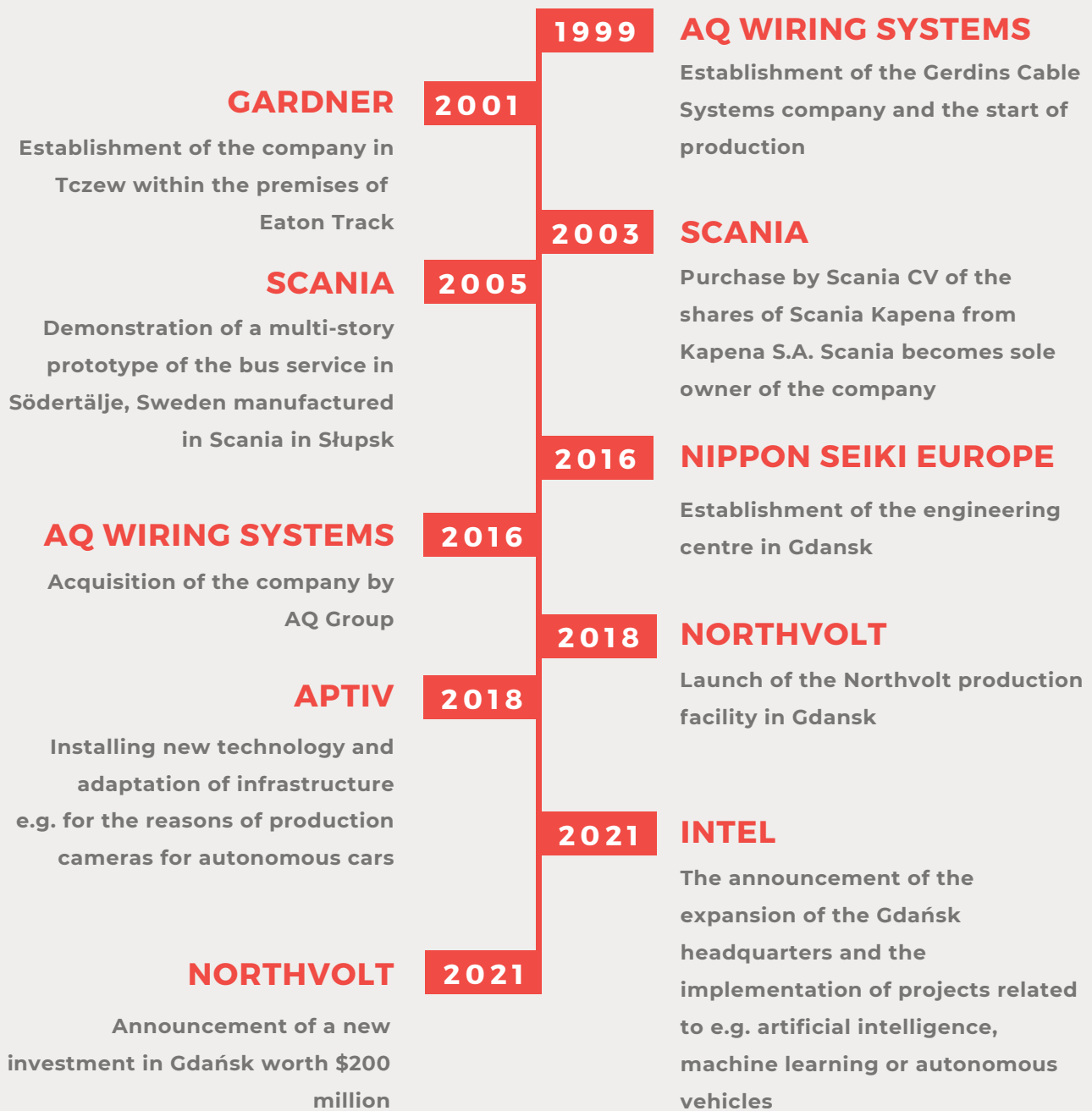


Garbage trucks

HISTORY OF THE AUTOMOTIVE SECTOR IN POMERANIA



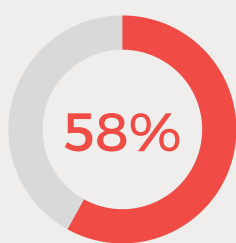
FOCUS ON AUTOMOTIVE SECTOR IN POMERANIA 2021



SURVEY OF POMERANIAN AUTOMOTIVE COMPANIES

In order to ensure that our report on the automotive sector in Pomerania contains as much up-to-date information as possible, we asked several key companies in the industry to provide us with answers to a set of questions about their activities. The study was conducted in the first quarter of 2021. The answers to the survey questions are presented in the individual chapters of this report.

When conducting the survey, we wanted to see how companies in the region assess the potential of the Pomeranian Voivodeship in terms of the development of the automotive sector, what advantages they see from their presence in the region and what challenges are associated with it.



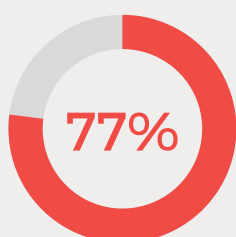
The strong point of the region indicated by the surveyed companies is access to qualified staff. It was one of the main factors determining the choice of investment location-indicated by 58% of companies. The high quality of life in Pomerania is equally valued, which allows for the relocation of high-class specialists.

Half of the surveyed companies listed Pomerania's location and logistics capabilities as an asset. One of the factors determining the choice of location in Pomerania was the proximity to customers or subcontractors. Respondents also pointed to the advantages of the coastal location and developed infrastructure.



The main challenges of the Pomeranian business, as indicated by the companies, are the small number of automotive plants in the region, the transfer of production workers to the tourism industry in the summer, the limited network of air connections, as well as the still little-recognized brand of the region on the international scene. For some companies, there was also a problem with the availability of employees.

More than half of the companies surveyed are considering new investments in Pomerania, including capacity expansion, as well as investments in R&D activities.



3/4 of the surveyed companies indicated the need to create an automotive cluster in Pomerania. Companies note that the tightening cooperation between companies, institutions and universities could have a positive impact on the development of the automotive sector in Pomerania and, in particular, increase the opportunities for new investments.



03. EDUCATION

Pomeranian universities provide constant access to highly qualified specialists for key sectors of the region's economy. In view of the needs of the automotive sector, the Gdańsk University of Technology and the vocational training system are particularly important as they prepare the future workforce for this sector.

HIGHER EDUCATION IN POMERANIA

The higher education system in Pomerania currently consists of 24 universities and 80.5 thousand students, of which almost 21 thousand entered the local labor market in 2020 [1].

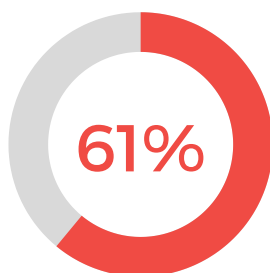


**NUMBER OF STUDENTS
AT HIGHER EDUCATION
INSTITUTIONS IN THE
REGION**



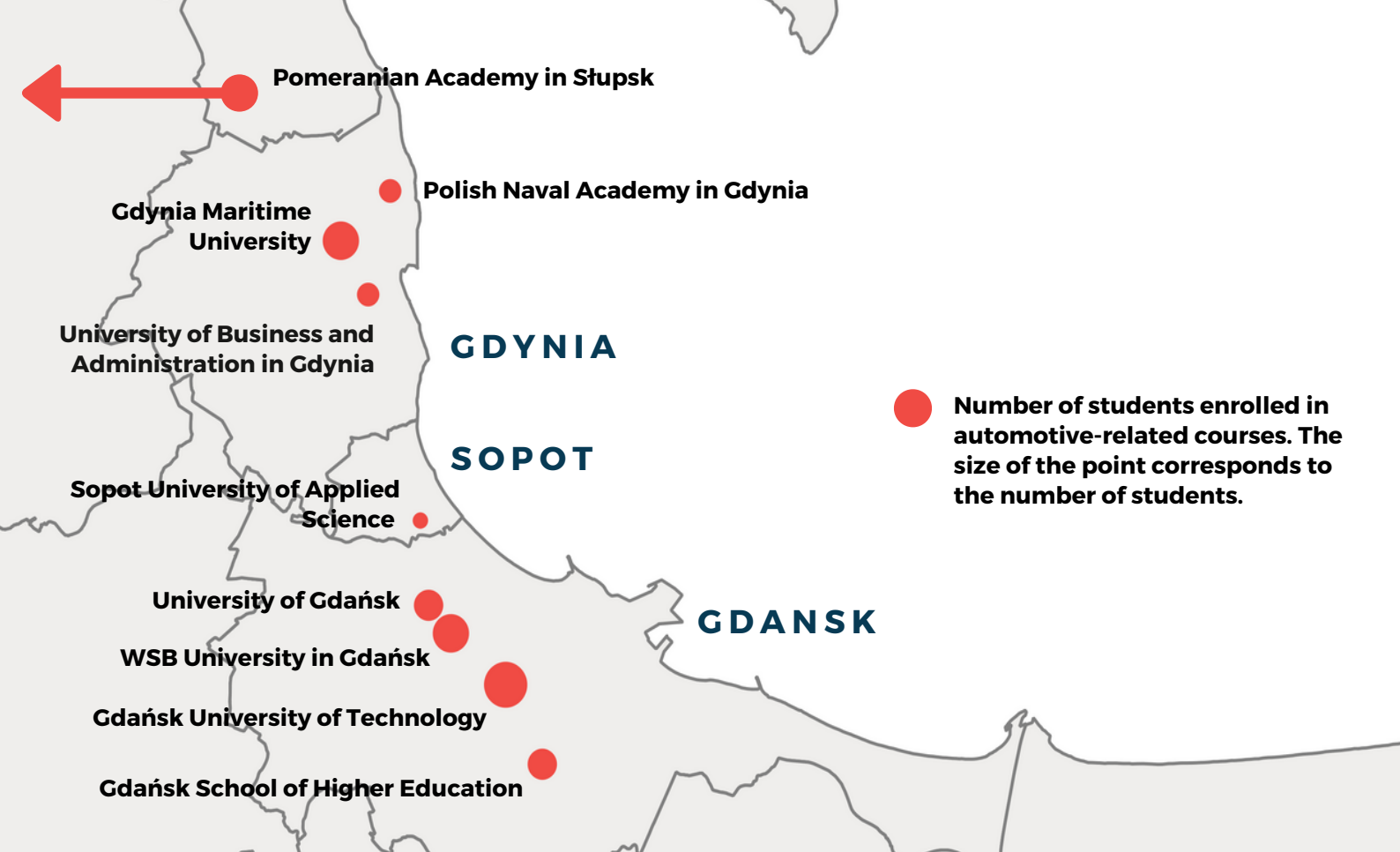
**NUMBER OF GRADUATES
FROM HIGHER
EDUCATION
INSTITUTIONS IN 2020**

9 universities in the region are offering fields of study related to the automotive sector, among which are the leading universities from the Tricity, including, as mentioned earlier, one of the best technical universities in Poland - the Gdańsk University of Technology.



More than 3/5 of the automotive companies surveyed by us cooperate or intend to cooperate with universities, for example, by organising student internships, using the expertise of university experts, conducting joint research projects, or being a partner of student organisations.





TALENT POOL IN THE AUTOMOTIVE SECTOR

16,000

STUDENTS IN TOTAL

3,500

GRADUATES PER YEAR

16 FIELDS OF STUDY AT 9 UNIVERSITIES:

- Automation and robotics
- Electronics and telecommunications
- Electrical engineering
- Technical physics
- Computer science
- Computer science and econometrics
- Material engineering
- Logistics
- Mechanics and machine building
- Mechatronics
- Nanotechnology
- Chemical technology
- Space and satellite technologies
- Transport
- Production management and engineering
- Engineering management

VOCATIONAL TRAINING IN POLAND

With the growth of interest in general education in Poland in the 1990s, which provided an opportunity to continue education at higher education institutions, the number of students at vocational schools decreased significantly.

In recent years, a number of reforms have been made to the vocational training model to make it more attractive to potential candidates and to match the requirements of the labour market and entrepreneurs. Currently, in Poland, about 831.5 thousand students are trained in the model of vocational education [2].

CHANGES IN VOCATIONAL TRAINING

NEW CLASSIFICATION OF PROFESSIONS

Modification of professional classifications, taking into account the division of professions into qualifications separately confirmed in the training process

Defining a new curriculum framework for vocational training

VOCATIONAL TRAINING REFORM

Increased subsidy for vocational training

Introduction of apprenticeships and compulsory traineeships for teachers

The possibility for schools to implement short courses

Compulsory vocational guidance in schools

Creating patron classes

2012

2016

DIALOGUE WITH STAKEHOLDERS

The boards of Special Economic Zones declare cooperation with the Ministry of Science and Higher Education in order to improve the quality of vocational education

More than 1000 employers and industry representatives participate in preparing curriculum changes

Statistics Poland prepares a tool for monitoring the demand for vocational school alumni

2019

TRADE SCHOOLS

To make the structure of education more flexible and to provide access to further education through the establishment of a vocational school of 1st and 2nd cycle

VOCATIONAL EDUCATION FOR THE REGION

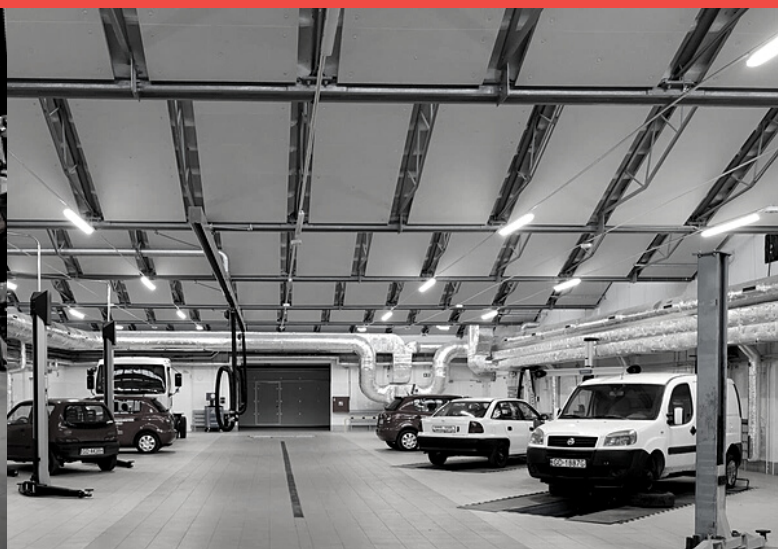
Local government projects are an important support for systemic changes in vocational education and training. In the case of the Pomeranian Voivodeship, it was a strategic initiative started by the Office of the Marshal of the Pomeranian Voivodeship entitled "Developing a network of vocational schools in the region." These activities – within the framework of the regional education policy implemented by the provincial government in the field of vocational education supported the Pomeranian vocational schools in accordance with the needs of key industries for the region (including transport, logistics, and automotive).

REGION OF PROFESSIONALS

A strategic project, implemented in the last financial perspective (i.e. RPO WP 2014-2020), with a total value of more than 380 million PLN (of which more than 300 million PLN of EU funding). The project included activities for:

- students (internships, scholarships, study visits with employers, extracurricular forms of vocational education, competitions),
- teachers/ instructors of practical training (internships with employers, professional development, e.g. postgraduate studies),
- schools (providing additional equipment for school laboratories, infrastructural expansion of schools).

An innovative country-wide educational dialogue was implemented, taking into account the opinions and needs of the main stakeholders. In the latest financial perspective, it is planned to continue the project with the updating of key sectors for vocational education in the region.



REGIONAL TALENT POOL- VOCATIONAL TRAINING

In the Pomeranian Voivodeship, there are currently just over 61,000 pupils in vocational schools (excluding post-secondary schools), half of them in occupations used in the automotive industry [3]. Around 30,000 students a year acquire vocational qualifications useful in the automotive sector (data for 2020).

Almost 2/5 of the companies we surveyed cooperate, or intend to cooperate with secondary schools in organising internships for the local youth.



Students
at vocational schools
in the region



Students developing
useful competences
for the automotive industry



Passed exams confirming
competences in the
automotive industry

A map of the Pomeranian Voivodeship showing its districts. A red area highlights the Tricity and neighbouring districts (wejherowski and kartuski). Other districts are shaded in various tones of grey.

The training of skills useful in the automotive industry is not evenly distributed throughout the region. The dominant centres of education in this direction are the Tricity and neighbouring districts: wejherowski and kartuski. Important centres are also: the city of Słupsk in the west of the region and the districts of chojnicki and starogardzki in the south.

POTENTIAL FOR THE AUTOMOTIVE SECTOR IN VOCATIONAL TRAINING*



*Number of pupils enrolled in particular industry in the region



04. LABOUR MARKET

In this chapter, in cooperation with Randstad, we study the availability of workers and wage rates in the Pomeranian labour market. Randstad is a leader in the HR industry in Poland. It has been operating on the Polish market for more than 20 years, providing services in the field of recruitment.



POMERANIAN LABOUR MARKET

Pomerania offers numerous jobs for many skilled professionals in the automotive sector. The importance of the region is underlined by the results of the study conducted by the recruitment company Antal entitled "The activity of specialists and managers on the labour market," which listed the Tricity as the second most attractive agglomeration in terms of relocation [1]. Based on the data provided by the international recruitment company Randstad, in this part of the chapter we will present the characteristics of the labour market in Pomerania in terms of the needs of the automotive sector.

Below, we present the monthly salaries in the sector in Pomerania, presented in the form of min-max range. These are gross amounts that do not take into account the additional contributions paid by the employer.

EARNINGS: BASIC POSITIONS

Assembly worker (with technical knowledge)	3 200 – 3 850 PLN
Assembly worker (no experience)	2 800 – 3 100 PLN
Welder	3 800 – 4 800 PLN
Packer	2 850 – 3 000 PLN
Electrician (qualified)	3 800 – 4 500 PLN
Production worker (unqualified)	2 800 – 3 100 PLN
Warehouse worker (with licenses)	3 200 – 3 850 PLN
Machine operator	3 400 – 4 000 PLN

EARNINGS: SUPPORT POSITIONS

Category manager	10 000 - 15 000 PLN
Purchasing specialist	5 000 - 8 000 PLN
Logistics specialist	5 000 - 7 500 PLN
Financial controller	8 500 - 12 000 PLN
Accountant	5 000 - 8 500 PLN

EARNINGS: ENGINEERING POSITIONS*

Constructor	4 500 - 8 000 PLN
Process engineer	4 500 - 8 000 PLN
Automation engineer	5 000 - 8 000 PLN
Electrical engineer	6 000 - 10 000 PLN
Production planner	5 500 - 7 500 PLN
Lean engineer	5 500 - 8 000 PLN
Maintenance engineer	5 500 - 7 500 PLN
Application engineer	6 000 - 11 000 PLN
Tooling Engineer	7 500 - 12 000 PLN
Quality Engineer (IATF)	6 500 - 8 000 PLN
R&D engineer	6 000 - 12 000 PLN
Reliability Engineer	7 500 - 10 000 PLN
AI test development engineer	12 000 - 18 000 PLN
Senior deep learning software engineer**	18 000 - 25 000 PLN
Machine learning engineer	12 000 - 16 000 PLN
Embedded systems developer	10 000 - 16 000 PLN
Production leader	6 500 - 10 000 PLN

*SPECIALIST LEVEL (2-3 YEARS OF EXPERIENCE)

** SENIOR ROLE (5 YEARS OF EXPERIENCE)

EARNINGS: MANAGERIAL POSITIONS

Managing director	23 000 - 35 000 PLN
Production manager	14 000 - 20 000 PLN
Quality manager	13 000 - 18 000 PLN
Logistics manager	13 000 - 18 000 PLN
Finance manager	15 000 - 25 000 PLN
HR manager	14 000 - 18 000 PLN
Technical manager	13 000 - 18 000 PLN

BENEFITS

In addition to basic salary, the benefits offered by the employer are becoming increasingly important for employees. Below are the standard and additional benefits offered to employees in the sector in Pomerania.

BENEFITS: BASIC POSITIONS

Standard:

- medical package
- sports card
- social benefit packages:
cinema tickets, gym,
swimming pool etc.

Additional:

- transfer or reimbursement of
travel expenses
- free transport
- holiday allowance
- financing of courses, allowances
qualification/ professional

BENEFITS: SPECIALIST AND MANAGERIAL POSITIONS

Standard:

- medical package
- sports card or return to sports
card, gifts Christmas
(vouchers, packages)
- social benefit packages -
cinema tickets, gym, to
swimming pool etc.
- additional insurance for life

Additional:

- transfer costs; or reimbursement
of travel expenses
- integration meetings
- holiday allowance
- medical office on site
- financing of courses, studies
languages, etc.
- school starter kit

INVESTMENT SIMULATION

In order to demonstrate the availability of employees from the automotive sector, Randstad conducted a simulation of the employment process for an exemplary investment from the sector. The number of people who will be employed in the project was established, and the simulation was carried out for four production sectors popular among investors in Pomerania: Tricity, Słupsk, Tczew, and Kwidzyn. For each of these locations, workers will be recruited from the "sourcing areas" within the assumed distance from the agglomeration.

ASSUMPTIONS:



employment -
basic positions



employment - specialist
and management
positions



area radius of inflows
for basic positions

AREAS OF INFLOW

Locations included in the "sourcing areas" for basic positions:

- SŁUPSK: Lębork, Wejherowo, Koszalin
- TCZEW: Starogard Gdański, Pruszcz, Elbląg, Malbork
- TRICITY: Tczew, Kościerzyna, Wejherowo, Pruszcz Gdański, Chwaszczyno, Rumia, Lębork
- KWIDZYN: Grudziądz, Malbork, Sztum, Starogard Gdański, Tczew

AVAILABILITY OF CANDIDATES

SPECIALIST POSITIONS

In the case of specialised positions (engineering, quality, supply chain, finance, and accounting) there is a high availability of candidates for each position in the Tricity, Tczew and Kwidzyn districts with assumed employment.

In the case of Słupsk, there is a moderate availability of candidates for positions such as: application engineer, reliability engineer, AI test development engineer, senior deep learning software engineer, and machine learning engineer. For other positions there is a large availability of candidates.

BASIC POSITIONS

The availability of candidates is much more diverse, when looking for employees for basic positions, which is due to the number of people employed for investment. With up to 50 vacancies for each of the key positions, there is a high availability of staff in each of the locations analysed. The diversity is evident when hiring more workers for a given position, as outlined on the next page.



FOCUS ON AUTOMOTIVE SECTOR IN POMERANIA 2021

● high availability
 ● medium availability
 ● low availability

	50-100 persons	100-200 persons	>200 persons
TRICITY			
Assembly worker**	●	●	●
Assembly worker*	●	●	●
Welder	●	●	●
Packer	●	●	●
Electrician**	●	●	●
Production worker*	●	●	●
Machine operator	●	●	●
TCZEW			
Assembly worker**	●	●	●
Assembly worker*	●	●	●
Welder	●	●	●
Packer	●	●	●
Electrician**	●	●	●
Production worker*	●	●	●
Machine operator	●	●	●

* no experience/qualifications

**with technical background/ qualifications

FOCUS ON AUTOMOTIVE SECTOR IN POMERANIA 2021

● high availability
 ● medium availability
 ● low availability

	50-100 persons	100-200 persons	>200 persons
KWIDZYN			
Assembly worker**	●	●	●
Assembly worker*	●	●	●
Welder	●	●	●
Packer	●	●	●
Electrician**	●	●	●
Production worker*	●	●	●
Machine operator	●	●	●
SŁUPSK			
Assembly worker**	●	●	●
Assembly worker*	●	●	●
Welder	●	●	●
Packer	●	●	●
Electrician**	●	●	●
Production worker*	●	●	●
Machine operator	●	●	●

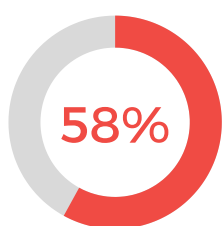
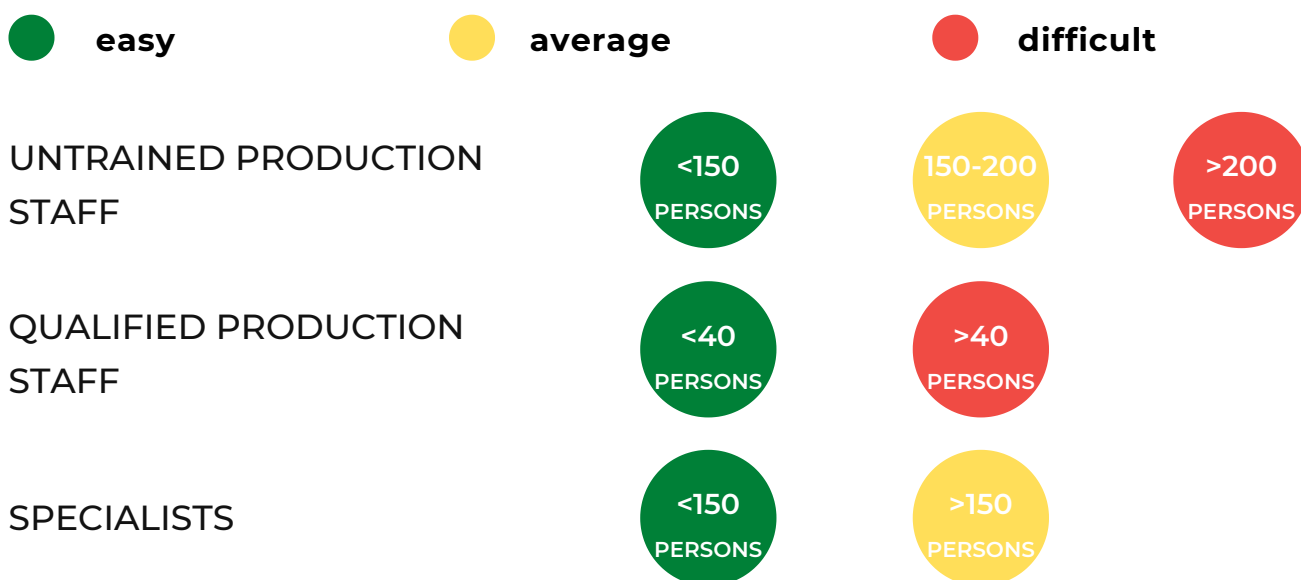
* no experience/ qualifications

**with technical background/ qualifications

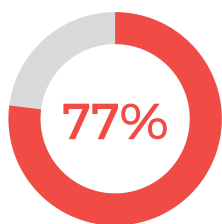
RECRUITMENT TIME SIMULATION

Data from Randstad allowed us to determine in what time frame it is possible to hire employees at investments in Pomerania.

Below is the situation in which a given number of employees would be recruited on a quarterly basis, and the level of difficulty in finding suitable candidates in this number in Pomerania.



Most of the companies we surveyed indicated that they assess the availability of employees on the Pomeranian labour market in a neutral way - neither good nor bad. 15% of companies assess the availability of employees negatively, in turn, 23% of companies positively.



More than 2/3 of the companies surveyed by us answered that they lack candidates for certain positions and are interested in supporting the recruitment of high-class specialists from other regions of the country and from abroad. Most often, companies indicate a lack of specialized people to work on production lines or engineers with a specific specialization/education.



05. TRENDS IN THE SECTOR AND THE POTENTIAL OF POMERANIA

In this chapter, we focus on three pillars on which the development of the automotive sector is and will be based: **IT technologies, electromobility, and the supply chain**. In terms of each of these pillars, we analyse the potential of the Pomeranian Voivodeship on the automotive market.

IT TECHNOLOGIES IN THE AUTOMOTIVE SECTOR

In terms of construction, modern cars do not differ that much from the vehicles produced at the beginning of the 20th century. They are based on the same principle of operation [1]. Although many technologies have only become widely used in recent decades (4WD, electromobility, etc.), their concept was developed decades ago. For many years, the development of the automotive sector was based primarily on improving the parameters and technical capabilities of vehicles and fastening the production process. The automotive companies had to continuously improve in order to meet changing legal requirements and deliver cars at a price and standard acceptable to customers.

The possibilities of competition in this respect, however, are increasingly limited. On the other hand, consumers started to pay more and more attention to other aspects like reducing costs, mobility on demand or improving the comfort of using vehicles [2]. All three aspects are related to innovations using IT solutions .

IT solutions in the automotive industry are used on an increasing scale. They allow companies from the sector to increase the number of customers and reduce costs [3].

IT SOLUTIONS IN

COMPANIES:

- tools for creating business analyses of customer needs
- tools for creating targeted marketing campaigns
- systems supporting business processes of a manufacturing company

IT SOLUTIONS IN

VEHICLES:

- solutions for efficient fuel consumption
- access to multimedia in cars via Bluetooth and Wi-Fi
- driver applications that allow monitoring of the driving efficiency

Information technologies have the potential to increase their impact on the sector even more. The results of particular companies in the sector may soon depend on how much funds they allocated to R&D in the field of software [4]. In order to remain competitive, automotive companies will be forced to spend a significant amount of money on technological innovations, which will automatically lead to limiting the amount spent on new products.

IT TRENDS IN THE SECTOR

CARSHARING

The development of carsharing will significantly reduce the cost of driving a car. In order to popularize the idea among clients, the automotive sector will need to create solutions to ensure mobility and availability of cars on-demand, and guarantee the companies offering such solutions a high degree of car use.

AUTONOMOUS DRIVING

In order to be able to offer their customers autonomous vehicles, it's essential that the companies invest in artificial intelligence, machine learning and neural networks, as well as equipment enabling the efficient operation of modern technology.

CONNECTIVITY

As a result of technology development, a single cars connection network will increase significantly, both between the car and other vehicles on the road and between the car and the road infrastructure itself (such as traffic lights). Car users will also have a chance to be constantly connected to the outside world while travelling thanks to the Internet, access to information, and multimedia.



33%

FORECAST OF CARSHARING POPULARITY IN 2030 (PERCENTAGE OF PASSED KM IN TOTAL)

The effects of carsharing popularity will be: higher average use of cars, shorter average life of cars, higher frequency of car replacement and reduction in the number of cars in use [4].



40%

FORECAST OF AUTONOMOUS VEHICLES POPULARITY IN 2030 (PERCENTAGE OF PASSED KM IN TOTAL)

The effects of the development of autonomous vehicles may be a lower number of repairs over the lifetime of a car, as a result of fewer road accidents [4].

The rapid development of innovations will be associated with more frequent updates of software and hardware in cars - it might be necessary even yearly. Manufacturers will have to revise the old business model based on earning through car production and sales and focus on earning opportunities connected with updates and services during vehicles lifecycle and providing services for carsharing. The need to adjust the business model used so far will be a consequence of raising awareness of the consumers of the impact that transport has on global warming, and their proficiency in using new technologies.

1.5 BLN \$

ANTICIPATED INCREASE IN THE SECTOR'S PROFIT POOL [5]

As a consequence of the technological progress and clients expectations, companies from the automotive sector will also have to compete with technology giants. In the coming years, the automotive market, whose main players have been fairly unchanged so far, will attract more and more interest among both innovative start-ups [5] and large corporations such as Google or Apple [6]. Automotive companies will have no choice but to develop their own software solutions, concerning autonomous driving and safety systems, as well as communication systems and access to information and entertainment in the car.



INNOVATIVE POMERANIA

Significant demand for innovative automotive solutions may lead the companies from the industry to search for partners in the IT and R&D sectors, with whom they will work together to create modern solutions. Therefore, regions, where these two sectors are highly developed, can be attractive areas for automotive investments.

In this respect, one of the top locations is Pomerania, in particular, the Tricity, which has the largest pool of talents in northern Poland [7].

25.5

THOUSAND

Developers
working in
Tricity

40

THOUSAND

Developers working
in the inflow area of
Tricity

3

THOUSAND
PER YEAR

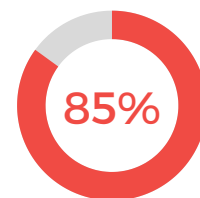
Graduates of IT
studies and
courses in Tricity

The qualifications of Pomeranian specialists are confirmed by the high positions that Poland occupies in the rankings:

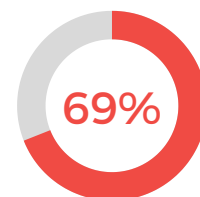
- 3rd place in the HackerRank ranking of countries with the best developers [8],
- 10th place in the PISA exam in the area of mathematics and 11th place in technical sciences [9],
- 16th place in the ranking of proficiency of the country inhabitants in English language according to the EF English Proficiency Index [10].

INNOVATIVE AUTOMOTIVE COMPANIES - POMERANIA

More than 4/5 of the Pomeranian companies that took part in our survey have been producing innovative devices /products for electric or autonomous cars for a long time, or plan to develop in this direction over the next few years.



Additionally, almost 70% of the surveyed companies from Pomerania cooperate with companies providing innovative technologies/ products, or would like to establish such cooperation in the near future.



The results of our survey show that companies operating in Pomerania are aware of the current trends in the industry and follow them, or plan to develop in these directions. The attractiveness of Pomerania for the development of the automotive sector in terms of modern IT technologies is also demonstrated by the presence of large international companies that have chosen the region for their headquarters. Among many other companies that provide innovative IT solution, in Pomerania operate companies such as Intel, Aptiv, and Nippon Seiki Europe.

INTEL

Intel Research and Development Centre in Gdansk employs about two and a half thousand people. It is the largest corporate R&D centre in Europe and the second largest in the world. At its headquarters in Gdansk, in cooperation with other companies, Intel develops e.g. solutions for autonomous vehicles [12] including:

- advanced driver assistance systems,
- operational safety solutions (accident prevention),
- vehicle sensor data processing technologies,
- in-vehicle computing and communication technologies to enable real-time decision-making.

APTIV

Aptiv Services factory in Gdansk currently employs about a thousand people. Aptiv focuses on delivering a safer, greener and optimally connected future based on the development of its technologies for vehicle manufacturers. The company provides active safety systems that help to minimize or completely eliminate human errors during driving, thereby limiting their consequences.

I think that thanks to the presence of [automotive] companies and the attractiveness of Pomerania (universities, quality of life, clean air, airport, A1 motorway, port), we have a chance to become even more present in the industry. However, let us remember that the automotive industry is, in addition to classical production, also software, which in today's cars is an increasingly important "component." In this respect, the Tricity has nothing to be ashamed of.

- Rafał Brejza, member of the Board of Aptiv Services Poland, director of Aptiv Gdansk, quoted from an interview for Dziennik Bałtycki [13]

The Gdańsk plant produces technologically advanced products supporting autonomous driving (cameras, on-board computers), radios, and control panels used in cars [14].

NIPPON SEIKI EUROPE

130

PLANNED EMPLOYMENT IN 2021-2022

1500

**SQUARE METRES OF RENTED SPACE IN
GDAŃSK**

The branch office of Nippon Seiki Europe in Gdańsk was established in 2016. In the Gdańsk office, the company employs mainly specialists in the field of specification, design, development, and testing of software for on-board information systems. The design and development activities in Gdańsk are carried out in cooperation with other engineering centres of Nippon Seiki group. It covers system design, software development, system testing and diagnostics, and electrical, optical and mechanical subsystem design [15].

SCIENCE PARKS

Pomerania provides a developed infrastructure for the implementation of innovative ideas. Space for development for more than 500 companies is provided by two science parks located in the Pomeranian Voivodeship:

- Gdańsk Science and Technology Park where 80 companies operate, including companies from the field of new technologies and startups. At their disposal are modern laboratories, Technological Incubator, Data Centre, and 3D Printing Centre [16].
- Pomeranian Science and Technology Park Gdynia - the largest such facility in Poland, which currently houses 250 companies. Within the Park, entrepreneurs can find, among others, the Design Centre, Startup Zone, laboratories, prototyping areas, and a conference centre [17].

ELECTRONICS

New initiatives on innovation in the automotive sector will increase the demand for electronic components. New developments in the area of autonomous driving and the shift towards electric-powered cars will require the use of growing number of electronic solutions.

33% OF THE WHOLE CAR COST IN THE FUTURE CAN BE THE COST OF THE ELECTRONIC ELEMENTS [18]

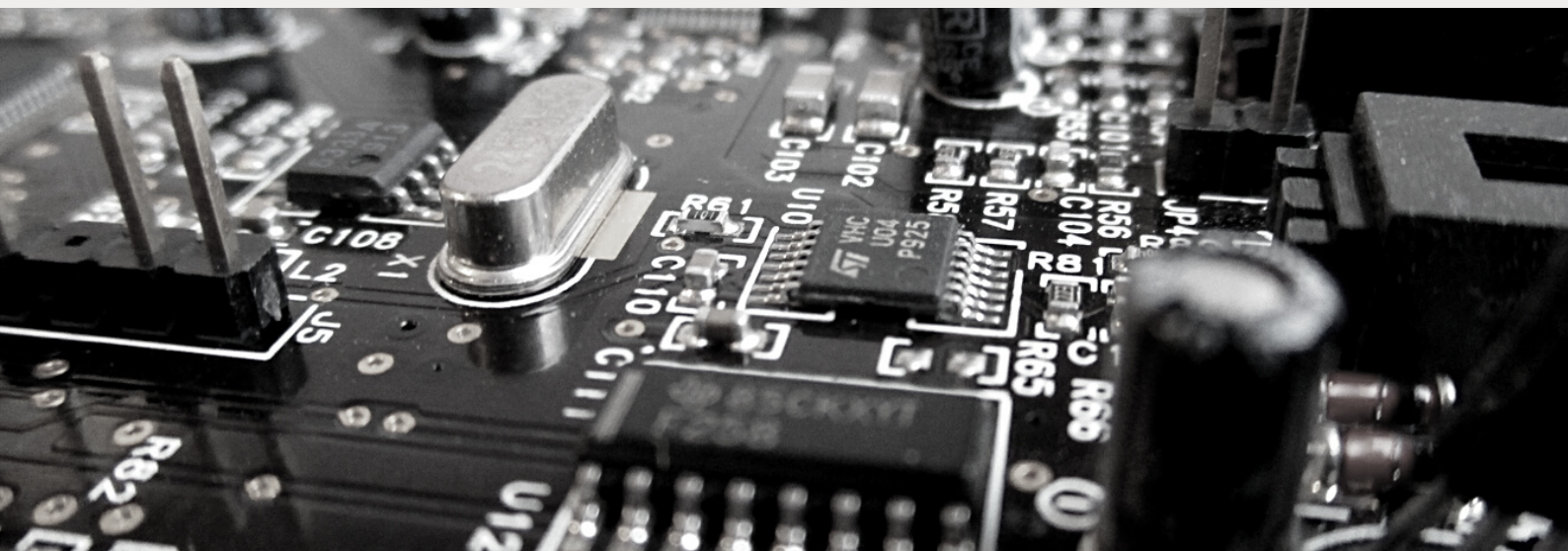
This is another reason why Pomerania is and will be an attractive place to invest for entities associated with the automotive sector. The Pomeranian Voivodeship is a leading centre of electronics production in Poland, where some of the largest global companies in the electronics industry are present [19].



Employees in the electronic sector in Pomerania



Growth of employment in the electronic industry in Pomerania during the last 5 years



ELECTRONIC INDUSTRY IN POMERANIA

LACROIX ELECTRONICS

- Service provider of Electronic Manufacturing Services
- Offers products for driving assistance, electric vehicles, drivetrain, visibility and safety systems
- Over 20 years of presence in Pomerania.
- Employment: 2,200+ people
- Plant in Kwidzyn - 13,600 sq m

AQ WIRING

- Production of cables for medical devices, agricultural machines and buses
- Over 20 years of presence in Pomerania
- Employment: 600+ jobs
- Clients are: Scania, Bombardier, Komatsu, Zoeller, Krone, Grimme and ABB
- Factory in Linowiec (Starogard Gdański): 7,000 sq m

FLEX

- Services in the field of design, engineering, production, supply chain and logistics
- Offers products such as grinders, car polishers, battery tools
- Almost 20-year presence in Pomerania
- Employment: 4,000+ people at the peak of the season
- Production complex in Tczew – approx. 70 000 sq m

JABIL

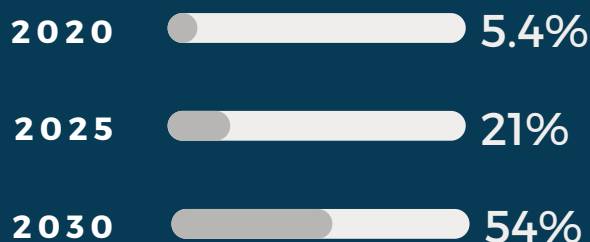
- Design and manufacture of electronic components and products such as 360 degree cameras, meters, POS terminals
- More than 25 years of presence in Pomerania
- Employment: 3,500 + people
- Plant in Kwidzyn – the second largest plant of the company in Europe

ELECTROMOBILITY

Despite the COVID-19 pandemic, electromobility is developing very dynamically. New legal standards related to the reduction of carbon dioxide emissions, combined with national policies supporting the sale of electric cars and multibillion-dollar investments by automotive companies, make battery systems one of the main pillars of Polish exports.

THE FUTURE IS TODAY

If the current trend continues, in 2030, the sales of electric cars will constitute 54% of total car sales in the EU [1].



In 2020, Europe was the largest market for electric cars in the world. In one year, 1.365 million electric cars were sold, which is 2 percent more than in China. By 2030, the European Union is expected to see a significant increase in the electrification of passenger cars, vans, buses and, to a lesser extent, lorries [2].

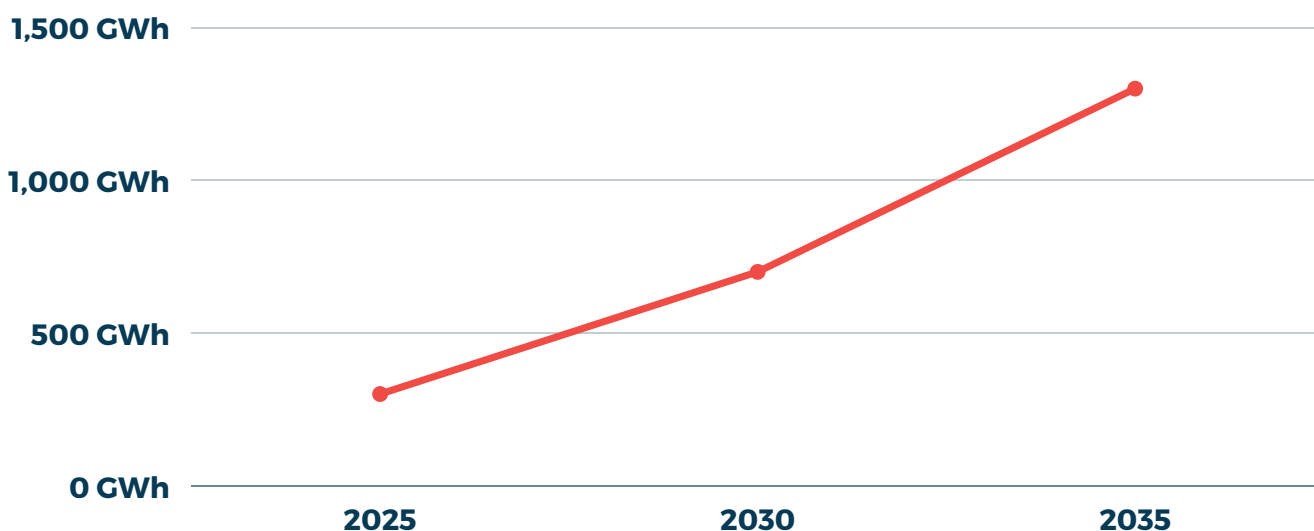


THE POTENTIAL OF ECOLOGY

As estimated by Transport and Environment organisation, the value of the global electric vehicle market in the period 2019-2027 will increase almost fivefold. Thus, by the end of this period, the market is expected to reach an estimated global value of more than \$ 800 billion. According to these projections, the cumulative annual growth rate (CAGR) for the period 2019-2027 will exceed 20% [3].



The graph shows the projected increase in battery demand in Europe until 2035 (GWh)



Source: own elaboration based on: Transport and Environment (2021)

The main factor behind this trend is the EU legislation setting CO2 emission standards for vehicle manufacturers, as well as the EU legislation setting minimum targets for Member States in the procurement of clean vehicles. The World Economic Forum estimates that global battery production should be increased 19-fold to accelerate the transition to a low-carbon economy. [4].

POLAND THE LEADER IN THE EXPORT OF CAR BATTERIES

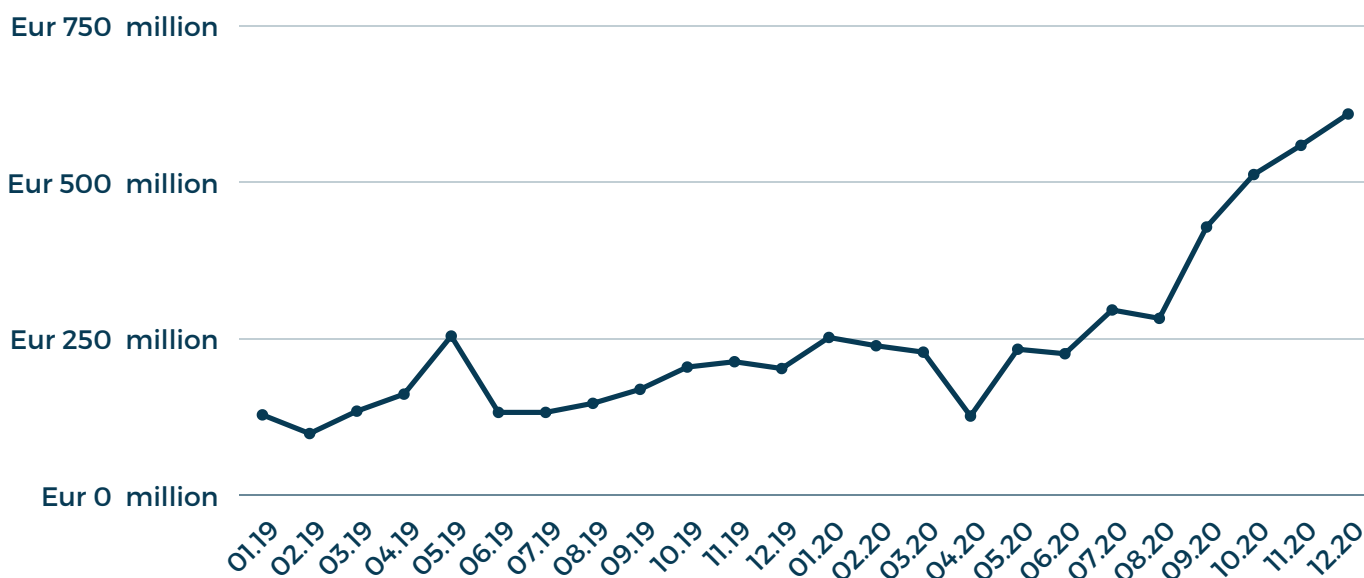
Poland skilfully uses the visible automotive trends and in a relatively short time managed to become the largest exporter of automotive batteries in the European Union.

EUR 3.99 BILLION

VALUE OF POLISH EXPORTS OF LITHIUM-ION BATTERIES IN 2020



List of products exported from Poland in 2020 covered more than 8500 items according to the most detailed CN (combined nomenclature) classification. The biggest increase in sales compared to the previous year was for lithium-ion batteries. The result of almost EUR 4 billion is twice the value of sales in 2019 [5].



Export value of lithium-ion batteries from Poland (2019-2020).
Source: own compilation based on Eurostat data

FOCUS ON AUTOMOTIVE SECTOR IN POMERANIA 2021

Poland proved to be an excellent location for the production of components and batteries for e-cars. This is mainly determined by the proximity of the market and the competitive price of electricity, but also by access to skilled workers and a good investment climate. The number of investments and reinvestments of companies in the electromobility sector is increasing year by year. More and more international brands see the potential of Pomerania, as evidenced by the investment of the Swedish company Northvolt.

The Polish plant of the Korean company LG Energy Solutions is the largest factory in Europe producing batteries for e-cars. The plants located in Poland are expected to reach the production capacity of 100 GWh batteries per year. LG Energy Solutions is already a key part of the European battery supply chain for electric vehicles [6].

The new Mercedes-Benz Manufacturing Poland plant in Jawor is also an important point on the map of the Polish electromobility sector. The division produces four-cylinder petrol and diesel engines and electric batteries for Mercedes-Benz passenger cars. The modern factory is a combination of the highest standards of the automotive industry with the idea of "Industry 4.0". [7].

+50.7 %

**WAS THE ANNUAL GROWTH OF POLISH EXPORTS
ELECTRIC BUSES IN 2020.**



According to the Polish economic institute, despite the pandemic situation in 2020, Poland recorded the highest level of export of electric buses in Europe. The most important manufacturers of this type of vehicles are Solaris in Bolechów near Poznań (Solaris Urbino Electric), Volvo in Wrocław (Volvo 7900 Electric) and MAN Truck & Bus in Starachowice (MAN Lion's City E). The Polish company Solaris is the leader in this field. According to GUS, during the period I-XI 2020 Polish manufacturers delivered to foreign customers electric buses worth 213.4 million euros, which means an increase of 50.7 percent counting from year to year. [8].

THE POTENTIAL OF POMERANIA

Many assets of the Pomeranian region are becoming increasingly noticeable among international companies. Due to its great potential, the region may soon become another key area on the map of Polish electromobility.

NORTHVOLT

In 2022, the Northvolt plant will start operating in Gdańsk. This is one of the most important recent investments in the industry nationwide. The factory will specialise in battery modules and energy storage facilities that will enable greater and better use of renewable energy sources. Complete battery systems will be produced on the basis of lithium-ion cells supplied from the Northvolt Ett Gigafactory in Skellefteå in northern Sweden and other components supplied by selected manufacturers. The new plant will be built on the territory of the Pomeranian investment centre, near the Port of Gdańsk.

THE NEW INVESTMENT OF NORTHVOLT IN GDAŃSK WORTH \$ 200 MILLION INVOLVES THE CONSTRUCTION OF A 50 THOUSAND SQUARE METRES BIG FACTORY THAT WILL CREATE 500 NEW JOBS.



ENELION

Since 2016, Enelion has been operating in Gdańsk, producing chargers for electric cars and ecosystem management software for electromobility. The company has already delivered several thousand chargers to customers at home and abroad, and in March 2021. was producing 400 chargers per month. Due to Enelion's potential, international and domestic players in the energy sector quickly established cooperation with the company. On the Polish market Enelion cooperates with, among others, PGE, Tauron, and Energa [9].

MARINE CHARACTER

ELECTROMOBILITY NOT ONLY IN THE AUTOMOTIVE INDUSTRY

The coastal location of the region is of particular importance for the development of electromobility in the maritime sector. The demand for electric propulsion is also largely reflected in maritime transport. Northern Europe has seriously focused on the implementation of green solutions in the shipping industry. Norway is a strong leader in this process. Finland, in turn, plans to launch a hybrid ferry between the ports of the Baltic Sea in 2021 [10].

The Pomeranian companies related to the broadly understood maritime industry have been demonstrating their focus on innovation for several years now. In February 2021, Remontowa Shipbuilding handed over the last of four modern battery-powered double-sided hybrid ferries designed to minimize energy consumption. It has also previously built hybrid ferries for London. Five years ago, also in Gdańsk, Aluship company built the world's first car ferry powered solely by electricity stored in batteries, which today operates the Lavik-Oppedal connection in Norway [11].

Hybrid ferries are also being built by Gdynia shipyard Crist. Sunreef Yachts also offers eco-friendly solutions. Another example is the Gdańsk-based company Marine Works, which introduced a hybrid drive for yachts to its offer a few years ago. In 2017, the innovative solution of Marine Works was awarded the prize of the Polish Chamber of Yacht Industry and Water Sports for the best product of the fair in its category [11, 12].



GREEN ENERGY

It is assumed that the more widespread use of electric vehicles will reduce surface greenhouse gas emissions and contribute to a significant reduction in harmful substances emissions from road transport. In order to achieve this, it is necessary to develop not only electromobility itself and related infrastructure, but also the sector of alternative energy sources. The Pomeranian Voivodeship is a region where the implementation of "green solutions" is a priority of energy policy.

Pomerania is one of the leading RES energy producers in Poland. They account for more than 50% of the total energy production in the region. In 2019, the largest share of renewable electricity production in Pomerania was accounted for by wind farms (they generate more than 90% of "green" electricity). The share of hydroelectric power stations does not exceed 4%, and other sources account for about 4% of the energy produced [13].

The largest onshore wind farms in the Pomeranian Voivodeship are located in the vicinity of Pelplin, Nowy Staw, Kopaniewo, Wick, and Zajęczków. Moreover, Poland's Energy Policy 2040 envisages the connection of offshore wind farms with a total capacity of more than 11 GW. The PGE, Polenergia, RWE and PKN Orlen projects are already entering the implementation phase [13].

Pomerania also focuses on innovation in another promising area of green energy - hydrogen technologies. It is in this region that the first and only Hydrogen Technology Cluster of companies and institutions interested in the development of this field in the country was established. As part of the cluster plans, was presented the project of Pomeranian Hydrogen Valley which assumes an increase in the share of hydrogen in regional transport. Gdansk, Gdynia, Tczew, and Wejherowo are already working on the "hydrogenation" of their bus fleets [14]. The first hydrogen refuelling station is expected to appear at Lotos in Gdańsk later this year.



SHORTENING THE SUPPLY CHAIN



The results of the "Global Supply Chain Survey in Search of Post-COVID-19 Resilience" published in December 2020 by Euler Hermes and Allianz SE, showed how much the COVID-19 pandemic has disrupted global supply chains. The survey was conducted among high-level executives in 1,181 companies in the UK, France, Germany, Italy and the US. As many as 94% of respondents reported disruptions in their supply chains due to the COVID-19 pandemic [1].

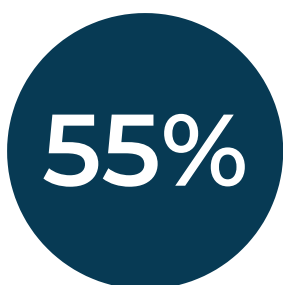
FOCUS ON AUTOMOTIVE SECTOR IN POMERANIA 2021

In June 2020, KPMG together with the Polish Association of Automotive Industry conducted a survey, which also included a question about the situation related to the supply chain among Polish companies in the automotive industry - "Barometer of Moods of Managers of Automotive Companies." Among the surveyed producers and distributors, supply chain disruptions were confirmed by 88% of respondents [2].

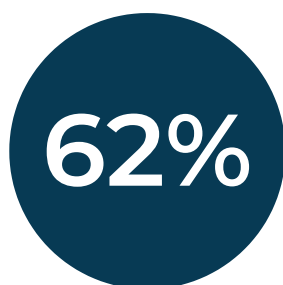
The shutdown of factories and production stoppages in Asian countries, as well as the closing of borders between countries, created a huge problem in the flow of goods and negatively affected the financial liquidity of many companies. Manufacturers around the world base their production on parts from China, which have ceased to be manufactured as a result of factory closures. The problems resulting from the COVID-19 pandemic have highlighted how unstable global supply chains can be, and failure of one link can potentially cause widespread disruption. These challenges can significantly accelerate the trend towards local suppliers that have been observed in recent years.

This situation creates a great opportunity for new investments in the automotive sector and the development of selected regions in Europe.

According to the Euler Hermes survey:



companies consider search for new suppliers within the next 6 to 12 months



companies consider search for new suppliers in long term perspective



companies from the automotive sector considers transferring manufacture to other countries [3]

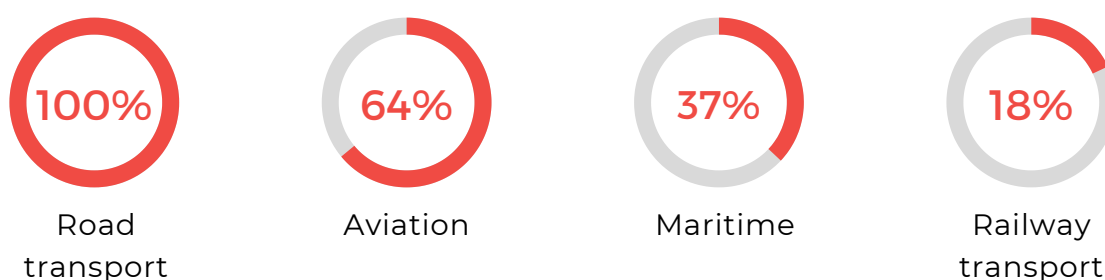
POMERANIA AT THE CROSSING OF INTERNATIONAL TRANSPORT ROUTES

The Pomeranian Voivodeship is a perfectly located Polish coastal region. The dynamically developing sea ports and airport, as well as the region's increasing road accessibility, allow for the maximum use of the possibilities of intermodal transport. Additionally, the growing logistic base enables the development of international exchange and attracts foreign investors. Another huge competitive advantage is the location of the region in the very centre of Europe and the proximity of world leaders in the automotive industry.

SUPPLY CHAIN OF POMERANIAN COMPANIES EXPORT DIRECTIONS - BASED ON INVEST IN POMERANIA RESEARCH



The vast majority of companies surveyed (excluding IT companies) selects road transport and intermodal connections, in particular road and air. Some of the largest companies use sea connections, which are offered by the two largest Polish ports located in Gdańsk and Gdynia. Rail connections are by far the least popular. The chart presented below shows the use of means of transport in the supply chain by the surveyed Pomeranian companies:





TOP 3

"MOST VALUABLE CAR BRANDS" WITHIN 500 KM FROM POMERANIA

Factories of world leaders in car production are located within a radius of 500 kilometres from the Pomeranian Voivodeship. Among them, the top 3 companies in the "10 Most Valuable Car Brands" ranking: Toyota, Daimler, Volkswagen, as well as Tesla and BMW, are also present in the ranking [4]. Due to the well-developed road infrastructure, transport within a radius of 500 km does not exceed 7 hours.

TESLA BERLIN GIGAFACTORY


At the western border of Germany Tesla is building a Gigafactory Berlin-Brandenburg. It will be the world's most advanced plant producing electric vehicles [5].

Gdańsk - Berlin
6 hours 



VOLKSWAGEN POLAND


Volkswagen, whose factories are located near Poznań, is currently the largest car manufacturer in Poland. In 2020, 207,610 delivery trucks (including electric vehicles) left the plant [6].

Gdańsk - Poznań
3,5 hours 



TOYOTA POLAND

The Polish factory of Toyota Motor Manufacturing Poland Sp. z o.o. in Wałbrzych and Jelcz-Laskowice is one of 8 Toyota plants in Europe and the second involved in the production of engines and gearboxes. In April 2021, the production of an electric transmission for low-emission electric hybrid drives was launched in Wałbrzych [7].

Gdańsk - Wałbrzych
6 godzin 



DAIMLER

Daimler's oldest production facility is located in Berlin, where high-tech components with CO2 reduction technologies are produced. In 2018 in Jaworz, Daimler opened the first Mercedes-Benz engine factory in Poland [8].

Gdańsk - Berlin/Jawor
6 godzin 



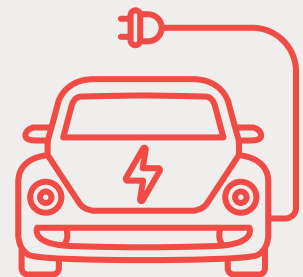
GERMANY - THE MAIN CONSUMER OF AUTOMOTIVE PRODUCTS FROM POLAND

The German automotive market is number 1 in Europe in terms of both production and sale of cars. In 2019, German manufacturers released 16 million new vehicles to the market. German companies also dominate in the production of highly innovative products and solutions for the automotive sector [9]. Poland is one of the 4 main European supply markets for products imported by Germany. This means that German manufacturers often use components produced in our country and invest in Poland.

31.7%

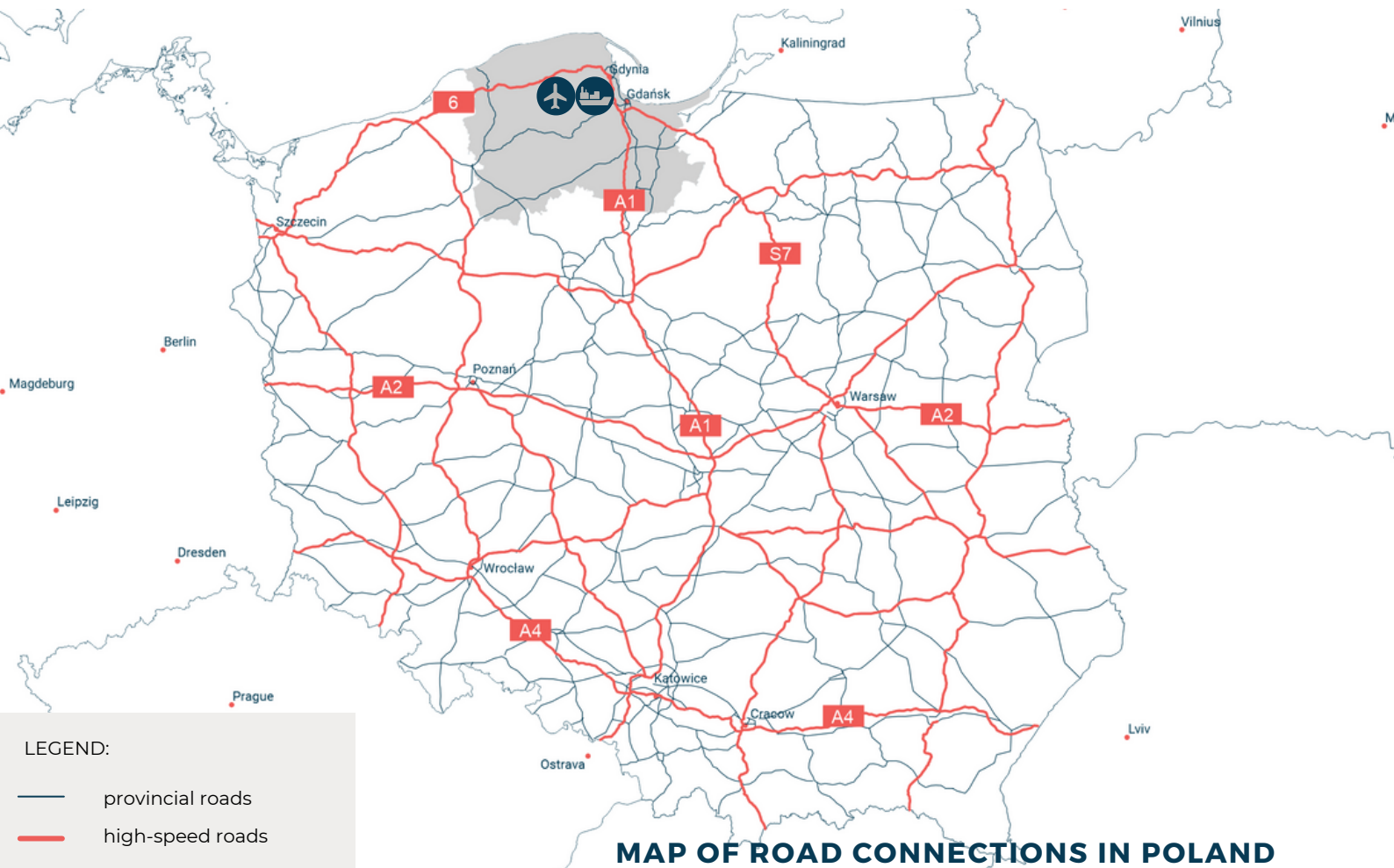
SHARE OF AUTOMOTIVE PRODUCTS EXPORTED FROM POLAND TO GERMANY IN 2020 [10]

Germany is also a leader in Europe and the second country in the world when it comes to registering electric cars. Only in 2020, 398,000 electric vehicles and plug-in hybrids appeared on German roads.



The increase in German production of electric cars contributed to the large change in the geographical structure of Polish exports of batteries. While Austria was the most important export destination in 2019, in 2020 the vast majority of the increase in battery exports was absorbed by German factories (70%). Since July 2020, Poland is the most important supplier of batteries to Germany. It was then that the value of German import of Polish batteries for the first time exceeded the value of import from China. At the end of 2020, the value of import from Poland was already greater than the then value of supplies from China and Korea in total [11]. The main factor influencing such extensive cooperation between Poland and Germany is close distance, but also high standards of work and quality of services.

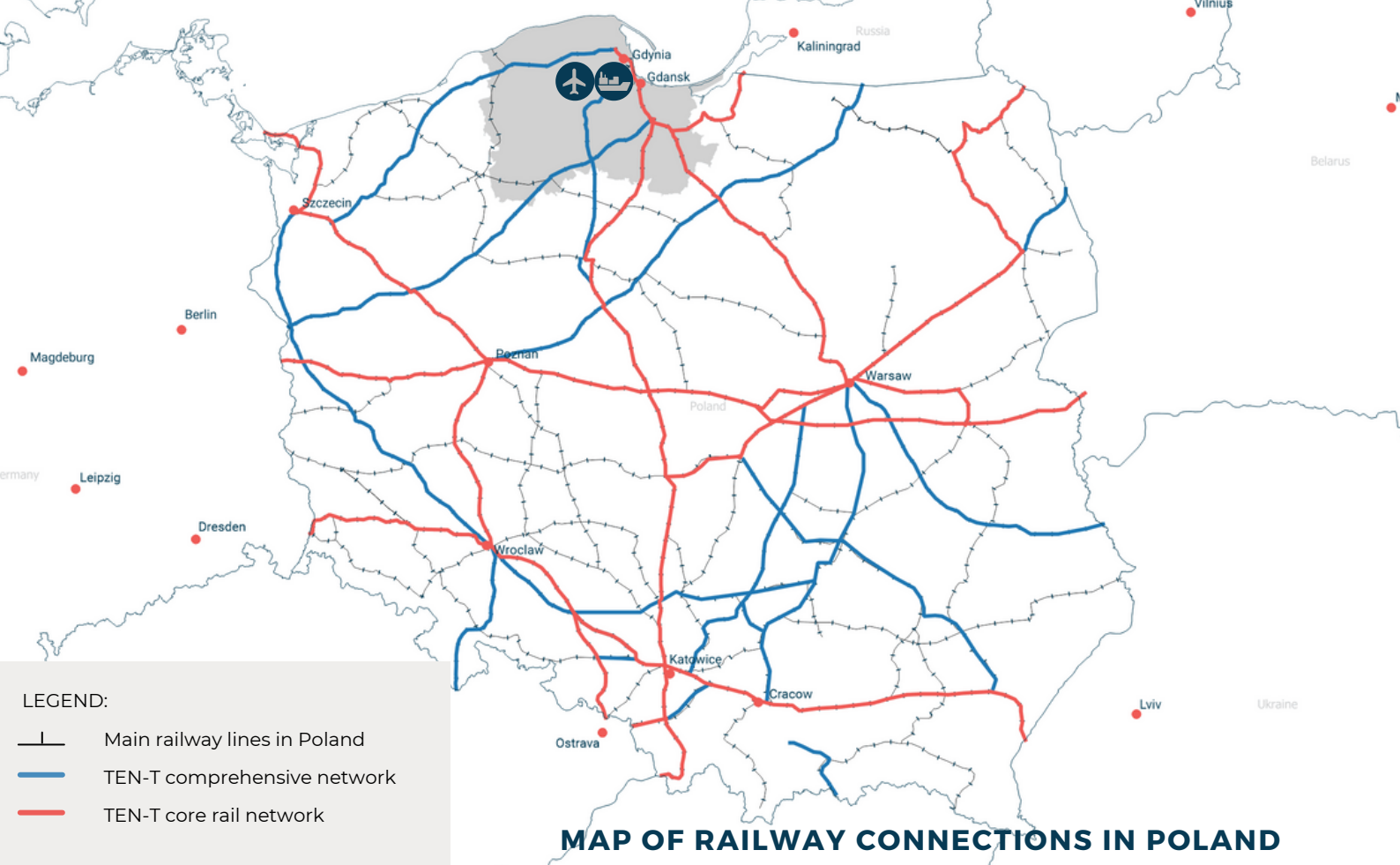
ROAD AND RAIL TRANSPORT KEY TO THE GERMAN MARKET



The S6 expressway connects Tricity with Berlin (on the Polish-German border it connects with the A11 motorway). According to the National Road Construction Plan until 2023, the construction of the remaining sections of the route is one of the top priority road investments in the country [12].

Thanks to the planned modernization of the nearly 380-kilometre section of the route, the travel time from the Tricity to the western border will be reduced to only 3-4 hours.

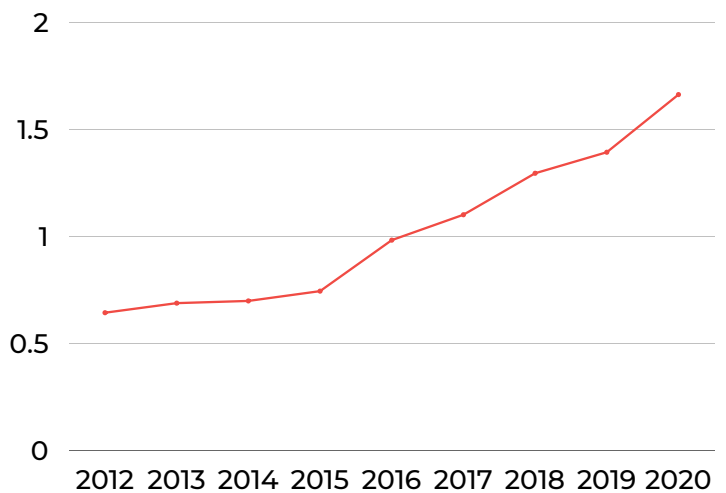
Another important road link is the A1 motorway, which connects the Tricity with the southern border of the country. The A1 motorway is also connected with the A2 motorway, which also leads directly to the western border of the country. One of the most important road investments in recent years for the Pomeranian Voivodeship was the construction of the S7 expressway. Thanks to this route, the journey from the Tricity to Warsaw takes only 3.5 hours.



INTERMODAL RAIL TRANSPORT POTENTIAL

Despite the fact that the transport of goods in Poland in 2020 decreased by 6% compared to 2019, intermodal rail transport has recorded a huge increase in recent years. Currently, over 3 times more TEU is transported by rail than in 2012, which indicates the great potential and development of combined transport, including transit. Polish ports are an important point for cargo in transit for the purpose, among others, mills, factories, car manufacturers or replacement cargo for the Czech Republic, Slovakia and Hungary.

One of the most important TEN-T transport corridors, the Baltic-Adriatic Sea, runs through the Pomeranian Voivodeship. PKP Cargo has the largest share in intermodal transport. It accounts for 35% of all traffic. The list of carriers includes as many as 22 companies, and the list is growing every year [13].



TEU number in intermodal rail transport [MILLION TEU]
Source: Own study based on data from the Office of Rail Transport

ROAD AND RAIL CONNECTIONS TO THE PORT OF GDAŃSK



Source: <https://www.portgdansk.pl/>

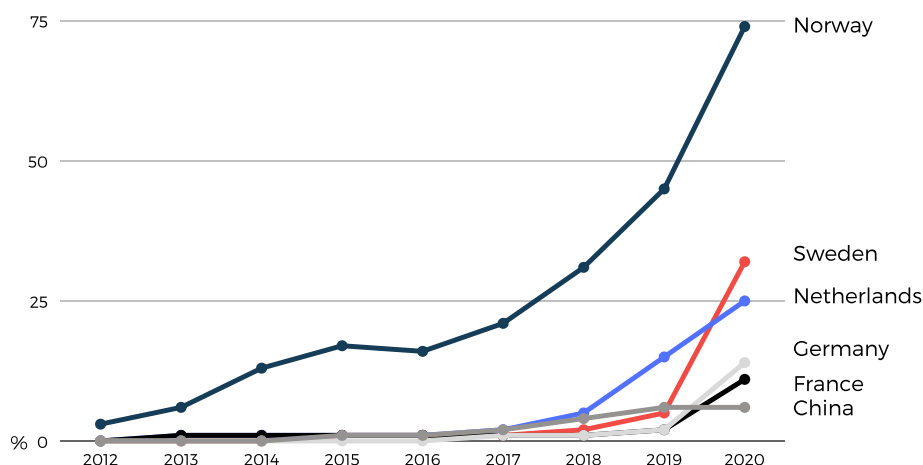
AS IMPORTANT AS INTERCITY CONNECTIONS IS THE ROAD INFRASTRUCTURE LEADING TO THE TRICITY SEAPORTS.

The Port of Gdańsk is one of the most important points on the logistic map of the world and one of the key links of the Trans-European Transport Corridor No. VI. It is also the most accessible port in Poland from the land side. The port of Gdańsk has a direct connection with the city's ring road and further with the A1 motorway, which connects Gdańsk with the European motorway network. Thanks to the completed road and rail investments, the delivery of cargo from any waterfront to the network of expressways and highways takes only a few minutes. This location guarantees efficient distribution of goods throughout the country and Europe [14].

NORDIC COUNTRIES WITHIN REACH OF POMERANIA

THE NORDICS - EV MARKET LEADER

Despite the COVID-19 pandemic, in 2020 Europe has taken a giant step towards electric cars. According to the report by McKinsey & Co, the so far dominant markets for EVs (China and the US) are giving way to Europe in terms of the dynamics of sales of new electric cars, and Norway is the undisputed leader in this respect [15]. Nordic countries - Sweden and Finland are also in the lead. The main impulse for the development of electromobility in Nordic region was the policy guaranteeing numerous benefits for the use of electric cars.



Market share of plug-in vehicles in 7 selected countries 2012-2020
Source: own elaboration based on CleanTechnica data

EXPORT TO NORDIC COUNTRIES

In 2020, 7% of Polish exports of automotive sector products were directed to the Nordic countries. [16].



AIR AND MARITIME TRANSPORT KEY TO NORDIC MARKET



TOTAL NUMBER OF CONNECTIONS FROM GDAŃSK TO EUROPEAN CITIES

HIGHEST NUMBER OF DIRECT CONNECTIONS WITH NORDIC CITIES IN POLAND

NUMBER OF COUNTRIES WITH DIRECT AIR CONNECTION WITH GDAŃSK [17]

The presented data relate to 2019, before the outbreak of the COVID-19 pandemic. Until 2019, each year, the airport in Gdańsk recorded a steady increase in the number of passengers served. Recent restrictions of travel had a negative impact on all airports in the world.



CARGO TRANSPORTATION IN 2020

7,028 tons
+2,0%

In 2020, the Gdańsk Airport reached a record value of carriage of goods [18].

In 2019, 9% of all cargo handled at the Gdańsk Airport was transported by passenger connections. In 2020, it was 4% [19].

The Gdańsk Airport handles approximately 7% of cargo transport in Poland and is the third largest centre in the country in terms of air cargo transport. At the Gdańsk Airport, there operate approximately 20 specialized shipping companies and customs agencies engaged in cargo carriage. The largest international courier companies have their headquarters here: DHL, Fedex, and TNT. DHL has a distribution centre for the whole of Northern Poland at the airport in Gdańsk. The network of regular connections reaches countries around the world, and numerous office centers and warehouses allow for a fast and efficient shipping process.

Due to increasing number of CARGO parcels handled every year at the Gdańsk airport, and further expected growth, the Gdansk Lech Walesa Airport is constantly implementing new investments in order to improve the quality of freight forwarding services [20].



GDAŃSK: A BALTIC PORT HUB



In the Pomeranian Voivodeship, there are two thriving seaports in Gdańsk and Gdynia. Their presence is an important asset for the development of electromobility in Poland and Europe. The location of Pomerania in the basin of the Baltic Sea has a very positive impact on the optimisation of the supply chain and on economic relations.

**2.5
MILLIONS**

**PORT OF GDAŃSK, TOGETHER WITH PORT OF GDYNIA,
HANDLE THE LARGEST NUMBER OF GOODS COUNTED IN
TEU IN THE WHOLE BALTIC SEA.**

Thanks to the developed infrastructure and network of connections, the Port of Gdańsk is a transport hub in the Baltic Sea basin. A dense network of shipping (feeder) connections allows for regular sea deliveries to Scandinavian countries. This is important because the Port of Gdańsk is the furthest east Baltic port that regularly handles container ships with a capacity of over 24 thousand TEU. Additionally, ships from China call at the Port of Gdańsk twice a week. The feeder network also allows sea access to ports located in the North Sea [21].

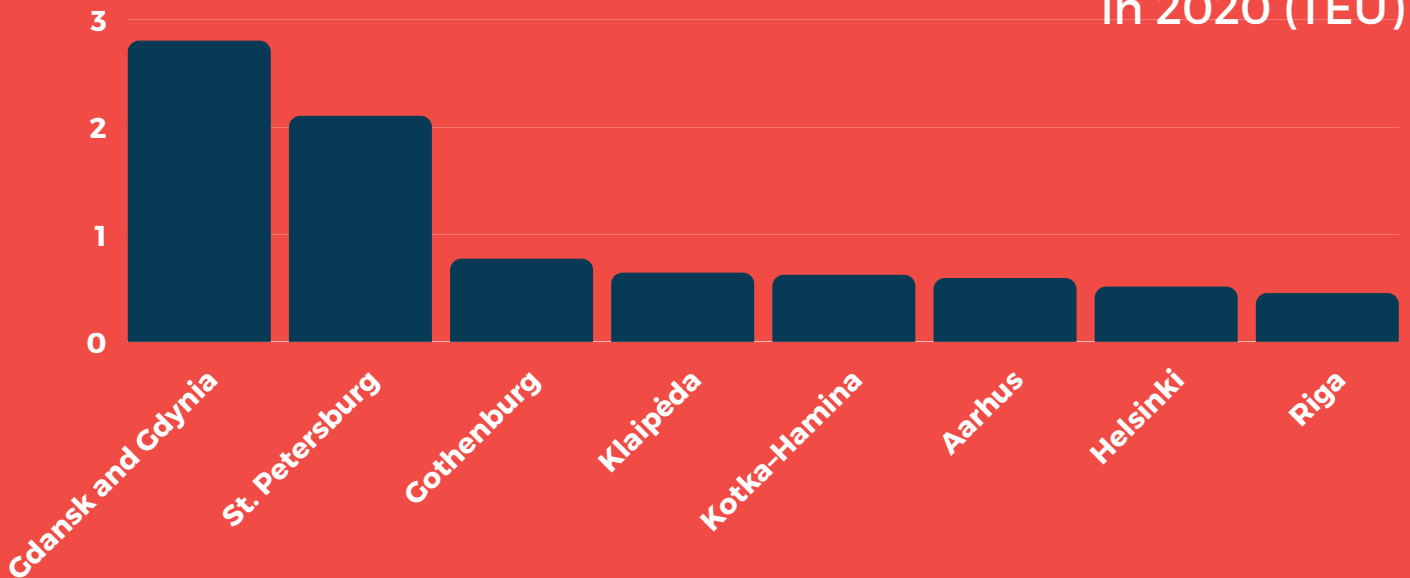
FOCUS ON AUTOMOTIVE SECTOR IN POMERANIA 2021

MAP OF CONTAINER AND RORO CONNECTIONS FROM GDANSK TO PORTS IN NORTHERN EUROPE



million TEU

Baltic container ports by transshipments in 2020 (TEU)



Source: own elaboration based on statistics of each port, 2020

PORT OF GDAŃSK - THE LEADER OF CAR TRANSHIPMENT BETWEEN THE CEE REGION AND THE GREAT BRITAIN

Year by year, the Port of Gdańsk is becoming one of the most important passenger car handling points. About 60% of all transhipments are cars exported to the UK. The main brands that are directed to the Islands by the Port of Gdańsk are Kia and Hyundai. Both producers resigned from the existing reloading ports in the German Cuxhaven and Belgian Zeebrugge in favour of the Port of Gdańsk [22].

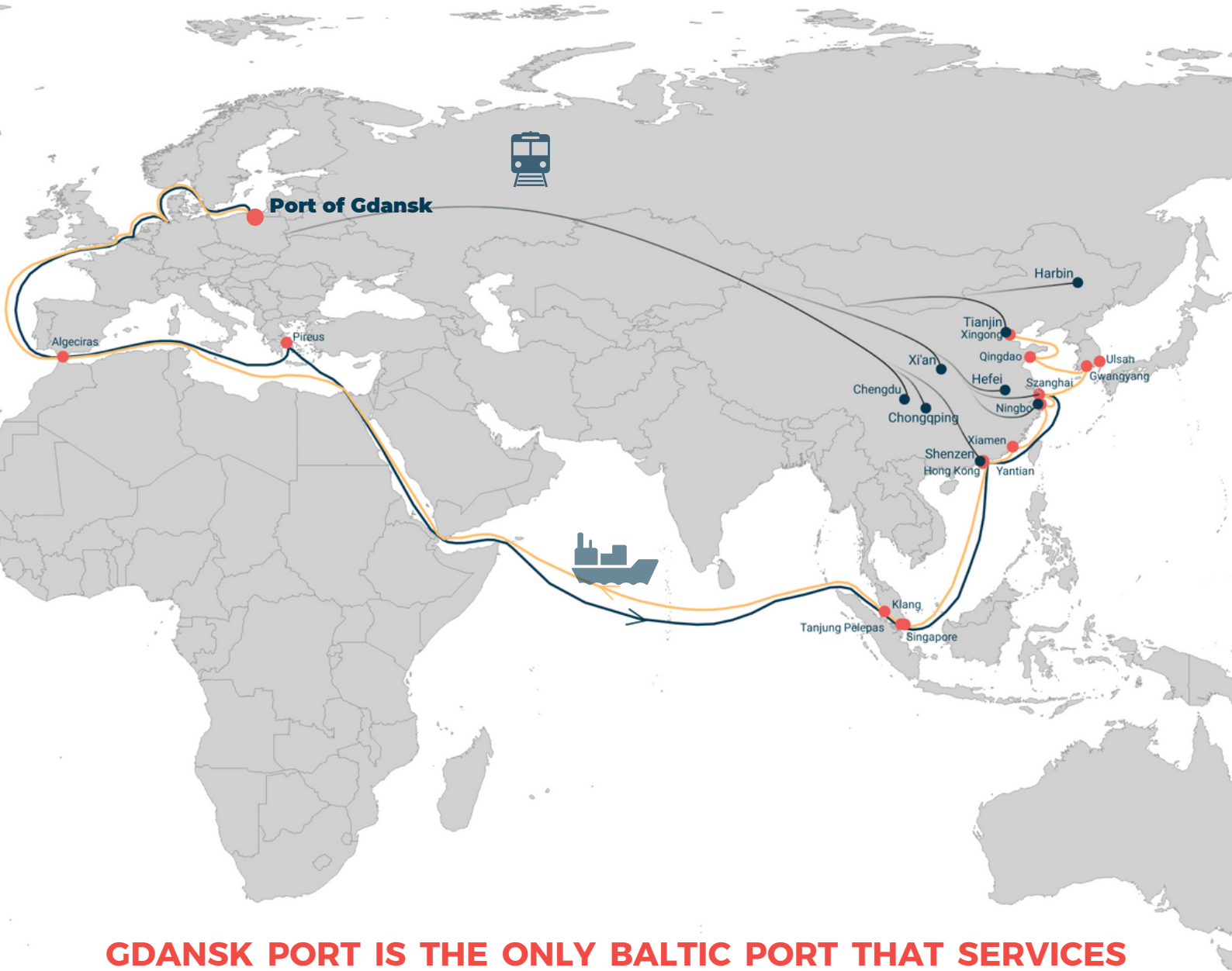
Most of the exported cars are made in the Czech Republic and Slovakia, traveling all over Poland and then going to the port. The remaining 40% is the import of cars that travel a similar route. Nissan, Opel, Mitsubishi, and Suzuki cars come to Gdańsk from the Port of Tynem, and from there, they are directed to such markets as: Poland, the Czech Republic, Slovakia, Hungary, Ukraine, Lithuania, and Latvia [23].

In 2019, as many as 77,300 vehicles were handled at the Port of Gdańsk. A total of 103 ships carrying cars have called at the port.

Car transport through the Port of Gdańsk is gaining in importance every year. Despite the collapse in the automotive sector related to the Covid-19 pandemic, it is estimated that the coming years will be equally good when it comes to transshipments at the Port of Gdańsk. This is the result of the port's adapted infrastructure, which allows transshipment within the Duty Free Zone and, in case of increased volumes, also at the Oliwa and Westerplatte Quays.

Key operators, such as the company Adampol, which is responsible, among other things, for transshipment of Kia and Hyundai in the Port of Gdańsk, have a big impact on the growing role of the Port of Gdańsk in the transshipment of cars [23].

ONE BELT ONE ROAD - DIRECT LINKS TO CHINA



GDANSK PORT IS THE ONLY BALTIC PORT THAT SERVICES REGULAR CONTAINER CONNECTIONS WITH CHINA.

**32-34
DAYS**

This is the average time for sea transport from China to Gdańsk. It is currently the cheapest means of transporting goods from the Far East. Additionally, Gdańsk has much lower port rate than other European ports, such as Hamburg, which makes it even more competitive.



06. ABOUT INVEST IN POMERANIA

Invest in Pomerania has been promoting the investment attractiveness of the region and helping investors choose Pomerania over the last 10 years. Not only that, Invest in Pomerania also offers post investment support to help the investors grow in the region. Invest in Pomerania's activities are aimed at economic development of the region by attracting investors and creating new jobs.

10 YEARS OF INVEST IN POMERANIA

1200

Investment queries handled

122

Completed investment projects

17000

Jobs created

"WE CARE MORE"

Invest in Pomerania is a local government initiative whose main task is the economic promotion of the Pomeranian Voivodeship by attracting new investments into the region. As part of our services we provide investors with comprehensive investment advisory services. Our activities have been recognised and awarded by many international ranking organizations like Financial Times, FDI Intelligence, Milken Institute, Polish Investment and Trade Agency (PAIH) and ABSL.



OUR SUPPORT

INFORMATION

Comprehensive information on the region's economy, key industries, real estate, HR and legal regulations

INVESTMENT OFFERS

Information on currently available investment plots and warehouses

INCENTIVES

Comprehensive information on the currently available financial and operational incentive

LOCATION VISITS

Organized and planned location visits, including reference visits with strategic HR and RE agencies and visits to the actual investment locations

PR & MARKETING

Media announcement of the new investment via a press release or a media event

INVESTMENT SUPPORT

Support in all matters related to setup and construction

EMPLOYER BRANDING

Creating bespoke campaigns to brand the company as an attractive employer via our Live more. Pomerania campaign

TALENT ATTRACTION

Access to Poland's first-ever market-driven, profile-led recruitment platform, for free

BUSINESS DEVELOPMENT

Introduction to local business community, matchmaking and joint marketing efforts at conferences

INVESTOR SPOKESPERSON

Comprehensive support in all things administrative, e.g residence and work permits



CONTACT

MIKOŁAJ TRUNIN

Deputy Director of Invest in Pomerania

tel. (+48) 609 860 060

mikolaj.trunin@investinpomerania.pl

MONIKA WÓJCIK

Project Manager, Industry&Real Estate, Invest in Pomerania

tel. (+48) 500 351 535

monika.wojcik@investinpomerania.pl

EWELINA BEYER

FDI Associate, Industry&Real Estate, Invest in Pomerania

tel. (+48) 503 686 207

ewelina.beyer@investinpomerania.pl

SYLWIA RÓŻAŃSKA

FDI Associate, Industry&Real Estate, Invest in Pomerania

tel. (+48) 501 365 563

sylwia.rozanska@investinpomerania.pl

TOMASZ GRABOWSKI

Analyst, Invest in Pomerania

tel. (+48) 573 161 556

tomasz.grabowski@investinpomerania.pl

MAŁGORZATA MUDYNA

Randstad Professionals Branch Manager

tel. (+48) 601 301 006

malgorzata.mudyna@randstad.pl




NATALIA STROJCZYK

Randstad Senior Consultant

tel. (+48) 601 803 623

natalia.strojczyk@randstad.pl

BUSINESS CARDS

COMPANY	ORIGIN	OPERATION IN POMERANIA
		Products supporting autonomous driving (cameras, on-board computers) as well as radios and control panels
		Cable harnesses for medical devices, automotive sector, and agricultural machinery
		Manufacturer of caravans and motorhomes
		Electric vehicle chargers, software for charging management systems
 Fibra Tech		Carbon fiber wheels for electric vehicles
		Machining of metal elements (aviation and automotive)
		Electronic components
		Creation of requirements, specification, design and testing of on-board information systems software

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FIRMA	SIEDZIBA	OPERACJE NA POMORZU
		Battery systems for companies dealing in energy storage and the mining industry
		Hardware and software for vehicles and vehicle components
		Hydraulic power supply units, software for the railway systems, hydraulic and filtration aggregates, special-purpose machinery and equipment, electric vehicle charging systems
		Assembling transport trailers
		Light, medium and heavy manual gearboxes and their components. Fuel vapor valves, turbochargers and differentials, compressors, and clutches
		Bimetallic strips and plain bearings
		Data Center Solutions, drivers, solutions for autonomous driving
		Buses and bus chassis
		Manufacturer and converter of adhesive tape solutions including adhesive technologies used for electric vehicles

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PHOTOS AND MAPS

Page 7 - Map showing the voivodeships of the Pomeranian Voivodeship. Based on own study.

Page 8 - Map showing the location of selected companies from the automotive sector in Pomerania. Based on own study.

Page 10 - Visualization of the Northvolt factory in Gdańsk, photo: Northvolt press materials.

Page 12 i 13 - Building of the Technical University of Gdansk, media.pg.edu.pl.

Page 14 - Map showing universities in Pomerania. Based on own study.

Page 16 - Photos from the resources of the Vocational School Complex in Gdańsk provided by the Marshal's Office of the Pomerania Voivodeship.

Page 17 - Map showing powiats dominating in educating students of vocational schools for the automotive industry. Based on own study.

Page 24 - Olivia Star building in the Olivia Business Center complex, photo by Linda Christiansen on Unsplash.

Page 49 - Map showing the locations of global brands from the automotive industry; Source: Based on own study and on data from the European Automobile Manufacturers Association and Automotive Industry Portal Marklines.

Page 52 - Map of road connections, source: Based on own study based on the data of the General Directorate for National Roads and Motorways.

Page 53 - Railway map of Poland, source: Based on own study on data from PKP Polskie Linie Kolejowe S.A.

Page 54 - Map of rail and road connections in the Gdansk Port, source: [www..portgdansk.pl](http://www.portgdansk.pl).

Page 56 - Map of the network of air connections from the airport in Gdańsk, source: <https://www.airport.gdansk.pl/loty/mapa-polaczen-p3.html>

Page 57 - Photo of the airport in Gdańsk - source: Pixabay

Page 58 - Photo of the Port of Gdansk, press materials of the Port of Gdansk.

Page 59 - Map of container connections; source: Based on own study with data from the Port of Gdansk.

Page 61 - Map of sea and rail connections with China. Source: Based on own study on data from the Port of Gdansk and eurochainatrain.com.

Page 62 - Invest in Pomerania logotype displayed on one of the buildings in the Imperial Shipyard. Invest in Pomerania resources.

Page 64. Olivia Business Center building. Invest in Pomerania resources.