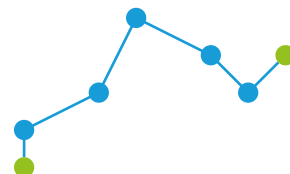
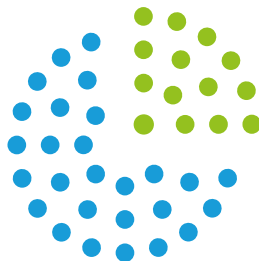
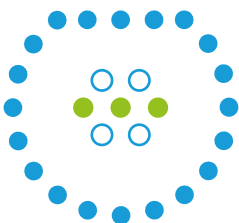
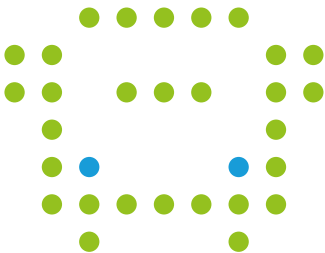
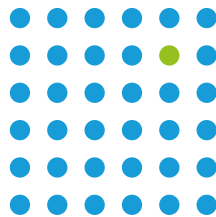
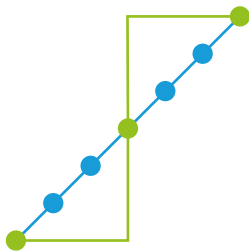




**Global
e-Mobility Forum**
2019 | Warsaw
21 NOVEMBER
DRIVING CHANGE TOGETHER

POLAND DRIVES E-MOBILITY!





MINISTERSTWO
KLIMATU



COP24·KATOWICE 2018
UNITED NATIONS CLIMATE CHANGE CONFERENCE

COOPERATION



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Dear Readers,

during the United Nations Climate Change Conference COP24 in Katowice, Poland promoted numerous initiatives with "Driving Change Together – Katowice Partnership for Electromobility" being the focal point. The document was signed by 44 states representing more than half of the global population. Nevertheless, the change highlighted in the partnership is so far-reaching that it affects all of us in one way or another. This is also the case for Poland, which is striving to fully utilize its current potential in the motor industry and future development opportunities.

Our adventure with electromobility began in 2016. We have made intelligent use of this time by supporting market development in terms of supply, demand and also the legal framework. As a result, in some areas Poland boasts a leadership role and serves as an example to follow for countries which are only now joining the market.

I am convinced that an open approach to sharing our experiences, together with the Polish potential and innovative spirit, will guarantee further successes. We are part of a change in global trends but how we benefit from these new trends is in our hands.

Michał Kurtyka

Minister of Climate
COP24 President



1

MADE IN POLAND

The potential of the Polish EV market

The automotive branch is one of the key engines driving the Polish economy

PLN 153.42 billion

Income of the sector in 2018



Share in the industrial production in 2018

327 400

Employment in 2018

→ 3rd place in the European Union

342

Number of companies operating in the sector

ANNUAL PRODUCTION:

Passenger cars **451 600**

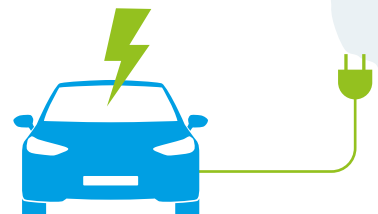
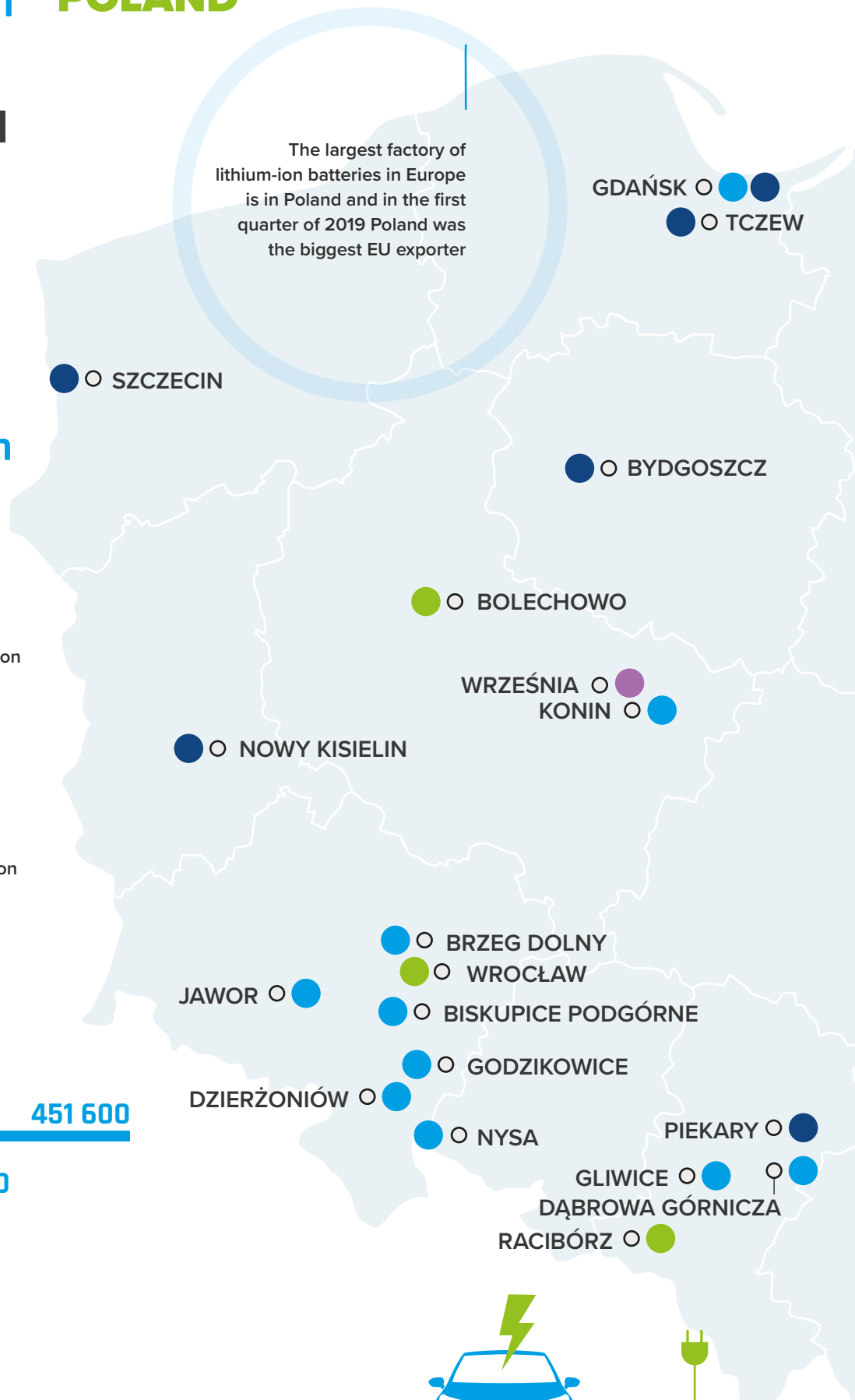
Utility cars **202 100**

Buses **5 900**

EUR 28.7 billion

Value of export

The largest factory of lithium-ion batteries in Europe is in Poland and in the first quarter of 2019 Poland was the biggest EU exporter



Source of data: Polish Investment and Trade Agency, PFR Group

Poland is the biggest producer and exporter of electric buses in EU

The first electric “Bus of the Year” was created in Poland

The Polish factory is currently carrying out the largest tender in Europe for the supply of 157 electric buses for Goeteborg

The second largest tender for the purchase of 130 electric buses was settled in Warsaw

○ WARSAW

One of the largest fully electric car sharing systems in Europe – 500 zero-emission vehicles – operates in the Polish capital

○ STARACHOWICE

The most powerful pantograph charger in the world, supplying 540 kW, has been installed in Poland

○ MIELEC

Polish factories produce fully electric vans of leading automotive companies

○ CRACOW

● E-BUS PRODUCTION FACILITIES

Solaris – Bolechowo

Volvo Buses – Wrocław

MAN Bus – Starachowice

Rafako – Racibórz

● CELLS, LITHIUM-ION BATTERIES AND BATTERY COMPONENTS FACILITIES

LG Chem – Biskupice Podgórne

Northvolt – Gdańsk

Daimler – Jawor

BMZ – Gliwice

Umicore – Nysa

Guotai Huarong – Godzikowice

LS Cable & Systems – Dzierżoniów

Impact Clean Power Technology – Warsaw

Johnson Matthey – Konin

Capchem – Godzikowice

PCC Rokita i Shida – Brzeg Dolny

SK Innovation – Dąbrowa Górnicza

● EV CHARGING STATIONS PRODUCTION FACILITIES

Garo Polska – Szczecin

Ekonoenergetyka-Polska – Nowy Kisielin (near Zielona Góra)

Enelion – Gdańsk

PRE Edward Biel – Piekary

Kolejowe Zakłady Łączności – Bydgoszcz

ABB – Cracow, Tczew

● EV POWERTRAIN COMPONENT PRODUCTION FACILITIES

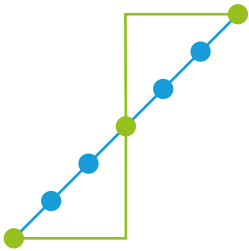
MEDCOM – Warsaw

● EV’S MADE IN POLAND

Volkswagen Poznań – Września

Triggo – Warsaw

Melex – Mielec

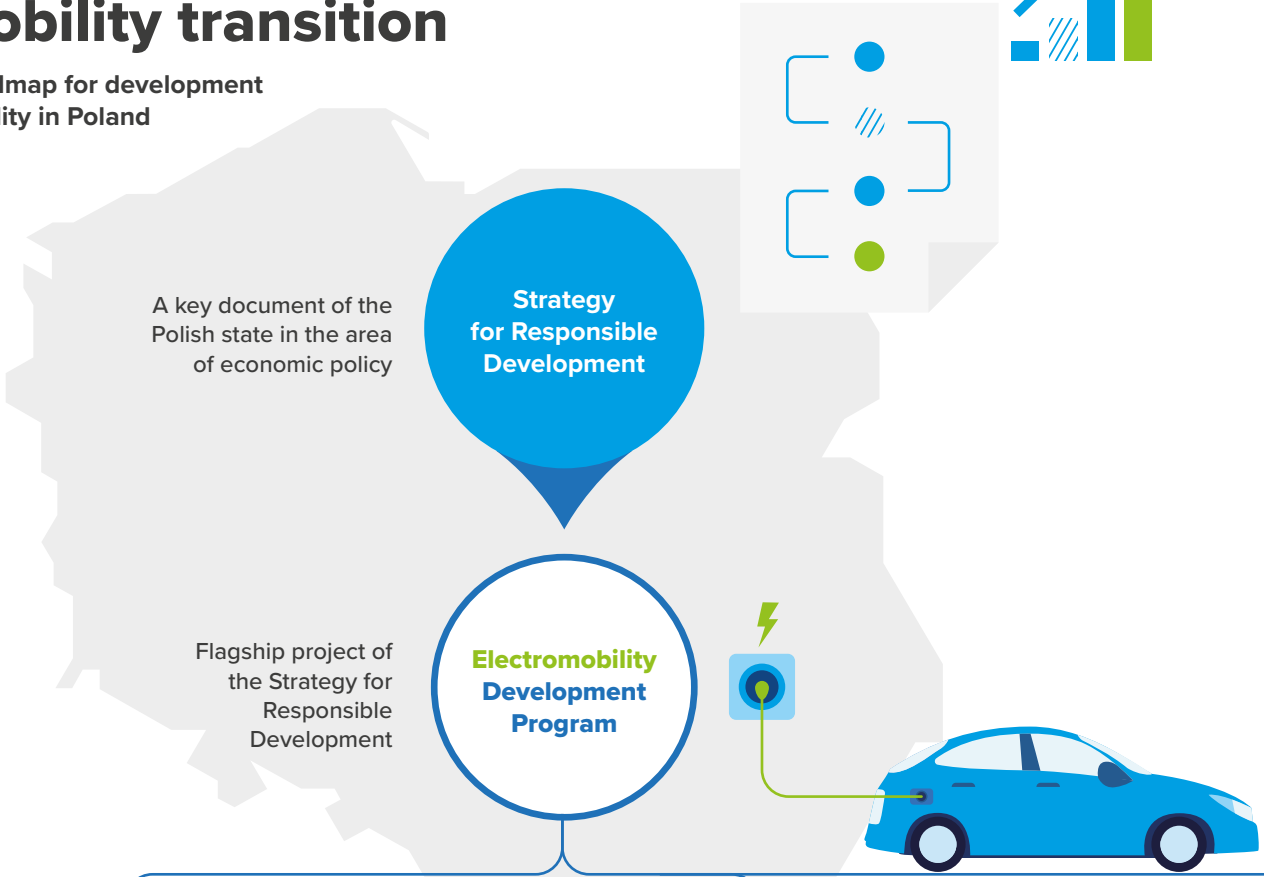


2

POLAND'S STUNNING E-MOBILITY PLANS

Leading to the e-mobility transition

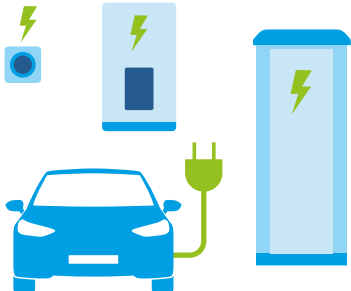
– the roadmap for development of e-mobility in Poland



01

ASSUMPTIONS OF THE PROGRAM

Creating a package of favorable legal regulations creating the e-mobility market in Poland and concentrating public funds on the development of this market



02

SYNERGY OF ACTIVITIES

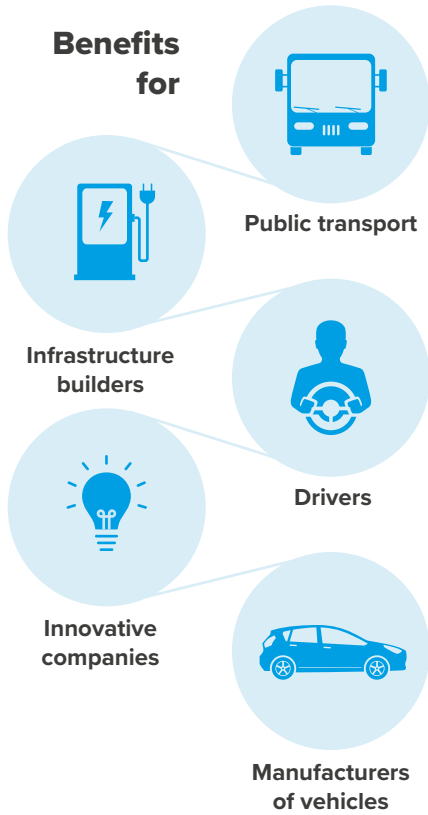
Institutions involved in the program*:

- Ministry of Energy
- Ministry of Entrepreneurship and Technology
- Ministry of Investment and Development
- Ministry of Environment
- Ministry of Science and Higher Education
- Ministry of National Defense
- Ministry of Infrastructure
- Ministry of Finance
- Ministry of Digital Affairs
- National Center for Research and Development
- Polish Development Fund
- National Fund for Environmental Protection and Water Management
- Polish Industrial Development Agency
- UDT – Office of Technical Inspection
- TDT – Transport Technical Supervision
- GUM – Central Office of Measures
- Polish local governments

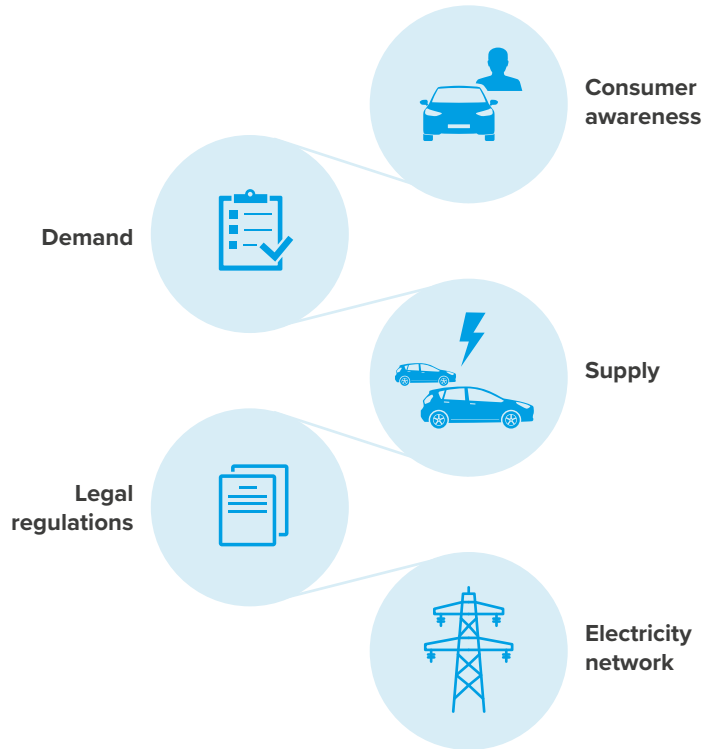
* In November 2019, the structure of the ministries has been changed

COMPLEMENTARITY

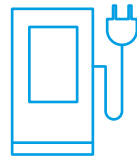
The adopted regulations and documents create instruments in 5 areas:



5 areas requiring action were identified:



FORECASTED EFFECTS



CHARGING POINTS
(in 32 selected Polish cities and TEN-T)

6,000
normal power

400
high power

03

EFFECTS OF THE PROGRAM

Adopted documents and legal regulations:

Electromobility Development Plan in Poland

Adopted by the government on **16/03/2017**

It defines the benefits associated with the widespread use of electric vehicles and identifies the economic and industrial potential of this area

National framework for alternative fuels infrastructure development policy

Adopted by the government on **29/03/2017**

They implement European regulations into the Polish legal order (Directive 2014/94/EU of the European Parliament and of the Council)

Act on Electromobility and Alternative Fuels

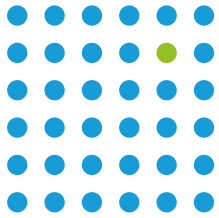
It came into force on **22/02/2018**

It creates a comprehensive legal framework by stimulating the development of e-mobility and promoting the use of alternative fuels in the transport sector in Poland

Act introducing the Low-Emission Transport Fund

It came into force on **28/07/2018**

It creates financing instruments for the development of e-mobility by i.a. introducing subsidies for the purchase of electric vehicles and construction of charging stations



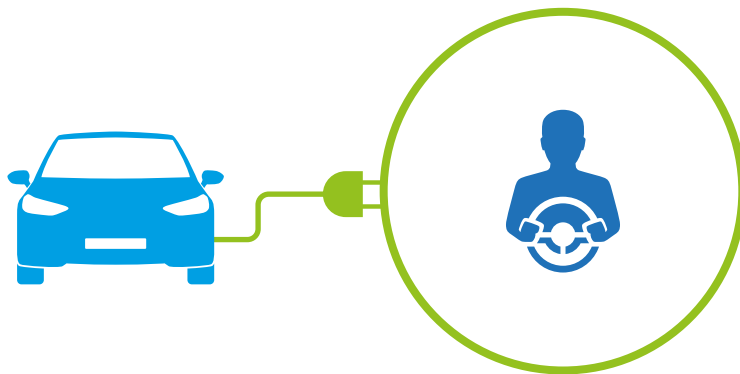
3 POLAND'S UNIQUE E-MOBILITY LAW

Act on Electromobility and Alternative Fuels

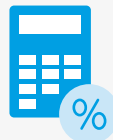
Date of entry into force: 22/02/2018

Privileges for drivers

Statutory incentives for purchasing zero-emission vehicles



Exemption from excise duty



Tax privileges for electric vehicle users – PIT/CIT



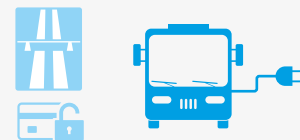
Possibility of electric vehicles using bus lanes



Possibility of parking EVs free-of-charge in paid zones in city centres



Unlimited entry of electric vehicles to Clean Transport Zones



Exemption of zero-emission buses from tolls on national roads

Obligations of public entities

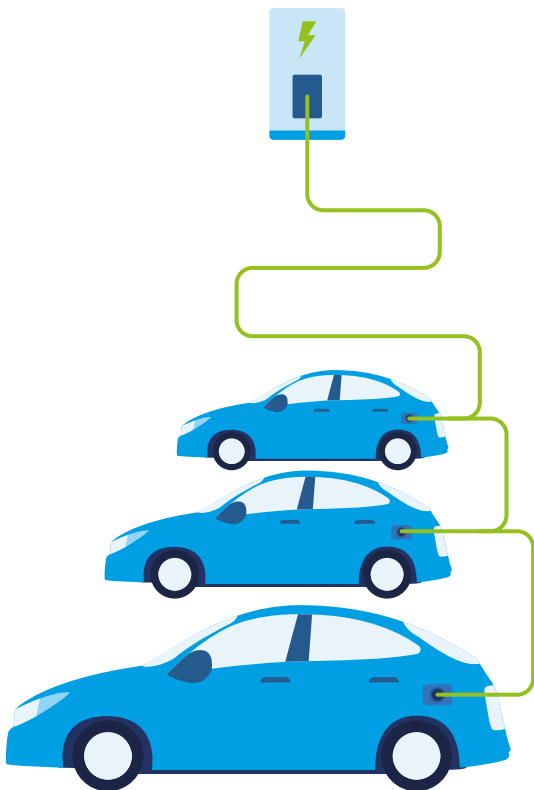
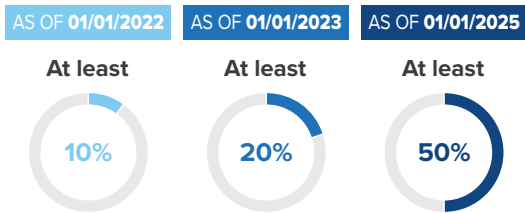
The administration statutorily supports the development of ecological transport



CENTRAL AUTHORITIES



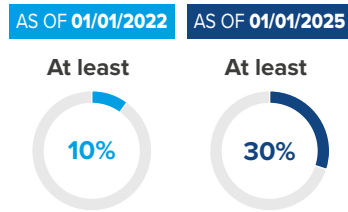
In the fleet of general and central state administration bodies, fully electric vehicles must constitute:



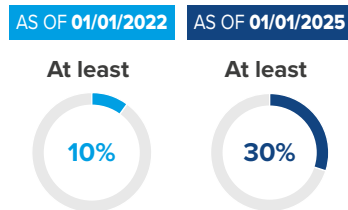
LOCAL GOVERNMENT UNITS OVER 50,000 RESIDENTS



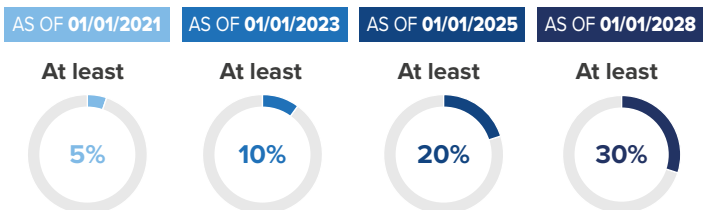
The share of fully electric vehicles in the fleet of vehicles in use in the office must constitute:



The share of fully electric vehicles powered by CNG and LNG in the performance of public tasks, excluding public collective transport, must constitute:



They provide or commission public transport services using zero-emission buses in the number of:





4

FINANCIAL INSTRUMENTS

SUPPORTING THE DEVELOPMENT OF E-MOBILITY

Low-Emission Transport Fund

Date of entry into force: 28/07/2018

PLN 6.7 billion
(ca. 1.8 bln USD)

EARMARKING OF FUNDS



Construction of EV charging and CNG/LNG/hydrogen refueling infrastructure



Support for producers of ecological vehicles



Support for low- and zero-emission collective transport



Support for the purchase of new vehicles and vessels powered by alternative fuels



Assistance for manufacturers and producers of alternative fuels



Support for research related to alternative fuels



Support for educational programs promoting alternative fuels



Support for activities related to the analysis and research of the alternative fuels market

FORMS OF SUPPORT

- 01 | Subsidies
- 02 | Loans or other forms of repayable support
- 03 | Subscription to stocks or shares in companies and bonds



SUPPORT FOR THE PURCHASE OF ELECTRIC VEHICLES

Regulation of the Minister of Energy on detailed conditions for granting and settling support granted to natural persons not conducting business activity

AUTHORIZED ENTITIES

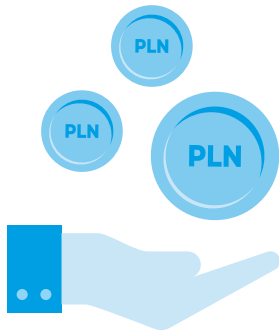
INDIVIDUALS NOT CONDUCTING BUSINESS ACTIVITY

CATEGORY	% OF PURCHASE PRICE	MAXIMUM AMOUNT FOR 1 VEHICLE	MAXIMUM GROSS VEHICLE PRICE
M1	30%	PLN 37,500	PLN 125,000
	30%	PLN 90,000	PLN 300,000



> Vehicles for the carriage of persons with no more than 8 seats in addition to the driver's seat

- Electric vehicle
- Hydrogen powered vehicle



Draft regulation of the Minister of Energy on detailed conditions for granting and settling support from the Low-Emission Transport Fund

AUTHORIZED ENTITIES

ENTREPRENEURS

CATEGORY	% OF COSTS ELIGIBLE FOR SUPPORT	MAXIMUM AMOUNT FOR 1 VEHICLE	MAXIMUM NET VEHICLE PRICE
M1	30%	PLN 36,000	PLN 125,000
	30%	PLN 100,000	–



> Vehicles for the carriage of persons with no more than 8 seats in addition to the driver's seat

CATEGORY	% OF COSTS ELIGIBLE FOR SUPPORT	MAXIMUM AMOUNT FOR 1 VEHICLE
M2	30%	PLN 70,000



> Vehicles for the carriage of passengers with more than 8 seats in addition to the driver's seat and GVW ≤ 5 t

CATEGORY	% OF COSTS ELIGIBLE FOR SUPPORT	MAXIMUM AMOUNT FOR 1 VEHICLE
N1	30%	PLN 70,000



> Cargo vehicles with GVW ≤ 3.5 t

CATEGORY	% OF COSTS ELIGIBLE FOR SUPPORT	MAXIMUM AMOUNT FOR 1 VEHICLE
N2	30%	PLN 150,000



> Cargo vehicles with GVW > 3.5 t but ≤ 12 t

CATEGORY	% OF COSTS ELIGIBLE FOR SUPPORT	MAXIMUM AMOUNT FOR 1 VEHICLE
N3	30%	PLN 200,000

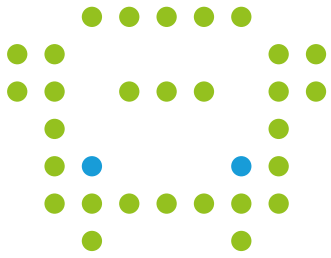


> Cargo vehicles with GVW > 12 t

CATEGORY	% OF COSTS ELIGIBLE FOR SUPPORT	MAXIMUM AMOUNT FOR 1 VEHICLE
L	30%	PLN 5,000

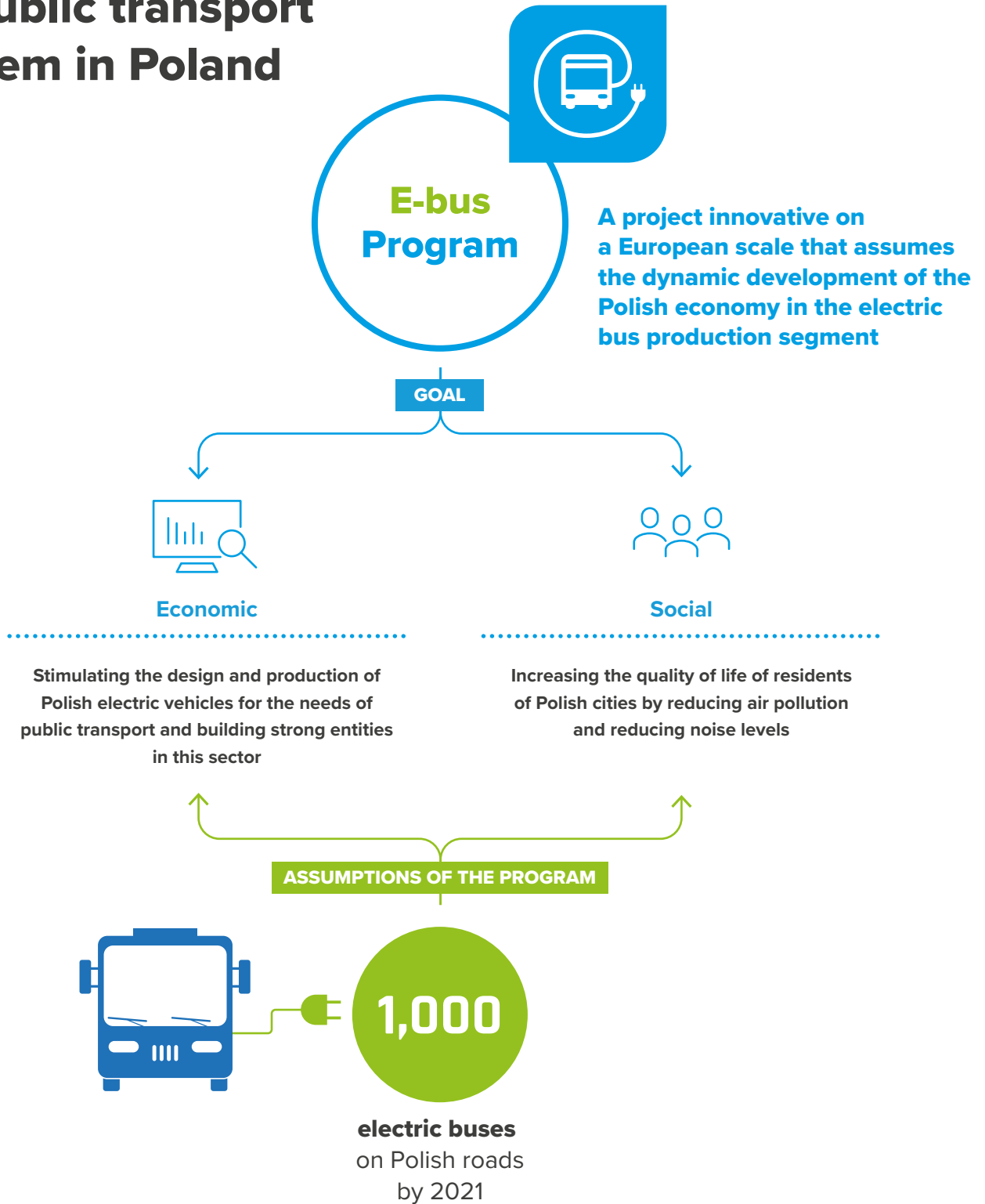


> Two-wheeled or three-wheeled vehicles, certain four-wheeled vehicles, including mopeds, motorbikes, tricycles, quadricycles



5 POLISH SPECIALIZATION - ELECTRIC BUSES

Extensive electrification of public transport system in Poland

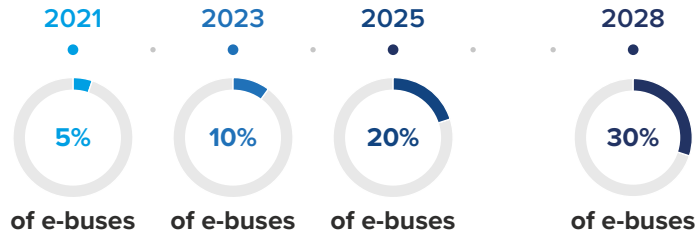


E-bus Program

LEGISLATIVE SUPPORT

> Act on Electromobility and Alternative Fuels

– imposes obligations in the field of rolling stock electrification on Polish local governments:



FINANCIAL SUPPORT

> Act establishing the Low-Emission Transport Fund

– a financial instrument for building the electric vehicle market in Poland



> National Fund for Environmental Protection and Water Management

– subsidizing the purchase of electric buses and charging infrastructure



> National Center for Research and Development

– financing the development of a zero-emission electric bus and charging infrastructure



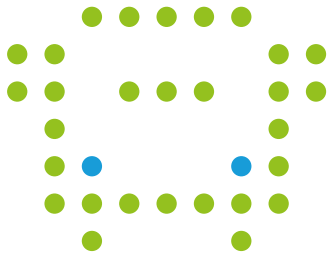
> Center for EU Transport Projects

– financing the purchase of electric bus rolling stock



> Polish Industrial Development Agency

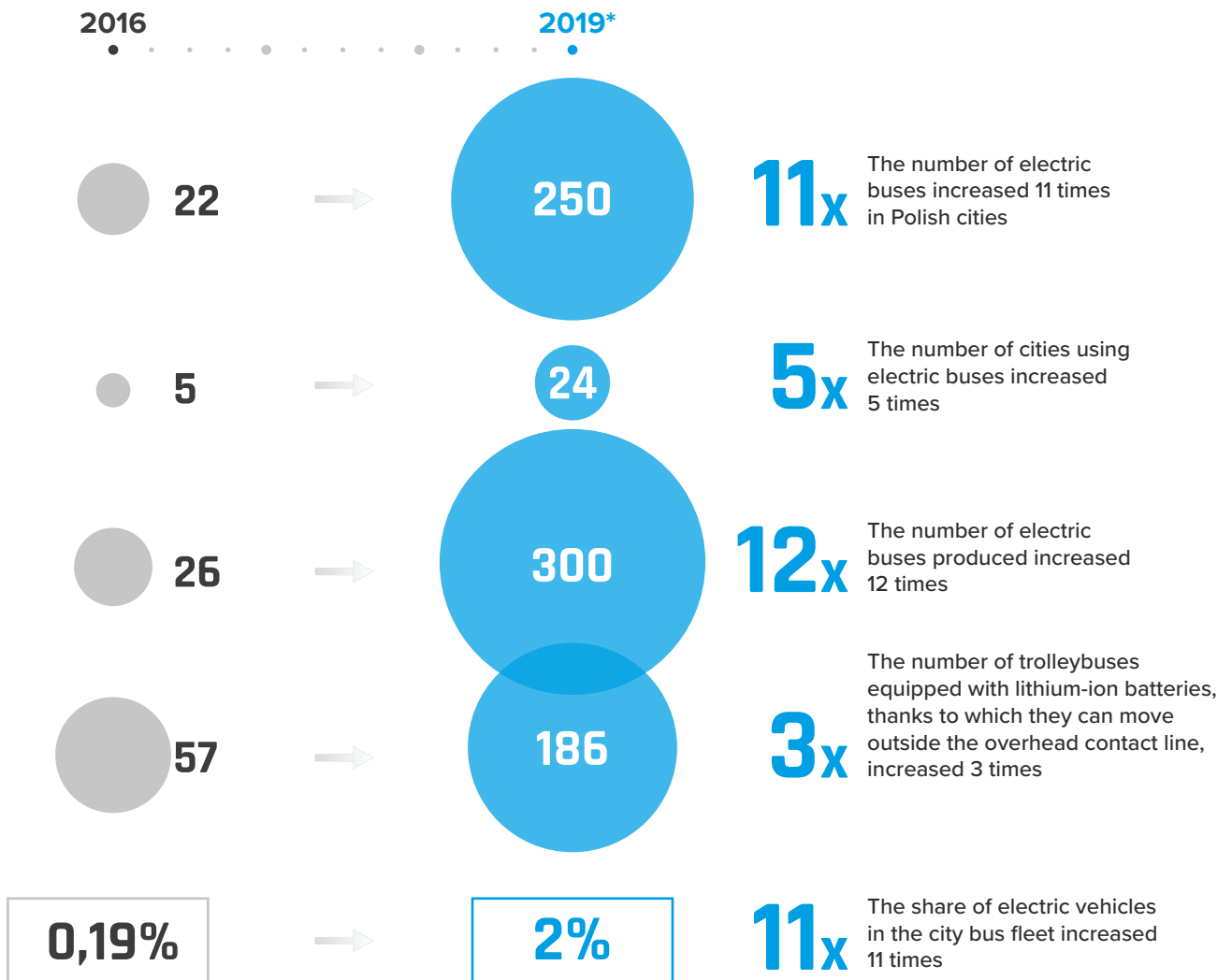
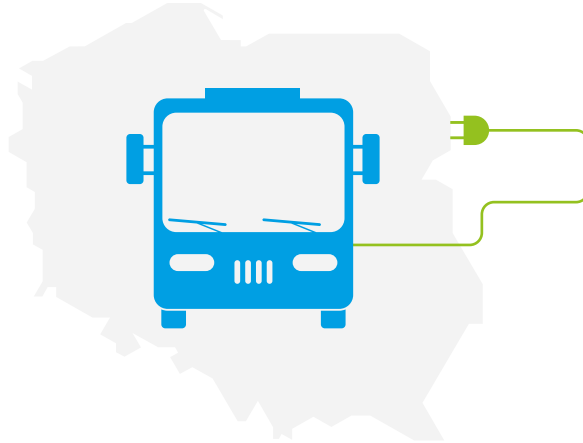
– support for startups in the field of e-mobility



5

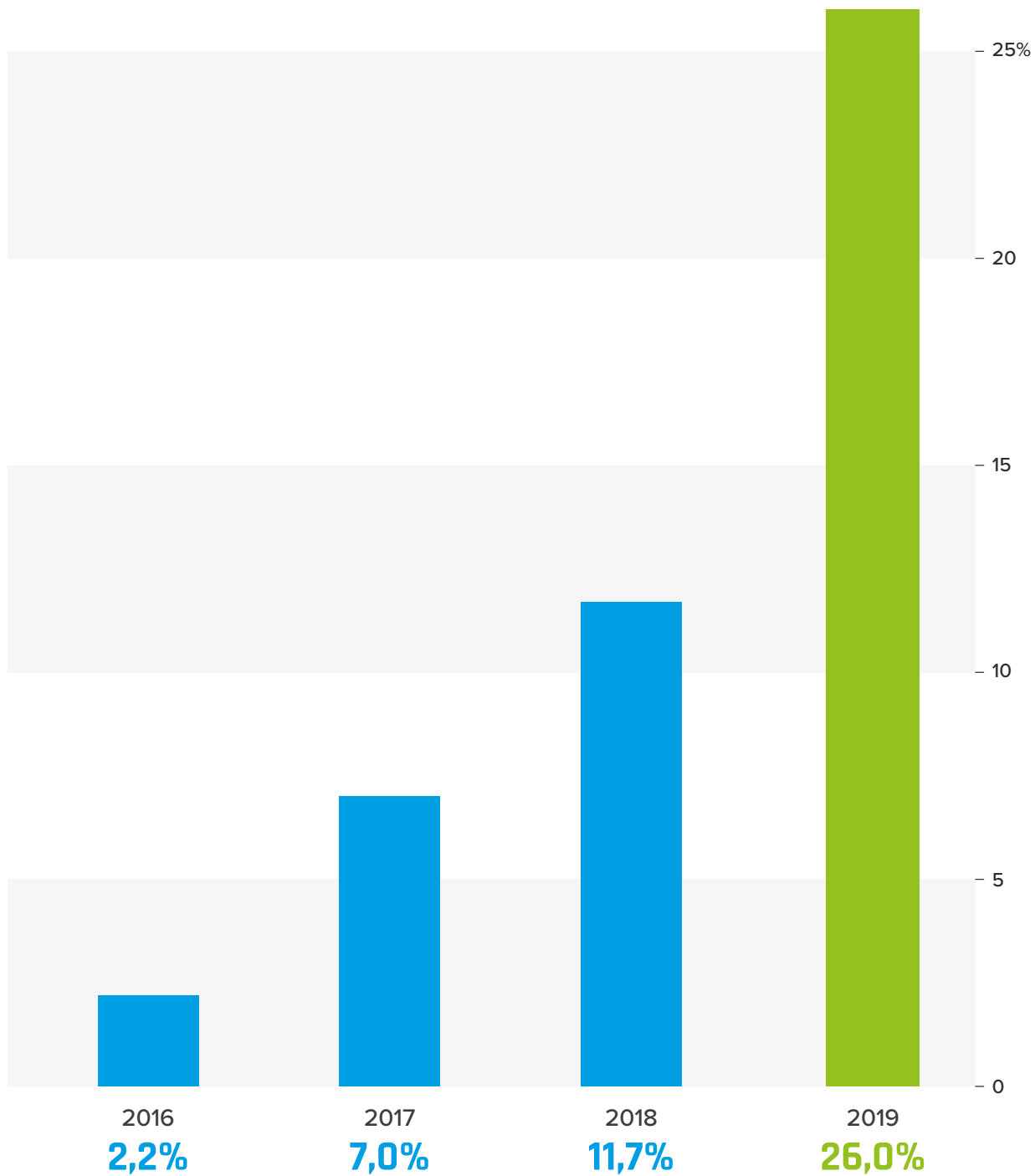
POLISH SPECIALIZATION - ELECTRIC BUSES

Polish electric bus market

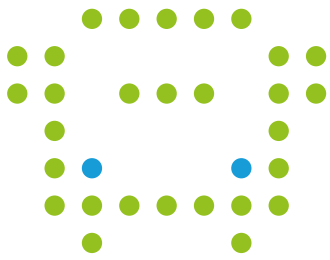


* Forecast until the end of 2019

Increase in the share of vehicles with alternative drives* in the city bus fleet



* Electric, plug-in hybrid, hybrid, natural gas powered

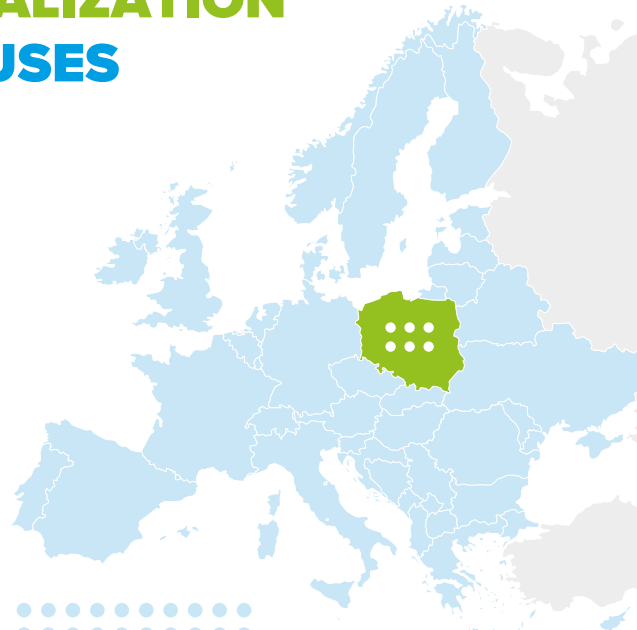


5

POLISH SPECIALIZATION – ELECTRIC BUSES

Cities – leaders of e-mobility

Polish cities are already European leaders in the implementation of electric buses



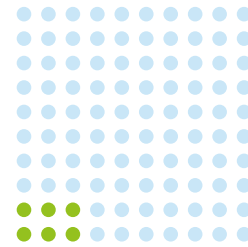
3,500

electric buses in Europe

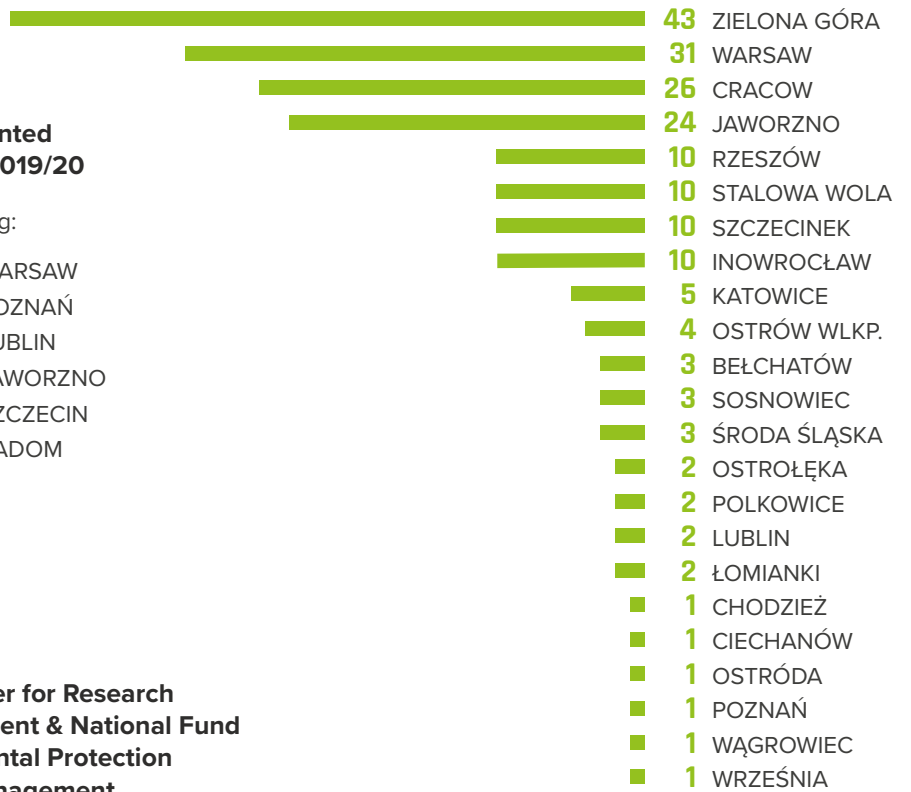
of which approx.

6%

are operated in Poland



Electric buses in Polish cities



198

electric buses in Polish cities

297

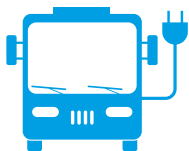
to be implemented for the years 2019/20

Including:

- 130 WARSAW
- 21 POZNAŃ
- 20 LUBLIN
- 20 JAWORZNO
- 11 SZCZECIN
- 10 RADOM

198

09/2019



1379

National Center for Research and Development & National Fund for Environmental Protection and Water Management program (2023)

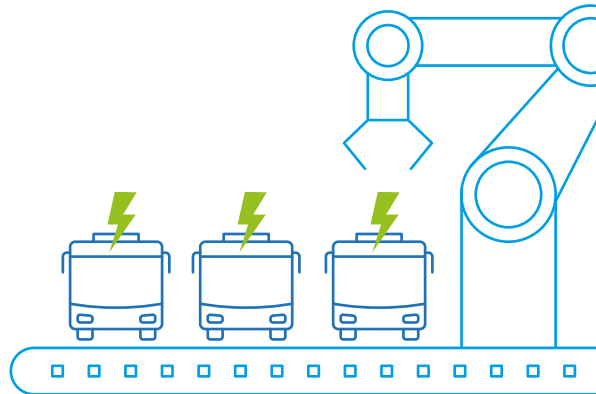
Manufacturers – Polish production potential

Solaris Bus & Coach

In 2019, Solaris won the position of European leader in terms of orders received for electric buses. A total of 470 zero-emission vehicles will leave the Bolechów factory thanks to contracts from Berlin, Warsaw and Milan

Volvo Bus Polska

The plant in Wrocław is the only factory of complete Volvo buses in Europe, where electric vehicles, including the zero-emission model 7900 Electric, are produced



RAFAKO

At the end of 2018, the manufacturer of steam and water boilers for the power industry presented a compact electric bus that can transport up to 53 people

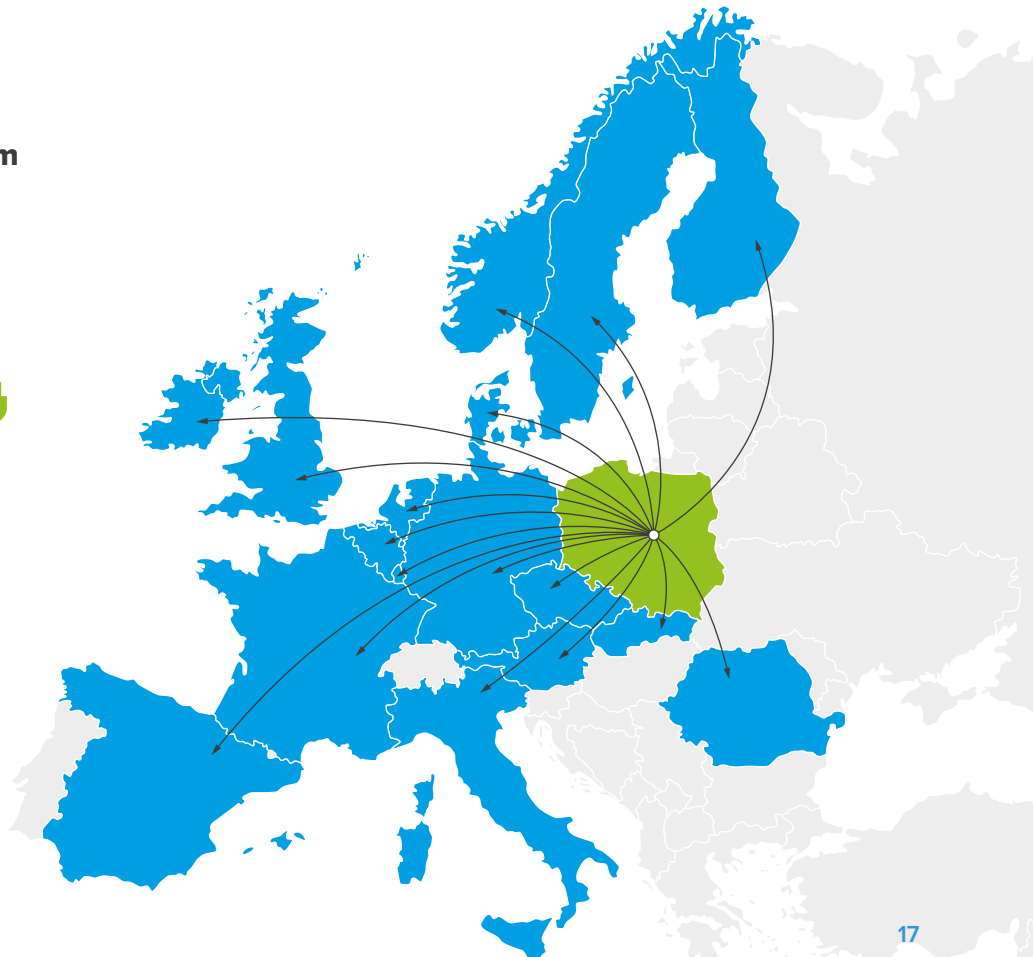
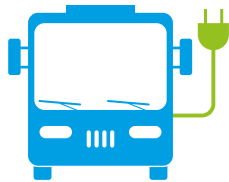
MAN Truck & Bus

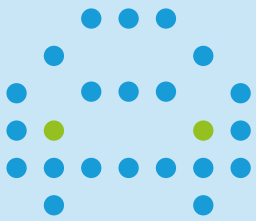
In 2020, the factory located in Starachowice will start the production of the Lion's City E model – it is a 100% electric, modern city bus

Autosan

The manufacturer from Sanok presented the Sancity 12LFE model in 2019 and started cooperation in the field of electric vehicles with the energy companies PGE, Tauron and Enea

Electric buses from Polish factories are sold all over Europe





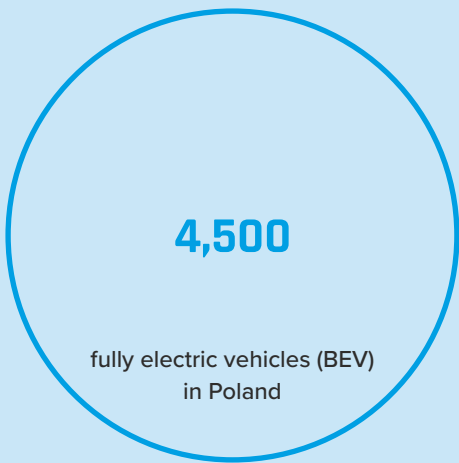
6

POLISH CITIES OF THE FUTURE

Comprehensive transformation of polish cities as a key part of e-mobility

CARSHARING

Poland is one of the leaders in electric car sharing in Europe!



electric cars on Polish roads drive in car sharing fleets

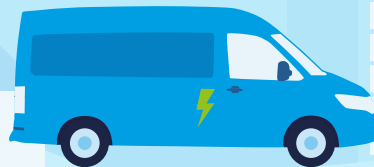
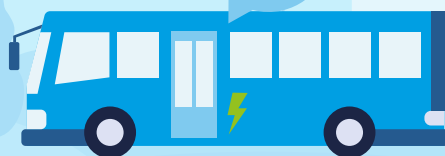
ca. **17%**
of the market

ZERO-EMISSION LOGISTICS

More and more Polish companies are investing in zero-emission urban logistics - including Polish Post (20 Nissan delivery vans e-NV200), inPost, and Quiers Shipments

ELECTRIC BUSES

The Polish electric bus park currently has over 200 vehicles, and in the next decade Warsaw will have the second largest fleet of zero-emission buses (after London) (about 160 units)



Development of smart cities in Poland

ELECTRIC MOPEDS

The fleet of electric mopeds available as part of shared mobility services in Polish cities has approx. 1,500 vehicles



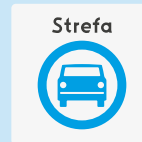
CHARGING INFRASTRUCTURE

Currently, there are 914 stations in Poland, i.e. 1,686 charging points – we have one of the largest (29%) shares of fast DC chargers in Europe



CLEAN TRANSPORT ZONES

38 municipalities in Poland with over 100,000 residents were granted the right to create Clean Transport Zones, to which only zero-emission vehicles have unlimited access



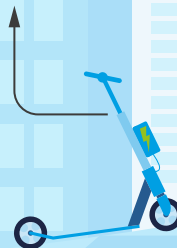
AUTONOMOUS VEHICLES

The National Center for Research and Development, the City of Jaworzno and the Ministry of Infrastructure are implementing a project under which a special zone for testing the prototypes of autonomous public transport vehicles will be created in Silesia



ELECTRIC SCOOTERS

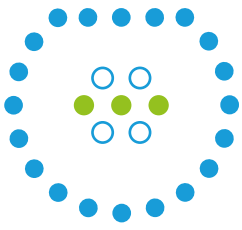
The streets of Polish cities have more than 7,000 electric scooters offered by rentals



ELECTRIC BICYCLES

Polish rental companies already offer over 2,000 electric bicycles

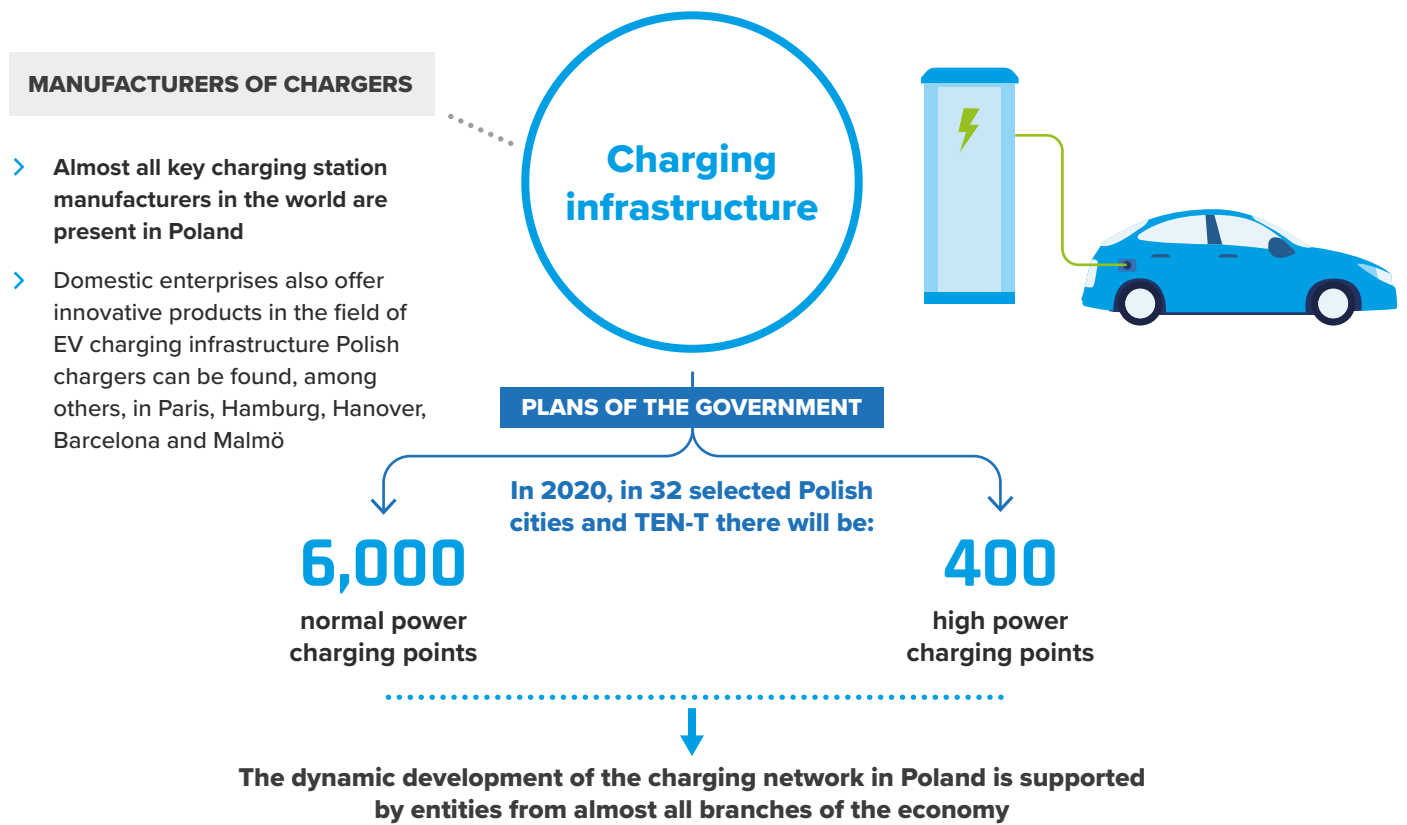




7

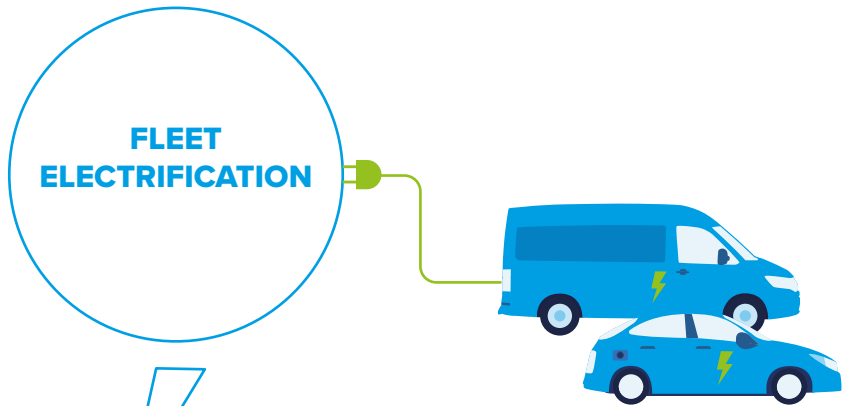
INFRASTRUCTURE AND FLEET EXPANSION

Private and public entities are involved in the dynamic development of e-mobility



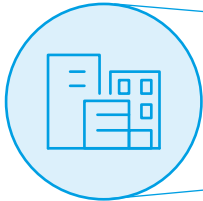
<p>ENERGY CONCERNS</p> <p>The most important energy groups and companies in Poland (PGE, TAURON, Energa, Enea, innogy) are developing an electric vehicle charging network. By 2022, they may launch over 2,000 charging points</p>	<p>FUEL CONCERNS</p> <p>The largest fuel companies in Poland (PKN Orlen, Lotos) are building electric vehicle charging networks on the main communication routes. By 2020, they plan to launch over 200 EV charging stations</p>	<p>PRIVATE COMPANIES</p> <p>Private companies (including GreenWay Polska) will launch nearly 1,000 electric vehicle charging stations over the next 3 years, facilitating comfortable travel throughout Poland</p>	<p>FOREIGN NETWORKS</p> <p>International charging networks (including IONITY, MEGA-E) are coming to Poland. Ultrafast stations that charge next generation electric cars with 350 kW will have been built on major routes by 2020</p>
<p>LOCAL GOVERNMENTS</p> <p>Units responsible for public transport (Municipal Transport Authority in Warsaw) are building electric vehicle charging stations in parking lots located in the most important transportation points of cities</p>	<p>RAIL</p> <p>The largest railway carrier in the country (Polish State Railways), is building a network of electric vehicle charging stations at railway stations in selected cities</p>	<p>RETAIL CHAINS</p> <p>The largest retail chains and shopping malls operating in Poland are developing charging infrastructure at their stores, making shopping easier for EV drivers</p>	

More and more Polish institutions support e-mobility as part of the implementation of electric vehicles in their fleet



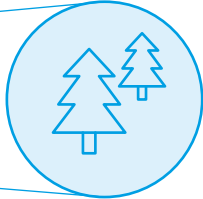
Chancellery of the President of the Republic of Poland

Electric cars are used in the office supporting the President of the Republic of Poland in performing his constitutional and statutory duties. EVs have been also implemented to the fleets of other other ministries and public authorities



Krakowski Holding Komunalny

In 2019, KHK selected the tender winner for the long-term rental of 47 electric cars that will be used by representatives of the city hall, municipal companies and organizational units



State Forests National Forest Holding

In 2018, the institution settled the tender for the supply of electric vehicles. EVs went to the State Forests National Forest Holding and help in implementing environmentally friendly forest management



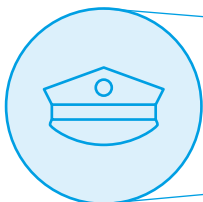
Provincial Police Headquarters in Szczecin

Policemen from Szczecin and Szczecinek use the first fully electric police cars in Poland



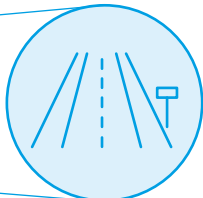
Municipal Transport Authority in Warsaw

The institution cares about the efficiency of public transport in the Polish capital using electric cars



City Guard of Cracow

EVs help city guards to protect peace and order in the second largest city in Poland



Municipal Road Authority in Warsaw

The unit uses electric cars to patrol the streets, as well as to control signs and lighting in the city



Municipal Enterprise of Municipal Economy in Katowice

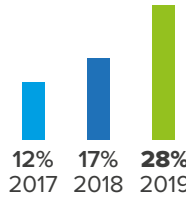
Municipal Cleaning Company in Cracow

Municipal companies in Krakow and Katowice clean city streets with electric sweepers



GROWING SOCIAL AWARENESS

Year by year, drivers in Poland are becoming increasingly interested in electric vehicles



28%

As many as 28% of Poles declare that they will realistically consider buying a vehicle with electric drive in the near future, getting acquainted with the market offer in this area (period of 3 years).

Retreat from diesel

The popularity of diesel engines is declining – from 35% in 2017 to 28% in 2019 (as many people are interested in electric drives)

EV trend

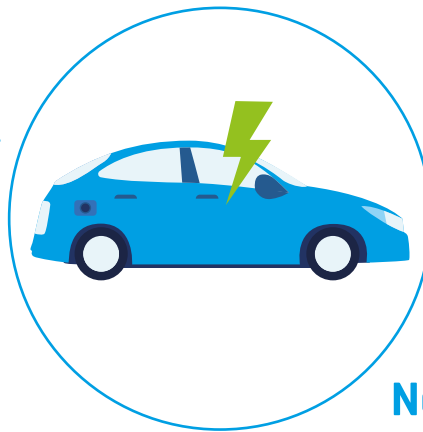
In 2019, the upward trend related to the interest of Poles in purchasing an electric vehicle was maintained

Subsidies

People considering purchasing an electric vehicle concluded that subsidies (76%) or VAT exemption (72%) would successfully convince them to invest in a zero-emission car

Preferred price

The price range for which most respondents would like to buy an electric car is PLN 100,000-150,000



Infrastructure

The development of e-mobility depends on the pace of expansion of the charging infrastructure. 92% of survey participants would like to charge their electric car at their place of residence

New Mobility

The survey results also point to the growing popularity of shared mobility services. 50% of Polish people said that owning a car no longer indicates social status

Poles are increasingly aware of the problems related to smog and perceive ecological mobility as an opportunity to improve the quality of air in cities



CLEAN TRANSPORT ZONES



2 out of 3

Poles believe that a Clean Transport Zone should be created in cities



1/3

believe that this will improve the air in their city

1/2

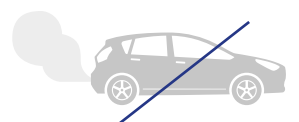
say it will have a positive impact on the number of EV registrations

60%

of Poles agree with the idea of banning diesel vehicles in city centers

66%

of Poles surveyed support the ban on registering combustion cars in Europe after 2040



Source of data: "New Mobility Barometer 2019/2020", report "Clean Transport Zone"

E-MOBILITY COMMUNICATORS



Polish travelers have proved that electric cars can provide zero-emission transport in all conditions, thus contributing to the promotion of e-mobility

#NoTranceExpedition

Polish polar explorer Marek Kamiński travelled the route from Poland to Japan and back by electric car

8

COUNTRIES

- POLAND
- LITHUANIA
- BELARUS
- RUSSIA
- MONGOLIA
- CHINA
- SOUTH KOREA
- JAPAN



144

days

30,000

kilometers driven

302 km

Maximum distance on one charging

250 km

Average distance on one charging

53

charging cycles

0

emissions

Electric Explorer African Challenge

Polish traveller Arkady Paweł Fiedler, as the first man in history, travelled the whole Africa by electric car



14

COUNTRIES

- SOUTH AFRICA
- NAMIBIA
- ANGOLA
- DEMOCRATIC REPUBLIC OF KONGO
- CONGO
- GABON
- CAMEROON
- NIGERIA
- BENIN
- BURKINA FASO
- MALI
- SENEGAL
- MAURITANIA
- MOROCCO

97

days

15,176

kilometers driven in Africa

278.6 km

Maximum distance on one charging

100

charging cycles

9.5 kWh

Average energy consumption per 100 km

0

emissions



COP24·KATOWICE 2018
UNITED NATIONS CLIMATE CHANGE CONFERENCE