

# PILLEA

POLISH ZERO-EMISSION BUSES



# THE VISION

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ARP E-Vehicles is a Polish company owned by the Industrial Development Agency JSC. Since 2020, we have been manufacturing electric buses under the PILEA brand. The prototype of our first vehicle was created in 2019 and was designed by Polish engineers, from the very beginning as an electric vehicle. Thanks to unconventional and innovative solutions used in the structure of PILEA electric buses, we are ahead of the competition in terms of vehicle lightness, driving stability and the ability to recover energy during driving.

The quality of the natural environment is always the most important value for us, which is why 3 years after introducing the first electric PILEA bus to the market, we launched the production of hydrogen-powered buses. Global trends in the field of alternative fuels show that hydrogen will soon become a generally available ecological, emission-free fuel, powering more and more types of vehicles. Our innovative concept of the PILEA H2 hybrid hydrogen bus involves the use of the so-called hydrogen extender which involves combining power from currently used batteries with the energy generated by a hydrogen cell. Thanks to this solution, the hydrogen PILEA H2 is able to travel around 300 km on traditional batteries and an additional 300 km (PILEA 10 H2) or 600 km (PILEA 12 H2) on energy from a hydrogen fuel cell.

# MODELS PILEA

DESIGNED AND CONSTRUCTED BY  
POLISH ENGINEERS AT THE  
BYDGOSZCZ FACTORY



PILEA 8,6E












PILEA 10E



PILEA 12E

# INNOVATIONS

-  Designed by Polish engineers >>> from the beginning as a zero-emission vehicle
-  Batteries placed under the floor >>> excellent track stability
-  Lightweight construction >>> range increased by 10%
-  Energy recovery system >>> additional 30-40% energy
-  Low-floor throughout the entire length >>> passenger safety and comfort
-  Built-in charger >>> making charging easier in unexpected situations
-  Innovative motors with modern PMSM technology >>> guarantee reliability and excellent performance
-  Ramp for strollers and wheelchairs and a bus kneeling system >>> comfortable boarding for the passengers
-  Electric or hydrogen drive >>> operating costs lowered up to approx. 70% compared to diesel buses





# HIGH STANDARD FEATURES

- 🚗 Possible collisions with pedestrians or cyclists warning
- 🚗 Blind spot information system
- 🚗 Object detection system when reversing
- 🚗 Tire pressure monitoring system
- 🚗 Intelligent speed control assistant
- 🚗 Emergency stop signal
- 🚗 Easier installation of ignition blocking breathalyzers
- 🚗 Driver drowsiness and loss of attention warning system
- 🚗 360-degree cameras with intelligent reversing mode
- 🚗 Cyber attack protection system
- 🚗 Software management system

# MODEL SPECIFICATION

## PILEA 8,6 E

Długość / Wysokość / Szerokość  
Length / Height / Width

8.560 mm / 3.150 mm / 2.460 mm

Masa własna\* / DMC  
Own load\* / DMC

9.200 kg - 10.400 kg / 16.700 kg

Miejsca łącznie\* / miejsca siedzące  
Total\* / seating

63 / 23

Miejsce na wózek  
Place for trolley / wheelchair

1

Drzwi zewnętrzne  
Exterior door

1-2-0

Rozmiar kół  
Wheel size

285/70 R19.5

Baterie trakcyjne - rodzaj i pojemność\*  
Traction batteries - type and capacity\*

**NMC do 272 kWh**  
NMC up to 272 kWh

\* - wartość zależna od konfiguracji autobusu

\* - depends on bus configuration



# MODEL SPECIFICATION

## PILEA 10E

Długość / Wysokość / Szerokość  
Length / Height / Width

10.000 mm / 3.150 mm / 2.460 mm

Masa własna\* / DMC  
Own load\* / DMC

10.000 kg – 11.200 kg / 16.700 kg

Miejsca łącznie\* / miejsca siedzące  
Total\* / seating

74-76 / 23-30

Miejsce na wózek  
Place for trolley / wheelchair

1

Drzwi zewnętrzne  
Exterior door

1-2-0

Rozmiar kół  
Wheel size

285/70 R19.5

Baterie trakcyjne - rodzaj i pojemność\*  
Traction batteries - type and capacity\*

**NMC do 289 kWh**  
NMC up to 289 kWh

\* - wartość zależna od konfiguracji autobusu

\* - depends on bus configuration



# MODEL SPECIFICATION

## PILEA 12E

Długość / Wysokość / Szerokość  
Length / Height / Width

12.000 mm / 3.350 mm / 2.550 mm

Masa własna\* / DMC  
Own load\* / DMC

12.800 kg – 13.900 kg / 19.500 kg

Miejsca łącznie\* / miejsca siedzące  
Total\* / seating

80–105 / 29–39

Miejsce na wózek  
Place for trolley / wheelchair

1

Drzwi zewnętrzne  
Exterior door

2-2-0 lub 2-2-2

Rozmiar kół  
Wheel size

285/70 R22,5

Baterie trakcyjne - rodzaj i pojemność\*  
Traction batteries - type and capacity\*

**NMC do 579 kWh**  
NMC up to 579 kWh

\* - wartość zależna od konfiguracji autobusu

\* - depends on bus configuration





# MODEL SPECIFICATION

## PILEA school bus

PILEA School Bus is a perfect solution for local governments and educational institutions. Thanks to the innovative solutions applied in the bus, students are ensured safety and comfort, without a negative impact on the surrounding natural environment.

*Meets the strict requirements for a school bus in terms of art. 2 point 41 a of the Road Traffic Act of June 20, 199*

większa liczba miejsc siedzących  
*higher number of seats*

szkielet wykonany z materiałów  
o podwyższonych parametrach  
wytrzymałościowych  
*frame made of materials with  
increased strength parameters*

automatyczny system gaszenia  
pożarów  
*automatic fire extinguishing system*

podłoga antypoślizgowa  
*anti-slip floor*

system monitoringu wizyjnego  
*video monitoring system*



# MODEL SPECIFICATION

## PILEA H2

PILEA	10 H2	12 H2
Moc ogniwa <i>Fuel cell power</i>	30 kW	70 kW
Moc silnika* <i>Engine power*</i>	max. 245 kW	max. 245 kW
Pojemność zbiornika wodoru <i>Hydrogen tank capacity</i>	2 x 5 kg	40 kg
Pojemność baterii* <i>Battery capacity*</i>	289 kWh	289 kWh
Zużycie wodoru / 100 km* <i>Hydrogen consumption / 100km*</i>	3 kg	6 kg
Zasięg autobusu na H2* <i>Hydrogen range*</i>	300 km	600 km
Zasięg autobusu na EV* <i>EV range*</i>	320 km	240 km
Łączny zasięg* <i>Total range*</i>	620 km	840 km

\* - wartość zależna od konfiguracji autobusu

\* - parameter depends on bus configuration



# PILEA

**ELECTRIC** + **H<sub>2</sub>**

Fuel Cells  
made by  
**Loop Energy**

Range  
**up to  
620 km**

Length  
**10 m**

Electric  
bus with  
**a hydrogen  
extender**

Passenger  
compartment  
**up to 85 people  
on board**





# PILEA

FULL 

Fuel Cells  
made by  
**Loop Energy**

Range  
up to  
**620 km**

Length  
**12 m**

Passenger  
compartment  
up to **95 people**  
on board

# COMMON FEATURES

Door drive >>> electro-pneumatic

Assist >>> hydraulic with electric drive

Brakes, type >>> pneumatic disc brake

Ramp >>> folding ramp in second door

Lighting: front and rear >>> all LED technology

Air condition >>> three-zone air conditioning\*

Heating >>> oil-electric, water, heating pump\*

Axles >>> front – independent, rear – portal axle

Brakes, control >>> EBS, ABS, ASR, ESC, recuperation system

Body, side walls >>> side aluminium panels (screwed or glued)

Body, frame construction >>> corrosion resistant steel structure

Suspension >>> pneumatic ECAS or ESAC, with kneeling system

Charging system >>> on-board charger + plug in external charger or pantograph

Engine, type and max power >>> Permanent motor with synchronous magnets (PMSM), power 245 kW\*

\* – depends on bus configuration



# FAIRS

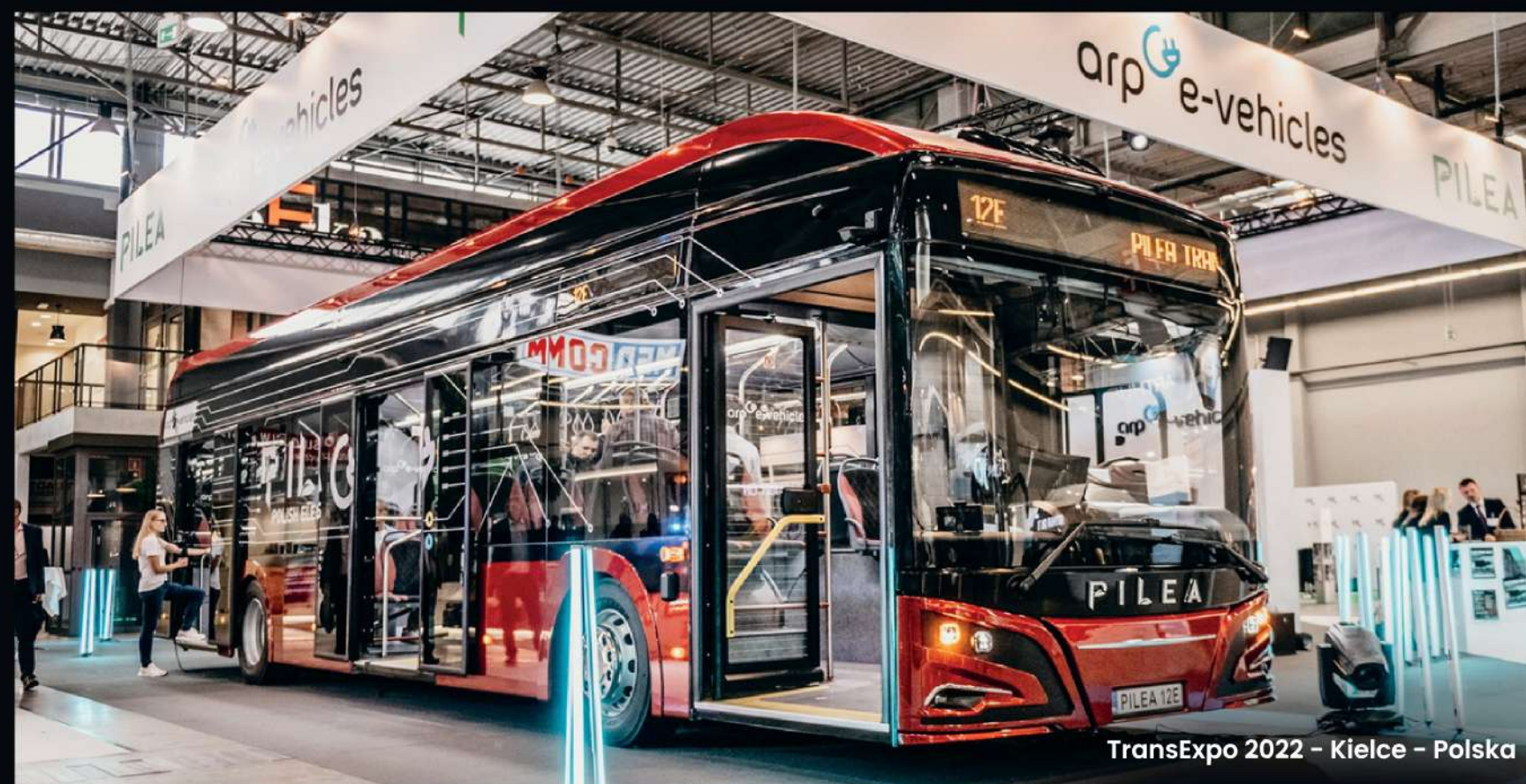
Presentations are ARP E-Vehicles Sp. z o. o. participates in many conferences related to electromobility and takes part in EV industry fairs in Poland and abroad, where it often wins awards for innovations and modern design of PILEA buses.that can be used as lectures .



Thessaloniki International Fair – Grecja



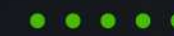
Międzynarodowe Targi Techniczne PLOVDIV – Bułgaria



TransExpo 2022 – Kielce – Polska



# AWARDS AND CERTIFICATES



PN-EN ISO 9001:2015

>>> Quality management system

PN-EN ISO 14001:2015-09

>>> Environmental management system

PN-EN ISO-45001:2018-06

>>> Health and safety management system

PN-EN ISO/IEC 27001:2022-10

>>> Information security management system

# CORPORATE SOCIAL RESPONSIBILITY

ARP E-Vehicles, as a manufacturer of zero-emission buses, contributes to improving the quality of the natural environment and supports many initiatives promoting ecology, a healthy lifestyle and sport.





# P I L E A

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