



# Company Presentation

14 October 2024





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Photon Energy Group

# Clean energy and water. The fundamentals of life.

We deploy technology to provide these fundamentals and help build a thriving, sustainable world.

# About Us

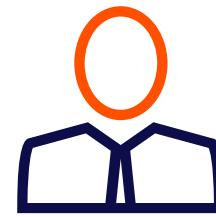
**We are dedicated to ensuring that everyone has access to clean energy and water.**



Founded in  
**2008**



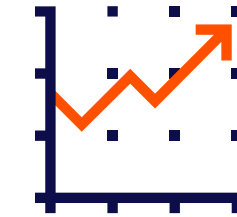
Headquartered in  
**Amsterdam**



**340+**  
Employees



Active in  
**15+ countries**



**Shares traded**  
in PL, CZ and DE



# Our Leadership Team



**Georg Hotar** **CEO, Co-founder**

Georg co-founded Photon Energy in 2008. He has extensive knowledge of the solar energy industry and international finance. In 2000 he established Central European Capital, a regional finance and strategy advisory boutique. He has also held various positions in financial services in London, Zurich and Prague.



**Michael Gartner** **CTO, Co-founder**

Michael developed one of the first large PV installations in the Czech Republic before co-founding Photon Energy in 2008. He relocated to Australia in 2011 to start Photon Energy Australia, and is now instrumental in driving Photon Energy's off-grid and solar-hybrid power solutions.



**David Forth** **CFO**

David is a British national who has gained extensive experience in top managerial positions with multinational companies including British Petroleum, BAT, Schneider Electric, Adecco and Costa Coffee. David is a British Chartered Accountant (FCA), qualifying with KPMG in London, and has a Degree in Law from Queen Mary University of London.

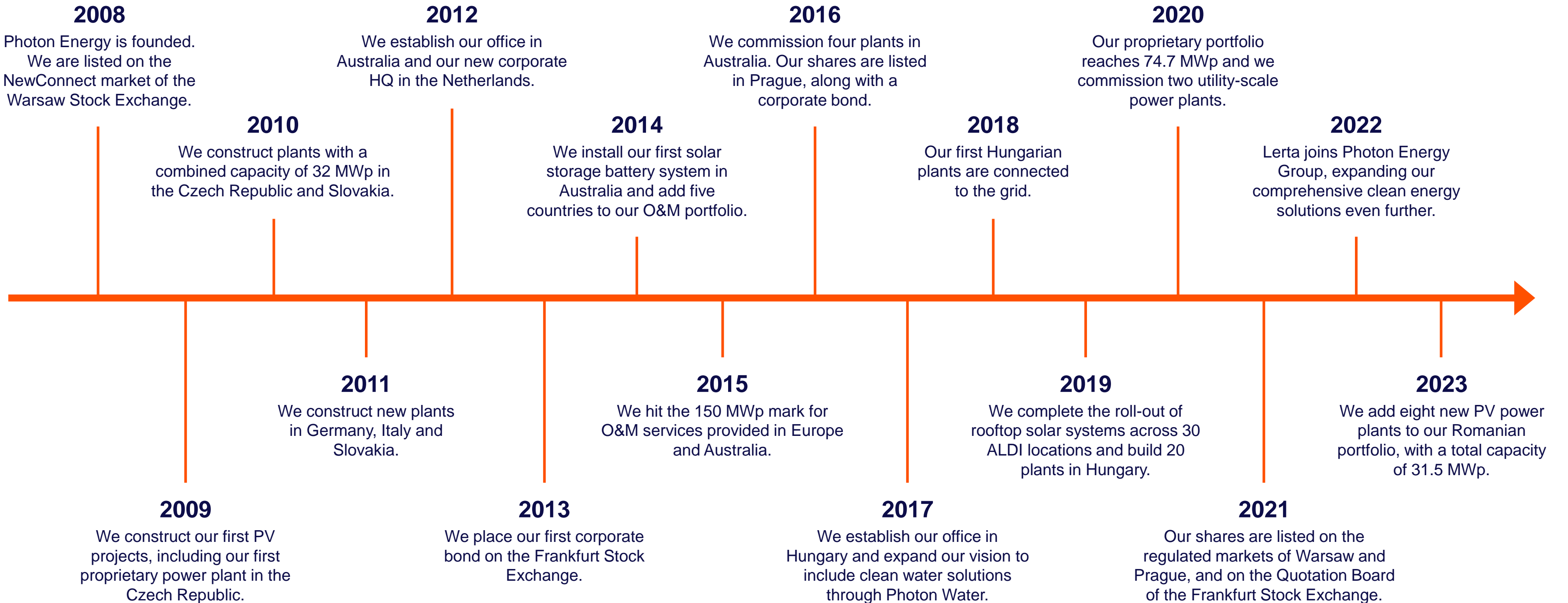


**Ricky D'Ambrosca** **COO**

Rick is responsible for the day-to-day administration of Photon Energy Group and its operational functions as a business.

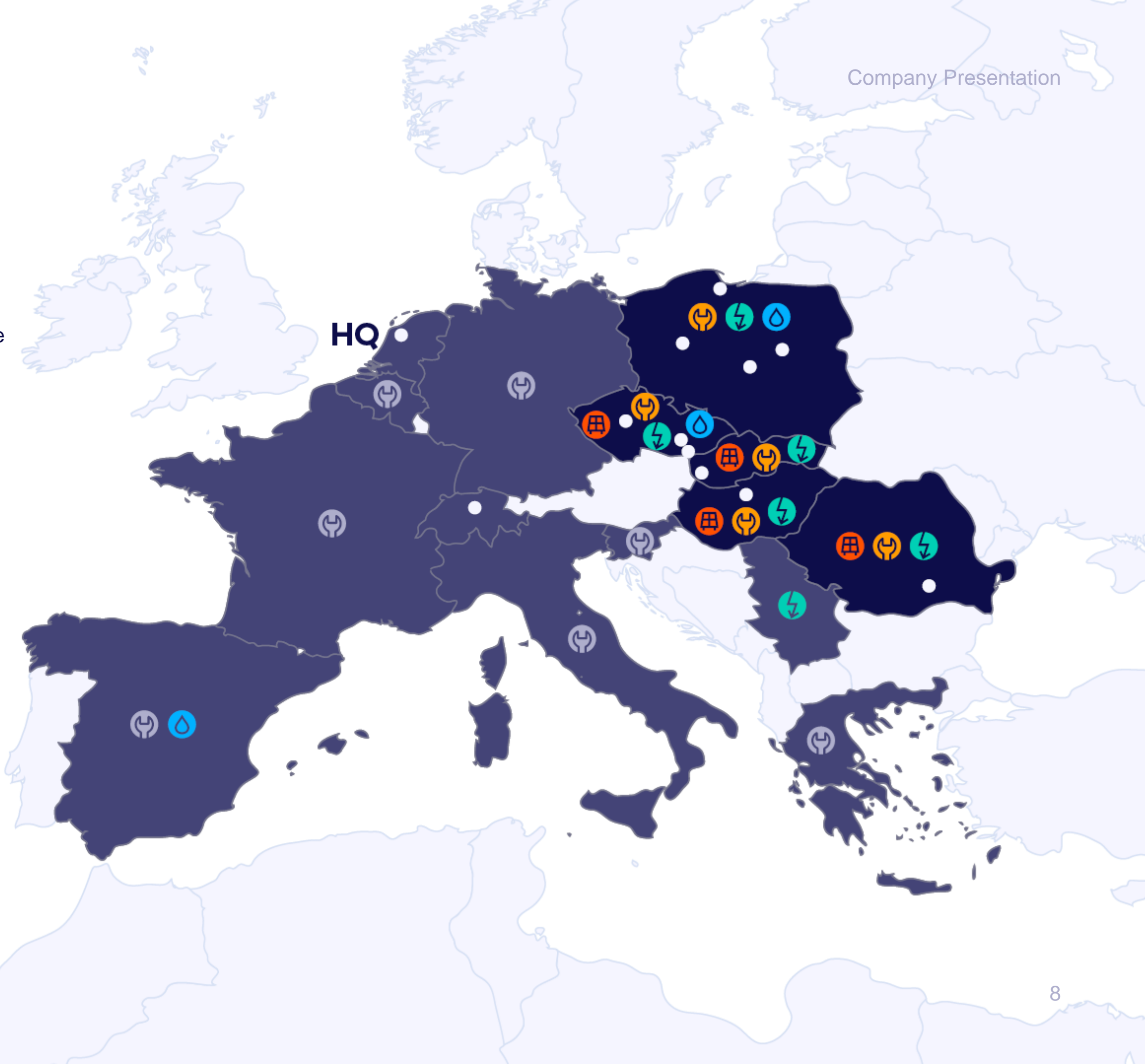
He joined the company in 2022 in order to strengthen our management team during this period of growth.

# Our Story



# Our Global Presence

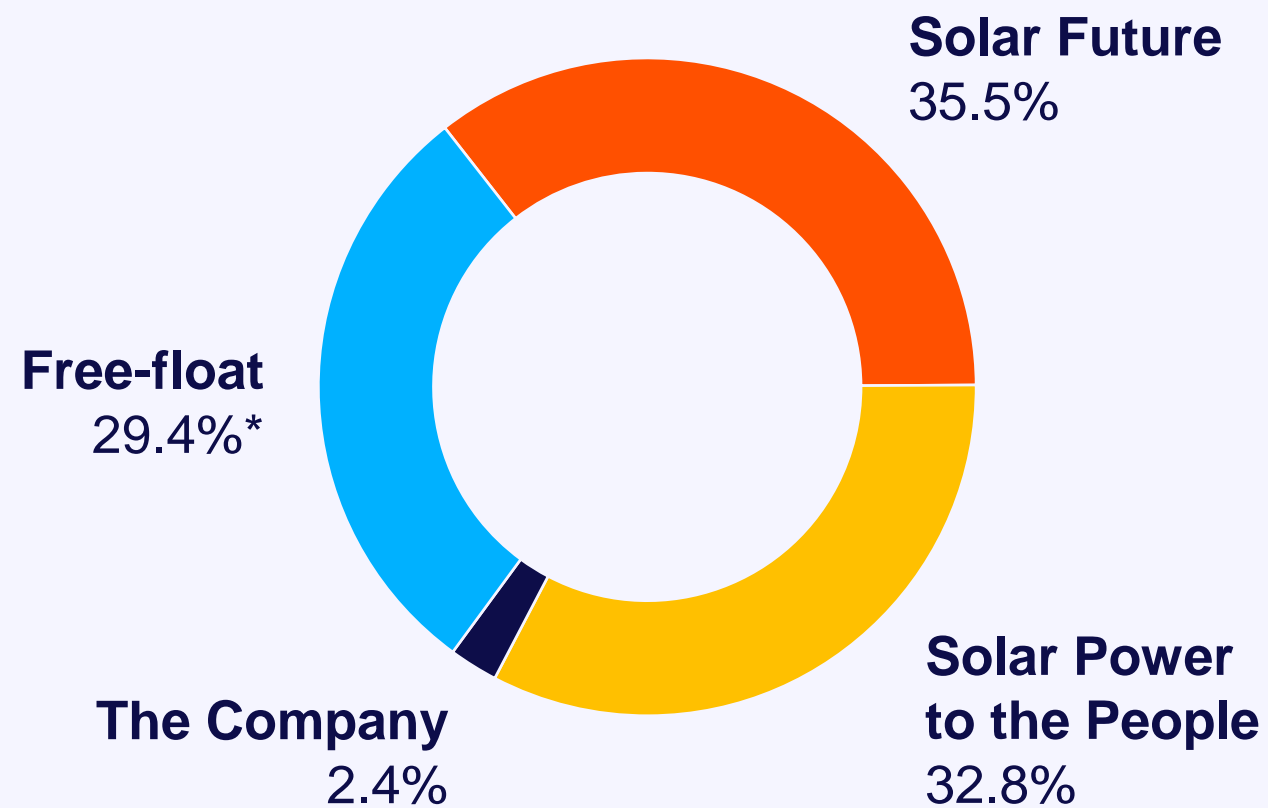
-  Power Plants Owned by Photon Energy Group
-  O&M Services for Power Plants
-  Energy Trading Licence
-  Inverter Maintenance Services
-  Photon Water Services
-  Photon Energy Group Offices





# Our Shares and Bonds

## Shareholding Structure



\* including Tomala Investments ASI Sp. z o.o. shareholding of 3.8%.

Solar Future and Solar Power to the People are controlled by the co-founders of Photon Energy N.V.

## Share (Warsaw, Prague & Frankfurt)\*

ISIN	NL0010391108
Shares outstanding	59,123,124
Free-float	17,919,820
Market cap 22.05.2024	EUR 105 million
Net debt 31.03.2024, at market value	EUR 137 million
Enterprise value 22.05.2024	EUR 242 million

\* Also listed on stock exchanges in Berlin, Munich and Stuttgart

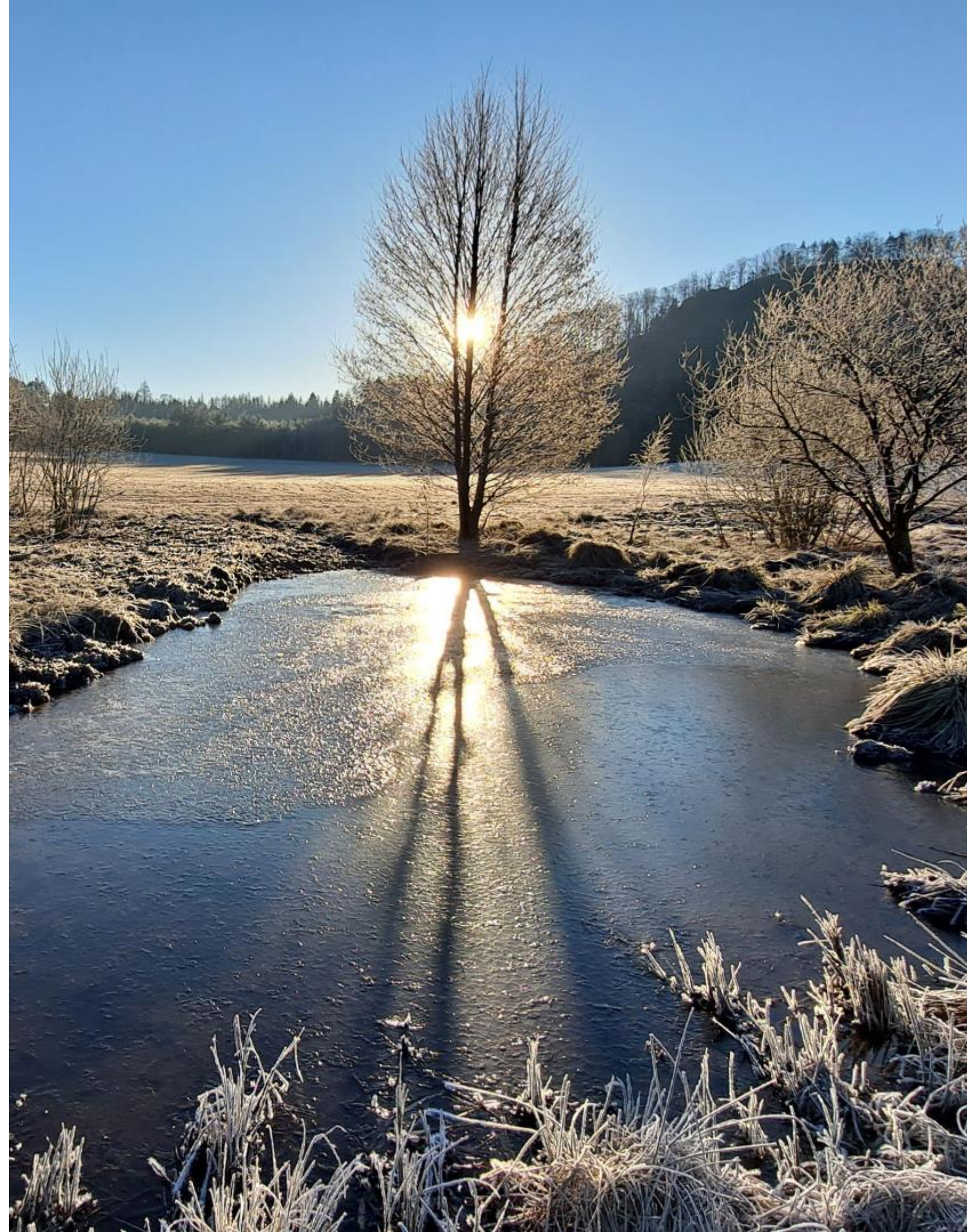
## Green Bond (Frankfurt)

ISIN	DE000A3KWKY4
Coupon (paid quarterly)	6.50% p.a.
Denomination	EUR 1,000
Redemption date	22. 11. 2027
Nominal value	EUR 79.4 million

# Sustainability Highlights

- ▶ All of our work is connected to **activities creating sustainable value to the environment.**
- ▶ **Wetland installation** in the Czech Republic to restore the local wetland habitats (biodiversity and residents).
- ▶ Container-based water treatment units to supply municipalities in **Peru with safe drinking water.**
- ▶ Hybrid solar system in Lord Howe Island with a customised fence to **protect endangered birds.**
- ▶ A **flexible working environment** adapted to COVID-19 crisis.
- ▶ A **Supervisory Board** was established.
- ▶ **First Sustainability report** released for the year 2020.
- ▶ **Sustainability rating renewed ('Very Good')** from sustainability rating agency imug | rating.

→ [Summary Report](#)





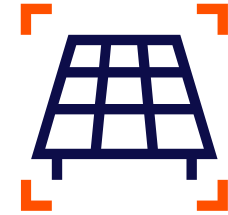
# Powering the Future

Our solar power and renewable energy solutions help make clean energy accessible to everyone.

# Photon Energy in Numbers



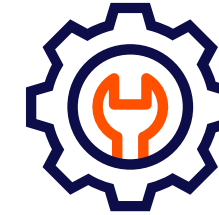
**180+ MWp**  
constructed



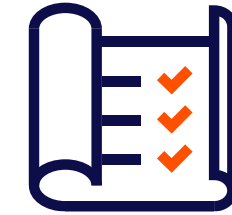
**129.7 MWp**  
proprietary portfolio



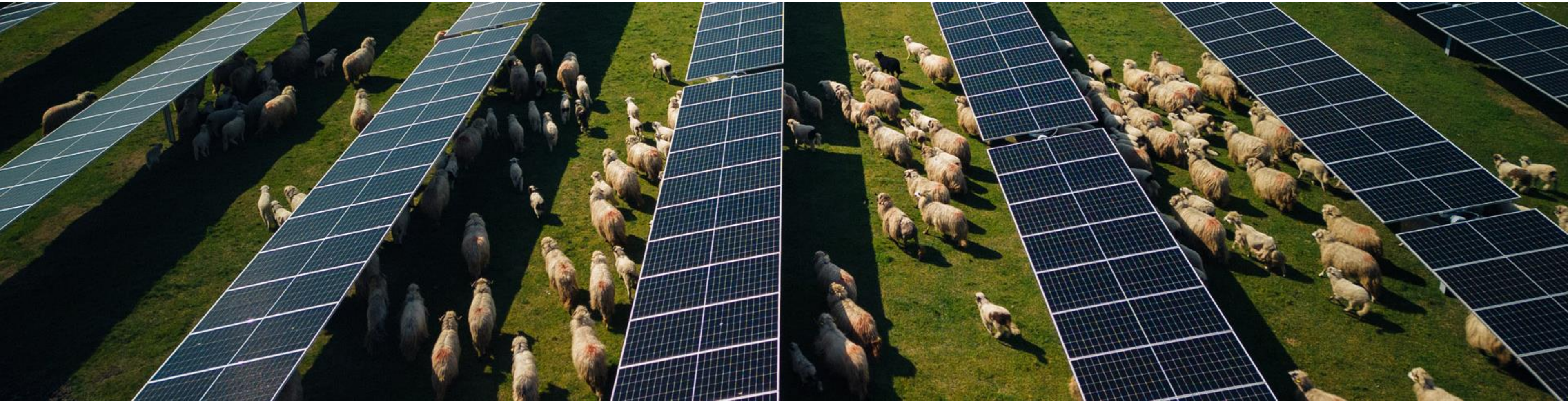
**139.8 GWh**  
produced in 2023



**800+ MWp**  
O&M portfolio



**1,024 MWp**  
project pipeline



# What We Do

**Our services cover the entire lifecycle of photovoltaic systems.**



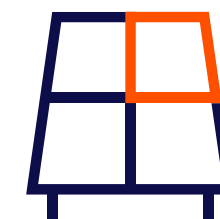
## Project Development

We **develop projects** in-house and **acquire them** at all stages of development.



## Engineering

We design and build **on- and off-grid** installations, including **energy storage solutions**.



## Technology

We procure and trade **PV components** to fit any project's location, design and budget.



## Energy Generation

We invest in PV power plants for the **sustainable** production and sale of **solar energy**.



## Operations and Maintenance

We provide a full range of O&M services, including **monitoring** and **inverter maintenance**.

# Project Development






## Solar energy solutions from concept to completion.

We acquire PV projects of all shapes and sizes, at all stages of development. Every solar energy project is unique, which is why our services are adaptable to fit the specific needs of our customers and partners. Our current project pipeline is **1,000+ MWp**.

- ▶ Land acquisition and location solutions
- ▶ Administration and financial planning
- ▶ Joint ventures
- ▶ Partnerships with banks and investors
- ▶ Technology and design



# Project Pipeline

Country	1. Feasibility	2. Early development	3. Advanced development	4. Ready-to-build technical	5. Under construction	Total in MWp
 Romania	8.4	80.1	61.7	36.4	3.2	<b>189.9</b>
 Poland	252.5	17.2	20.3	-	-	<b>290.0</b>
 Hungary	25.0	-	2.7	-	5.1	<b>32.7</b>
 Australia	90.0	-	159.8	-	-	<b>249.8</b>
 South Africa	-	262.0	-	-	-	<b>262.0</b>
<b>Total in MWp</b>	<b>375.9</b>	<b>359.3</b>	<b>244.5</b>	<b>36.4</b>	<b>8.3</b>	<b>1,024.4</b>



# EPC Solutions

**We design and build power plants with quality and longevity in mind.**

- ▶ Turnkey solutions for PV projects
- ▶ Consultancy and yield studies
- ▶ Concept design
- ▶ Project planning and management
- ▶ Counterparty negotiations and contracting
- ▶ Customised off-grid and energy storage solutions

Czech Republic	30.9 MWp
Slovakia	14.9 MWp
Hungary	52.5 MWp
Australia	27.2 MWp
Poland	1.0 MWp
Romania	53.5 MWp
Germany	1.4 MWp
Italy	1.3 MWp
<b>EPC delivered</b>	<b>182.7 MWp</b>





# Technology

**World-class technology  
delivering world-class performance.**

- ▶ High-quality and bankable modules on mono-facial and bi-facial basis
- ▶ High-performance monocrystalline PERC modules from Jinko Solar, Longi Solar and JA Solar
- ▶ Powerful and robust inverters
- ▶ Integrated power storage and backup systems
- ▶ Monitoring and control devices



# Operations and Maintenance

**We manage over 800 MWp worldwide.**

We maximise performance through preventive maintenance. The power plants we manage run with an average uptime of more than 99%.

- ▶ Preventive maintenance
- ▶ Service interventions
- ▶ Compliance & Reporting
- ▶ Performance monitoring
- ▶ Accounting services
- ▶ Security support
- ▶ Technical audits
- ▶ Due diligence
- ▶ Site maintenance



# Monitoring and Control

## Maximising yield while minimising cost.

We perform monitoring and analysis in real time for over 120 projects around the world. Through active dispatching, we can respond to any issues promptly and efficiently, helping our customers to minimise costly downtime.

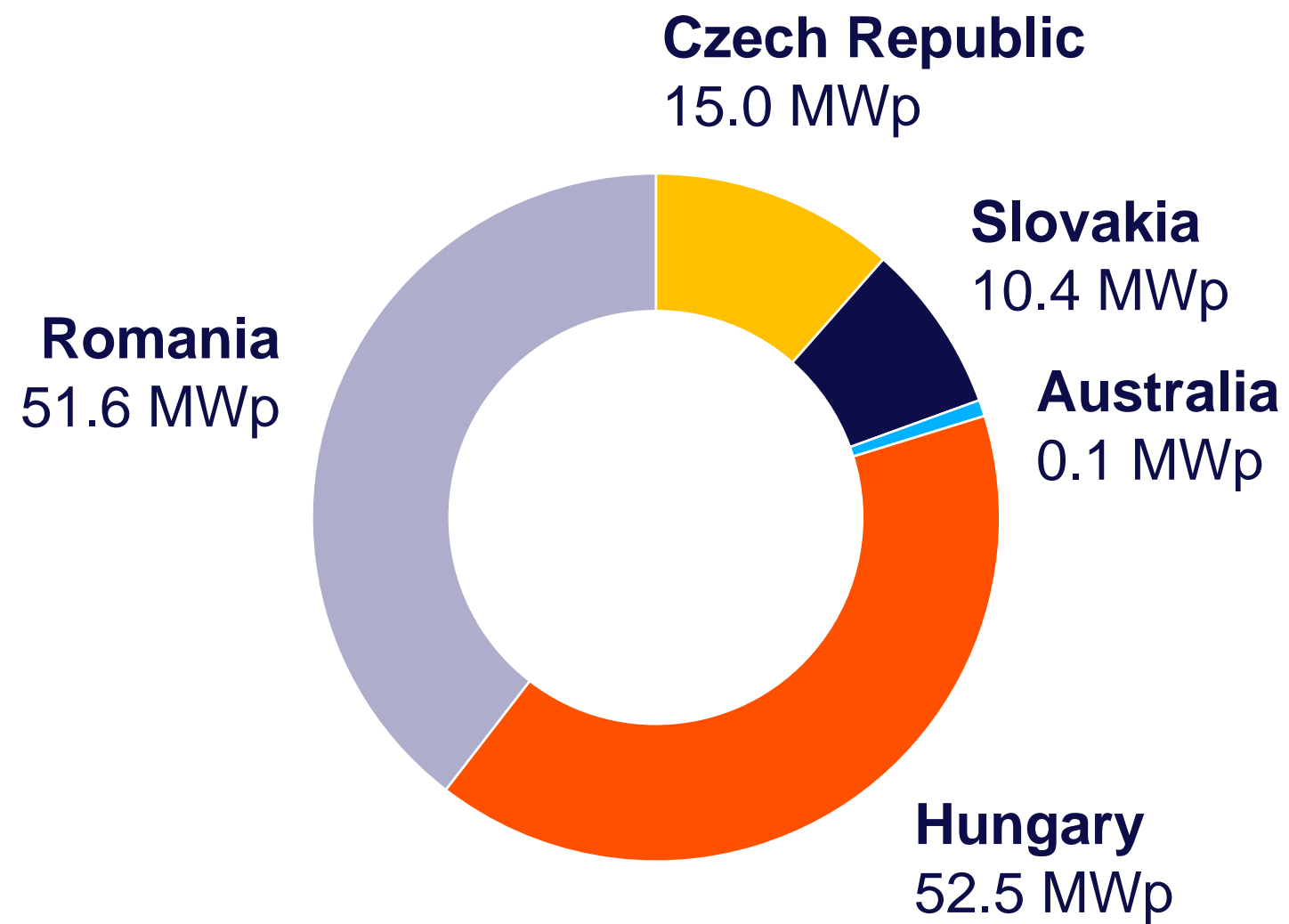
### Our monitoring platform PECOM:

- ▶ Optimises installation and hardware costs
- ▶ Detects problems quickly
- ▶ Is used by industry-scale owners, operators and investors
- ▶ Connects to external systems free of charge
- ▶ Includes 24/7 technical support
- ▶ Delivers reporting and notifications



# Investments

As an IPP, we own 100 PV power plants with a combined capacity of 129.7 MWp.



# Our Key Markets

## Czech Republic



EPC Solutions  
**30.9 MWp**



O&M  
**99.8 MWp**



Our Portfolio  
**15.0 MWp**



## Australia



EPC Solutions  
**23.6 MWp**



O&M  
**17.0 MWp**



Our Portfolio  
**0.1 MWp**



## Slovakia



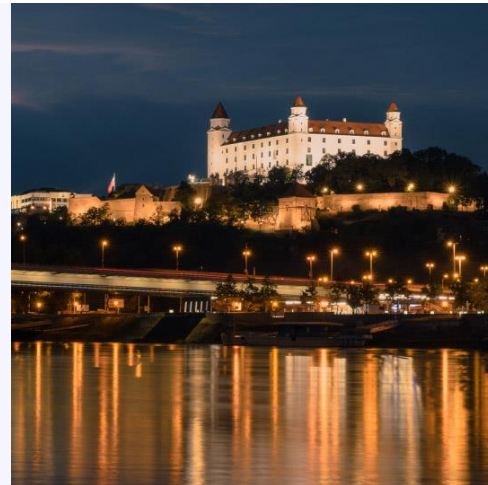
EPC Solutions  
**13.6 MWp**



O&M  
**15.3 MWp**



Our Portfolio  
**10.4 MWp**



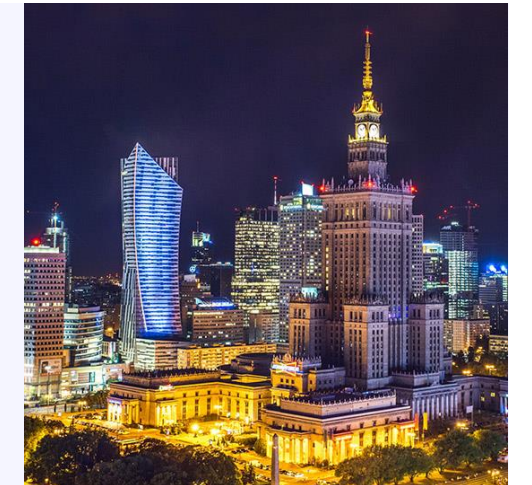
## Poland



EPC Solutions  
**1.0 MWp**



O&M  
**352.8 MWp**



## Hungary



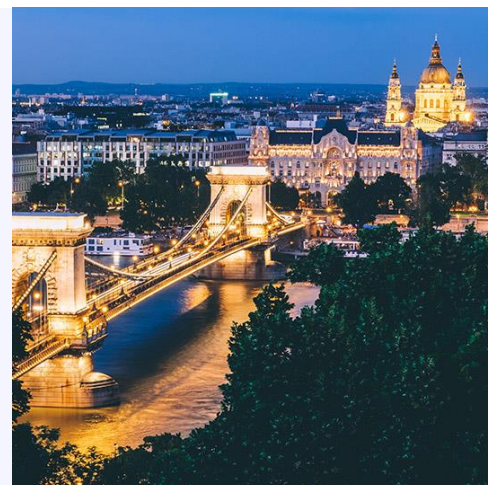
EPC Solutions  
**52.5 MWp**



O&M  
**271.7 MWp**



Our Portfolio  
**52.5 MWp**



## Romania



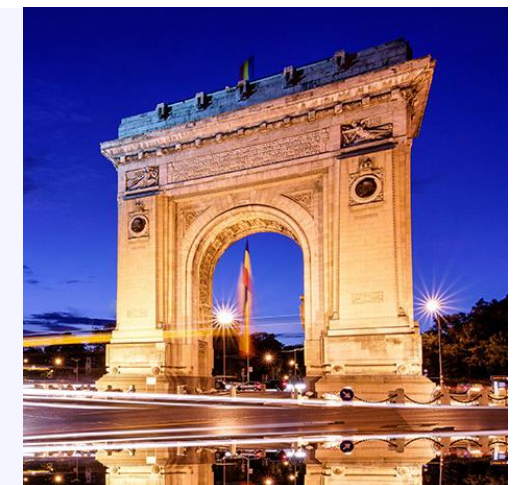
EPC Solutions  
**53.5 MWp**



O&M  
**93.4 MWp**



Our Portfolio  
**51.6 MWp**



# Australia

## Stable economic growth and rising energy demand.

- ▶ Australia's solar generation was 10.7% of its electricity demand in 2020 the highest penetration of any OECD country.
- ▶ It was ranked seventh largest solar market globally in 2020.
- ▶ Australia produced 27.7% from renewables in 2020. State and federal governments aiming for net-zero by 2050 or earlier.
- ▶ Currently over 11.3 GW of large-scale solar projects under development.



## Business Model

### Power Purchase Agreements (PPA)

- ▶ Long-term PPAs (10–15 years)
- ▶ Contracted and merchant revenues from sale of electricity
- ▶ Customers: local utilities or communities

### Sale of Electricity and Certificates

- ▶ Energy is sold through the National Energy Market
- ▶ Renewable generators receive certificates (LGCs and STCs)
- ▶ LGCs and STC prices are determined by market
- ▶ LGC certificates are currently valued at approx. AUD \$40
- ▶ Average solar curve prices are approx. AUD \$40 MWh

LGC = Large-Scale Generation Certificate, STC = Small-scale Technology Certificates

## Recent Projects

- ▶ Commissioning of our 12 proprietary power plants in Romania, with a combined capacity of **48.3 MWp**.
- ▶ 5 rooftop installations with a combined capacity of **860 kWp** for agricultural businesses in the Czech Republic.
- ▶ 25+ PV installations with a combined capacity of over **5 MWp** for industrial property developer Goodman in Australia.
- ▶ **1 MWp** rooftop power plant for a logistic center of a major online retailer in Romania.
- ▶ **950 kWp** PV power plant for municipal wastewater treatment facility serving city of Koszalin in Poland.
- ▶ Hybrid solar and battery storage system on **Lord Howe Island**, a UNESCO World Heritage Site.
- ▶ Two proprietary PV power plants with a combined capacity of **14.5 MWp** in Leeton, Australia.



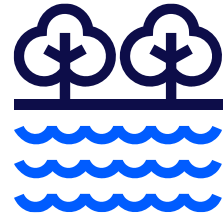


# Clean Water for a Healthy World

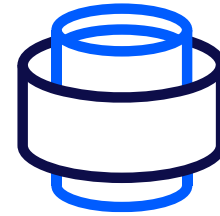
Water treatment and management  
solutions for all environments.



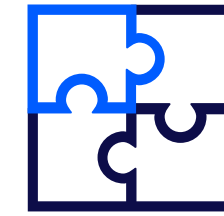
# Photon Water in Numbers



**605 ha** of lakes  
and ponds managed



**3500 m** of wells drilled,  
maintained or decommissioned



**47 partners**  
around the world

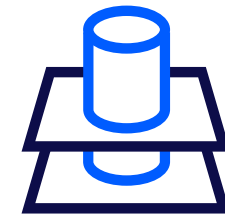


# What We Do

**Our comprehensive services and solutions help to make clean water accessible to everyone.**

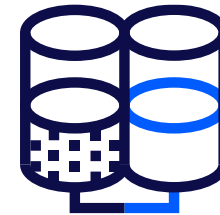
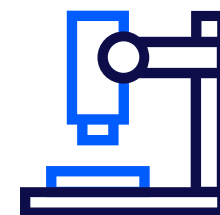
## Remediation

We offer a range of remediation services, including our unique nanoremediation solution, to eliminate contaminants from water and soil.



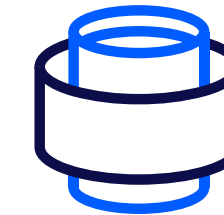
## Research and Development

We work with leading academic institutions and participate in governmental research programmes to develop cutting-edge clean water solutions.



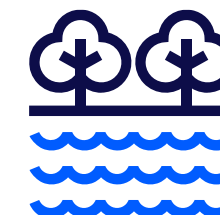
## Water Treatment

We deliver treatment solutions including potable and wastewater treatment, hazardous liquid waste and industrial water treatment.



## Wells and Resources

We provide complete services for wells and water resources, from planning and design to maintenance and decommissioning.



## Water Resource Management

We help our customers make the best, most efficient use of their water resources, such as lakes, ponds and industrial water bodies.

# Water Treatment

**Water treatment solutions to meet any challenge, in any environment.**

In addition to supplying both large- and small-scale **water treatment units**, we can provide a range of comprehensive, customisable solutions, including the treatment of:

- ▶ **Industrial wastewater.** Our services include EPC solutions and operations and maintenance.
- ▶ **Hazardous and non-hazardous liquid waste.** As well as technical treatment and management solutions, we can provide guidance in areas such as regulation and compliance and emerging waste strategies.
- ▶ **Potable drinking water.** We offer a variety of chemical programs and process-optimisation services for potable drinking water.



# Wells and Resources

## Complete solutions for new and existing water wells.

We have the expertise and proven track record to provide customised water well solutions using state-of-the-art technology and techniques.

Our services are comprehensive, and cover the complete lifecycle of water wells:

- ▶ Project development
- ▶ Drilling
- ▶ Diagnostics
- ▶ Regeneration
- ▶ Monitoring
- ▶ Decommissioning



# Water Resource Management

## Complete solutions for water systems and resources.

We provide comprehensive, customised solutions to help our customers successfully manage a wide range of water systems and resources.

- ▶ Small reservoir design and operational guidance
- ▶ Modification and revitalisation of small watercourses
- ▶ Water retention in the landscape
- ▶ Flood protection and prevention
- ▶ Erosion control
- ▶ Rainwater management
- ▶ Algae control in lakes and ponds



# Remediation

**Water and soil contamination are harmful to local communities and the Earth itself.**

Through the process of remediation, we remove harmful pollutants, leaving soil healthy and water safe to use.

Different methods of remediation are available depending on the site and the type of pollutants involved. We can guide our customers through every stage of the process to provide the safest, most effective remediation solutions.

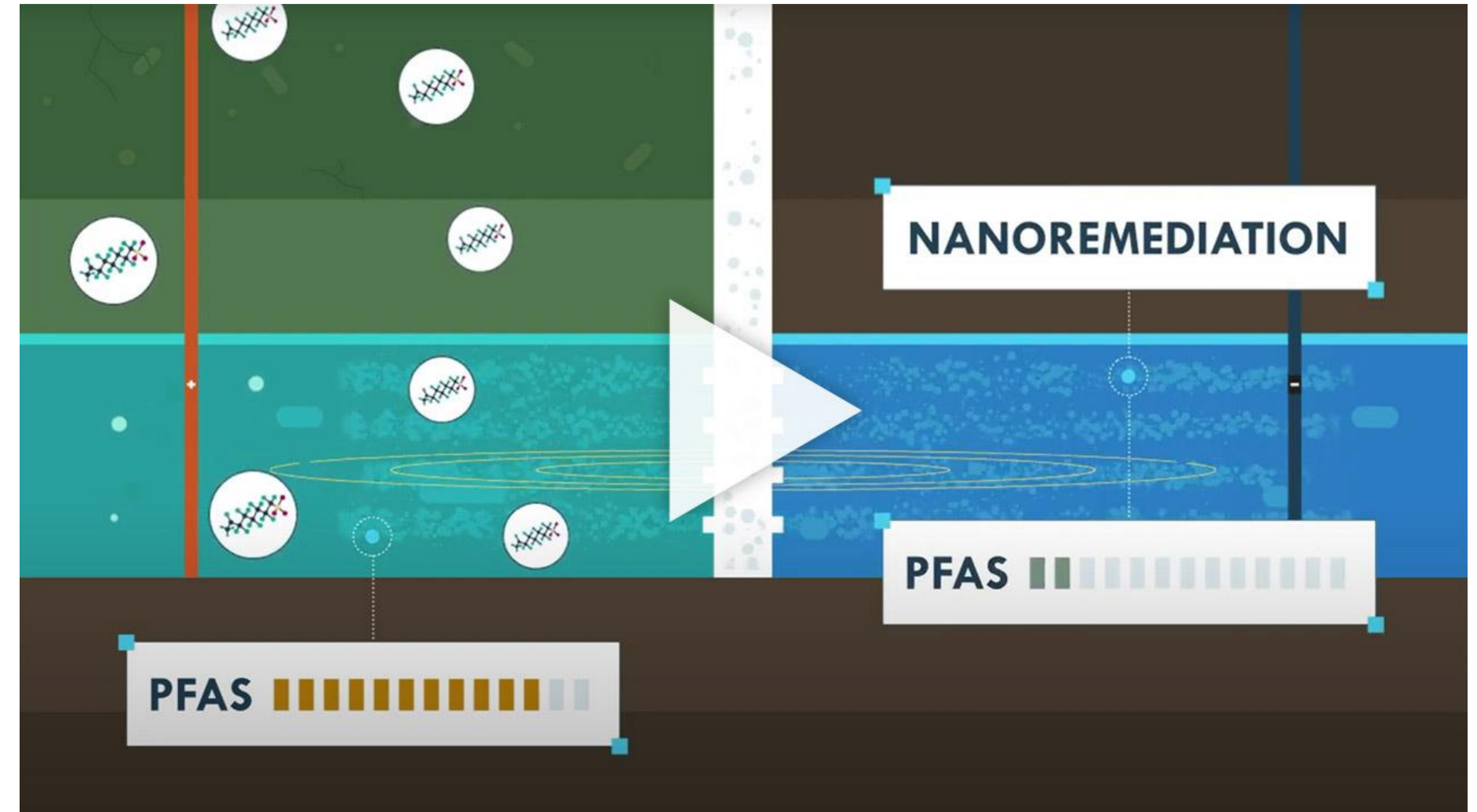
As part of our ongoing research and development work, we have developed a unique **nanoremediation** solution to address the growing problem of **Per- and polyfluorinated substances** (PFAS) contamination in ground water.



# Nanoremediation

**A unique method of removing harmful contaminants from soil and groundwater.**

- ▶ Per- and polyfluorinated substances (PFAS) are a group of chemicals used to make various industrial and household products.
- ▶ PFAS don't break down naturally, and they pose a serious risk to our health.
- ▶ We have devised a unique nanoremediation solution to manage PFAS contamination in ground water.





# References





# Large-scale Power Plant

Leeton, Australia

**14.5 MW<sub>p</sub>, 2021** (EPC, O&M)



# Ground-mounted Power Plants

**Siria, Romania**

**5.7 MWp, 2023** (EPC, O&M)



**Teius, Romania**

**4.7 MWp, 2023** (EPC, O&M)



**Monor, Hungary**

**5.6 MWp, 2019** (EPC, O&M)



**Tiszaékcske, Hungary**

**5.5 MWp, 2018** (EPC, O&M)



# Ground-mounted Power Plants

**Les Mees, France**

**18 MWp, 2014 (O&M)**



**Ellrich, Germany**

**1 MWp, 2012 (EPC)**



**Ráztoka, Slovakia**

**1 MWp, 2011 (EPC)**



**Tuřany Airport, Czech Republic**

**7.5 MWp, 2010 (EPC)**



# Rooftop Installations

**ALDI stores, Australia**

**4.6 MWp, 2019** (EPC, O&M)



**Symonston, Australia**

**200 kWp, 2016** (EPC, O&M)



**Biella, Italy**

**1 MWp, 2012** (EPC, O&M)



**Sydney, Australia**

**283 kWp, 2012** (EPC, O&M)



# Solar Storage

**Muswellbrook, Australia**  
**39 kWp / 216 kWh, 2014** (EPC, O&M)

Project designed in association with the German Energy Agency, Deutsche Energie-Agentur GmbH (dena), and the Australian communications infrastructure company BAI.



# Water Treatment and Management

## Water Treatment in Latin America, 2018–2020

Treatment of potable water for small and mid-sized communities in the Tacna and Cusco regions in Peru.



## Algae Control in Ponds and Reservoirs, Ongoing

Eco-friendly solutions for the elimination of harmful algae from water resources in popular recreation spots throughout the Czech Republic.





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