

# Maximizing solar investments with Photon Energy

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Lauru Bădiță – Country Manager O&M

# **WHO WE ARE**



# We develop, build, own and operate PV power plants worldwide

- Founded in 2008
- Headquartered in Amsterdam, the Netherlands
- Publicly listed company on Warsaw and Prague Stock Exchanges
- Partner of Canadian Solar in project development in Australia
- Separate business line of water purification and remediation services



Active in 10+ countries



**60 MWp**PV plants installed



Own portfolio 37.1 MWp



28.5 GWh produced in 2018



O&M services
250+ MWp



# **WE ARE GLOBAL**



# Our EPC and O&M presence

Country	EPC services	O&M services
Czech Republic	30.4 MWp	127.8 MWp
Slovakia	13.6 MWp	15.9 MWp
Germany	1.4 MWp	
Australia	1.1 MWp	1.4 MWp
Italy	1.3 MWp	
Hungary	11.5 MWp	26.8 MWp
Romania		15.0 MWp
Slovenia		2.0 MWp
Inverter Cardio		61.2 MWp
TOTAL	59.3 MWp	250.1 MWp

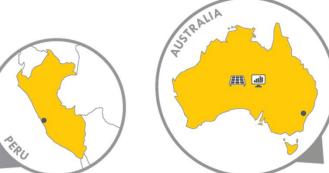




Other O&M services

Power plants under O&M

Offices



# WE ARE OWNER-MANAGED



## Our leadership team



Georg Hotar Chief Executive Officer and co-founder

Georg co-founded Photon Energy in 2008 and has led the group's expansion in Europe and overseas as CEO. Before Photon Energy, he established a finance and strategy advisory boutique focused on the CEE region and previously held various positions in financial services in London, Zurich and Prague.

Michael Gartner Managing Director of Photon Energy Australia and co-founder

Michael developed one of the first large PV installations in the Czech Republic before co-founding Photon Energy in 2008. He rolled out the company's business in Australia in 2012 and is instrumental in driving Photon Energy's off-grid and solar-hybrid power solutions.





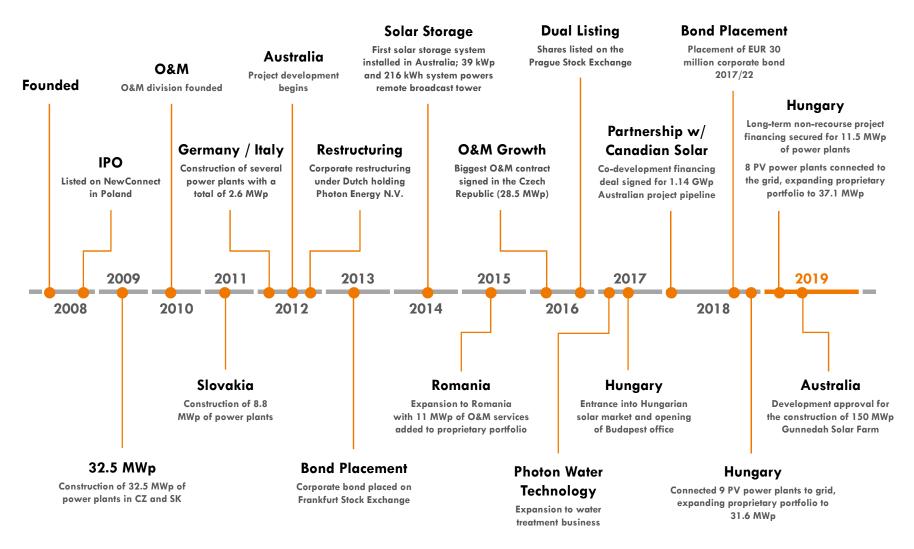
Clemens Wohlmuth Chief Financial Officer

Clemens joined Photon Energy in 2012 and is responsible for the group's overall financial strategy and direction. He contributes many years of experience in financial management, having run his own consulting practice focused on financial services and interim management.

# **OUR MILESTONES**



#### Shaping the future of solar energy



# LIFECYCLE EXPERTISE



# We manage your projects from start to finish

#### **PROJECTS**

Project development for rooftop and green-field installations from 300 kWp to 300 MWp

#### **OPERATIONS SOLUTIONS Design and construction Operations and maintenance** 24 h of PV power plants, of on-grid and off-grid including own control room installations, including and monitoring platform battery storage solutions **TECHNOLOGY INVESTMENTS** Investments in PV power plants **Trading of PV components** for the sustainable production (panels and inverters) and sale of solar energy

# **PROJECTS**

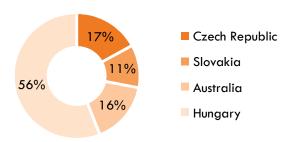


# Expansion of proprietary portfolio from 37.1 MWp to 89.4 MWp by 2020

- Clear focus on Australian and Hungarian markets, further markets being analysed
- Market entry already underway in target markets

Nr.	Country	Planned capacity
1	Czech Republic	15.0 MWp
2	Slovakia	10.4 MWp
3	Australia	14.0 MWp
4	Hungary	50.0 MWp
TOTAL PORTFOLIO (Plan 2020) 89.4 MW		





#### **Australia**

- Active since 2011
- Experienced team led by co-founder
- Several power plants built and connected
- Co-development financing agreement signed for 1.03 GW with Canadian Solar



#### Hungary

- Active since 2016
- Development of own projects
- First 17 PV power plants built and connected with a total capacity of 11.5 MWp
- Cooperation with local developers and banks:
   long-term project financing secured for 11.5 MWp

# **OPERATIONS & MAINTENANCE**



# We manage more than 250 MWp worldwide

Our O&M services are always set up to achieve the highest possible production and performance throughout its lifespan.





Preventive maintenance



Service interventions



Compliance & Reporting



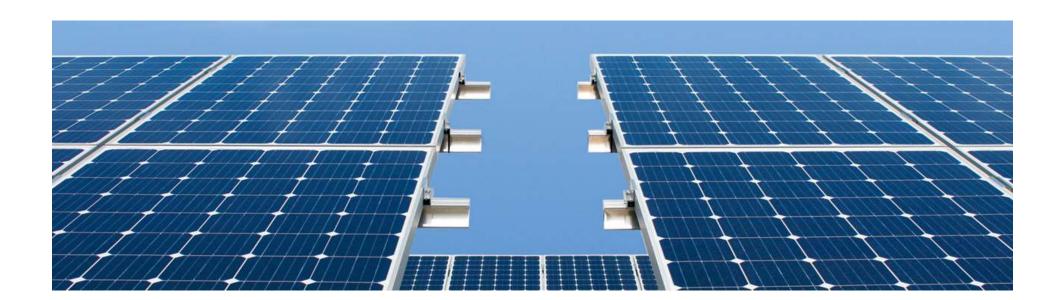
Performance monitoring



Accounting services



Security support



# MONITORING AND CONTROL



# Maximise yield while minimising cost

We developed a fully-integrated solar monitoring solution with intelligent software that provides comprehensive monitoring and control of your PV power plants.

- Optimises installation and hardware costs
- Detects threats in a timely manner
- Used by industry-scale owners, operators and investors
- Connects to external systems free of charge



- Provides expert technical support available
   24/7
- Delivers reporting and notifications



# **INVERTER CARDIO**



# Fix my PV inverter

#### Cost effective:

We repair inverters for cheaper than original manufacturers

#### Fast response time:

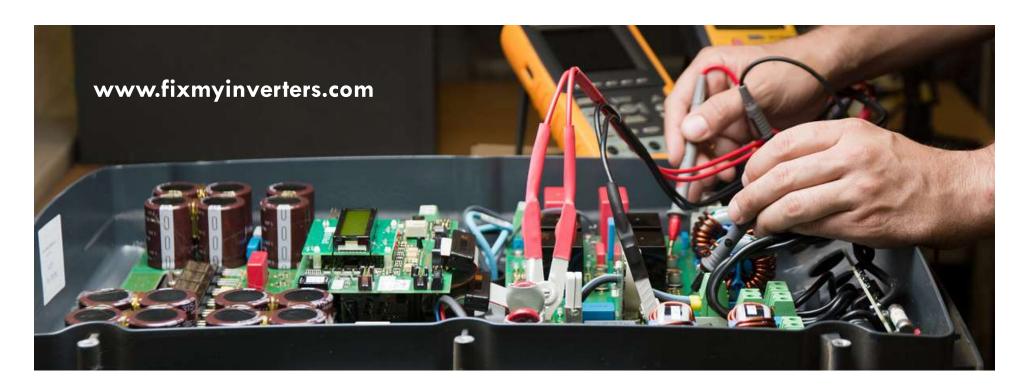
Dispatches in 48 h guaranteed

#### **Costs under control:**

Up-front repair cost estimate

#### **Experts at work:**

Our repair shop has repaired over 4000 string inverters to date



# **TECHNOLOGY**



# Solving the world's biggest problems with world-class technology

We focus on the procurement of technology and logistics for the construction of power plants in our proprietary project portfolio as well as for a range of international external clients.

- High-quality, bankable crystalline modules
- High-performance mono PERC modules from Longi Solar, JA Solar and Jinko Solar
- Powerful and robust inverters
- Integrated power storage and backup systems
- Monitoring and control devices











# PHOTON WATER TECHNOLOGY



## Applying our PV expertise to power our clean water solutions

#### **PURIFICATION AND TREATMENT**

Drinking water treatment using near-nature methods, emergency units, recycling of gray water

# RESEARCH AND DEVELOPMENT

Close cooperation with leading academic institutions, participation in national and EU research programmes

# PHOTON WATER WATER WAT

# CONTAMINATED LAND REMEDIATION

Nanoremediation, steam enhanced extraction, reactive barriers, in-situ remediation, design services, monitoring

#### WATER RESOURCES

Complete services including new resources, pumping tests, well diagnostics, regeneration, remediation and decommissioning of wells

#### **WATER MANAGEMENT**

Studies and projects, storm water, selfoperating sites, small water reservoirs and watercourses, flood protection and prevention, algae control



# Largest project to date



Tuřany Airport, Czech Republic 7.5 MWp, 2010



# **Ground-mounted power plants**



Almásfüzitő, Hungary 5.5 MWp, 2019



Tiszakéscke, Hungary 5.5 MWp, 2018



Les Mees, France 18 MWp (Inverter Cardio)



Raztoka, Slovakia 1 MWp, 2011



# **Rooftop installations**



Sydney, Australia 283 kWp, 2012



Symonston, Australia 200 kWp, 2016



Biella, Italy 1 MWp, 2012



Sydney, Australia 99 kWp, 2015



# Solar storage



Muswellbrook, Australia 39 kWp / 216 kWh, 2014

# **LOOKING FORWARD**



# **Building a brighter future**

- Contributing to major growth phase in the Australian PV market driven by large-scale and commercial-scale solar projects
- Building 50 MWp of self-owned power plants in Hungary by 2020

- Further solidifying our position as a leading
   O&M provider in the CEE region
- Continue developing innovative solar solutions
- Expanding our sustainable water treatment solutions



# **CONTACT**



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