



COMPANY PROFILE

THE FLOATING SOLAR EXPERT

www.cieletterre.net





THE FLOATING SOLAR EXPERT

WHO WE ARE

Ciel & Terre® has been developing floating solar photovoltaic (PV) plants for commercial, industrial, and local government institutions since 2011. Our team has a thorough understanding of PV power plant integration and we manage all aspects of a project's development by supplying design, engineering, financing, construction, and operations and maintenance services.

Initially, Ciel & Terre® specialized in rooftop and ground-mounted PV systems, but has followed the path of innovation to develop the patented Hydrelio® technology, mixing solar and water. As the floating solar pioneer and expert, we provide our solution all over the world through strategic partnerships. Today, over 90 MWp of floating solar PV systems utilize the Hydrelio® technology and we expect this number to increase to 200 MWp in 2017.

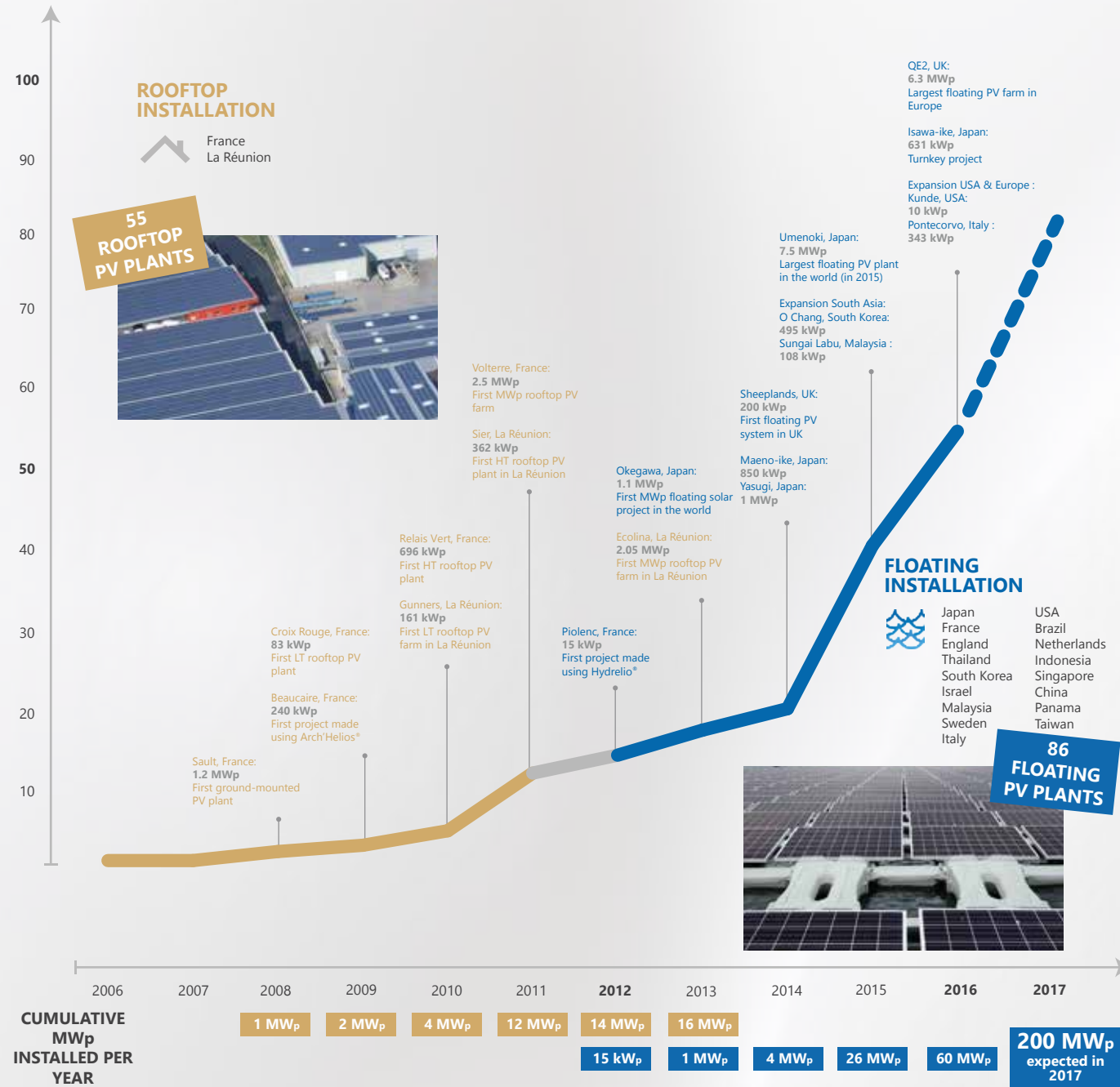
10 YEARS
SOLAR PV
EXPERIENCE

7 PATENTS
& TRADE COMMUNITY
MARK REGISTERED

8 LINES
OF MANUFACTURING
ON 3 CONTINENTS



**CAPACITY
IN MWp**



PROJECTS OVERVIEW

86 FARMS
OF FLOATING PV
IN TOTAL

92 MWP
OF GRID-CONNECTED
FLOATING PV PROJECTS

190 MWP
ON-GOING
FLOATING PV PROJECTS

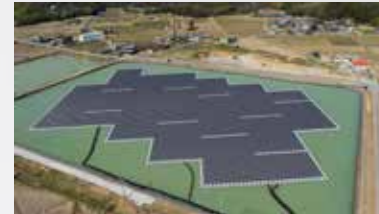
JAPAN



OKEGAWA - 1,180 kWp



MAENO-IKE - 848 kWp



KATO-SHI - 2,870 kWp



UMENOKI - 7,550 kWp



SOHARA-IKE - 2,398 kWp

EUROPE



SHEEPLANDS, UK - 200 kWp



POLYBELL, UK - 471 kWp



GODLEY, UK - 2,991 kWp



PONTECORVO, ITALY - 343 kWp



QE2, UK - 6,338 kWp

AMERICAS



ORLANDO, USA - 5 kWp
(extension 900 kWp)



KUNDE, USA - 10 kWp
(extension 744 kWp)



MIRAFLORES, PANAMA - 24 kWp



BALBINA, BRAZIL - 4,992 kWp



ORLANDO UTILITIES, USA - 32 kWp

ASIA



O CHANG, SOUTH KOREA - 495 kWp



SUNGAI LABU, MALAYSIA - 108 kWp



ULU SEPRI, MALAYSIA - 270 kWp



AGONGDIAN, TAIWAN - 2,320 kWp



PEI COUNTY, CHINA - 9,982 kWp

HISTORICAL MILESTONES



2006

Foundation of Ciel & Terre

2009

Development of Arch'Helios®

2010

Development of Hydrelio®

2013

- CTI Holding
- CTJ (Japan)

2015

- JV UK + China
- License KOR

2016

- JV CTB (Brazil)
- CT US (USA)
- CTT (Taiwan)

2017

CTI ASEAN and Oceania (Malaysia)



WHY FLOATING SOLAR?

Solar energy is a clean and renewable alternative to fossil fuels, and floating solar provides even more benefits to resource intensive industries. By covering a significant surface area on a body of water, the system conserves water by reducing evaporation, while the shading from its panels limits algae growth. The system presents no risks or dangers to wildlife and surrounding habitats when implemented. Furthermore, the natural cooling effect provided by the water allows the PV panels to operate more efficiently and produce more power than traditional ground-mounted systems.

Hydrelio® is the perfect solution for many types of water bodies, including dams, quarry lakes, irrigation or water reclamation reservoirs, and water treatment holding ponds. Additionally, these man-made water bodies are typically unobstructed from the sun, kept out of sight, and located near energy-intensive processes making these spaces ideal candidates for solar PV systems.



ENVIRONMENTAL BENEFITS

- Neutral or positive environmental impact.
- Minimizes water evaporation, conserves water and preserves existing ecosystems.
- Improves water quality and reduces algal bloom.
- Limits erosion of reservoir embankments by reducing wave action.



ECONOMIC BENEFITS

- Converts unused spaces into profitable areas.
- Reduces grid-connection costs enjoying existing electrical infrastructures nearby.
- Smoothest & fastest development processes.
- Enhances electricity generation thanks to water's natural cooling effect on the system.



SOCIAL BENEFITS

- Preserves valuable land and water for agriculture or other uses.
- Rehabilitates contaminated areas generating clean energy.
- Compatible with recreational activities.
- Environmental amenity, positive aesthetics.





WATER RETENTION POND

Kunde, USA - 10 kWp



DRINKING WATER POND

QE2, UK - 6.3 MWp



IRRIGATION RESERVOIR

Kawarayama, JP - 1.4 MWp



WATER TREATMENT RESERVOIR

Godley, UK - 2.9 MWp

FLOATING PV APPLICATIONS

- Industrial water ponds
- Quarry/Mine lakes
- Irrigation reservoirs
- Retention ponds
- Desalinization reservoirs
- Water treatment sites
- Drinking water surfaces
- Aquaculture Farms
- Dams / Canals
-



AQUACULTURE POND

Yothathikan, TH - 5 kWp



HYDROELECTRIC DAM

Sobradinho, BR - 4.9 MWp



INDUSTRIAL WATER POND

Kato-shi, JP - 2.8 MWp



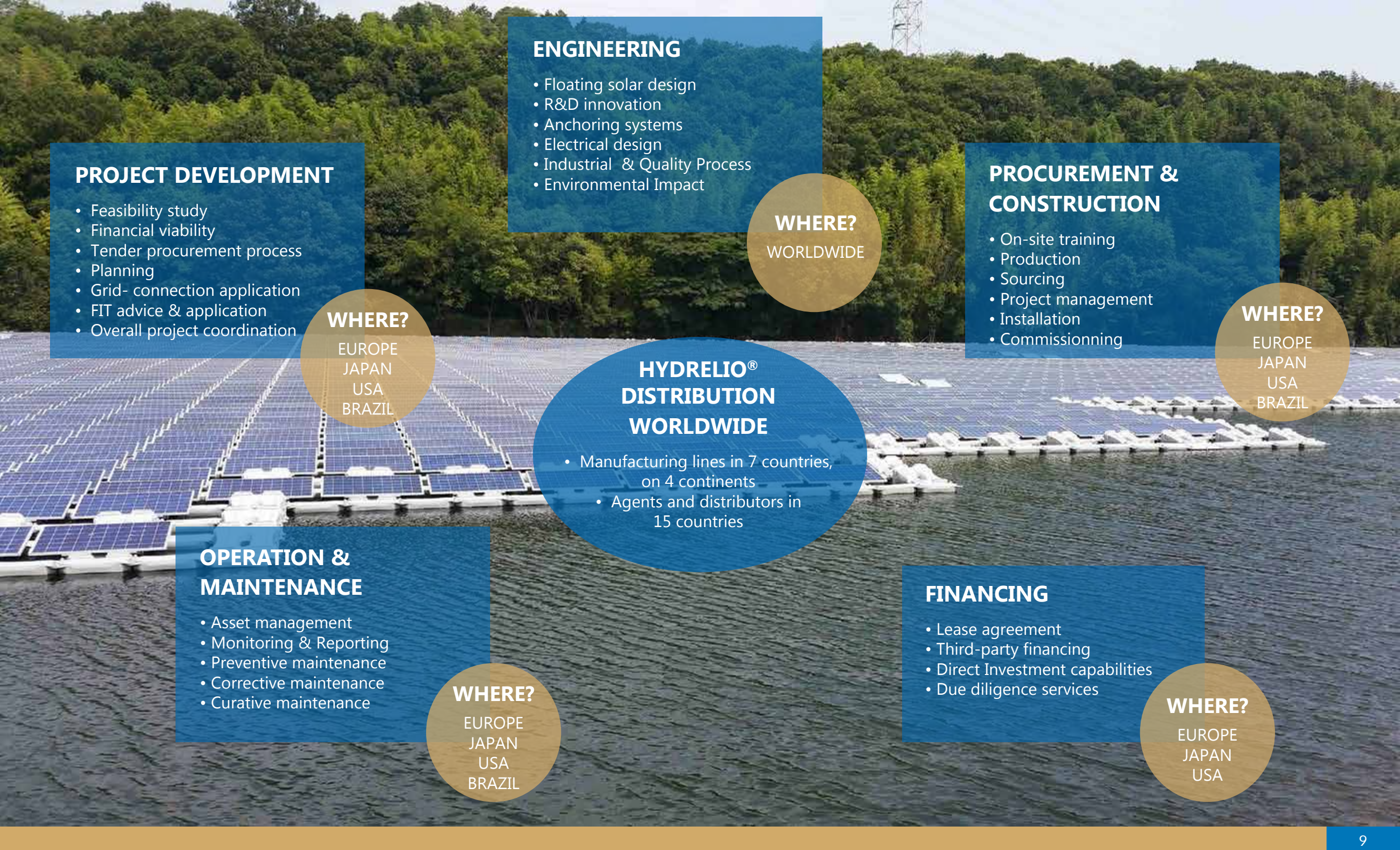
QUARRY LAKE

Piolenc, FR - 15 kWp

WHAT WE DO

From site selection to system operation and maintenance, Ciel & Terre® can handle the whole installation process of a solar power plant, working with PV market experts in many countries.





ENGINEERING

- Floating solar design
- R&D innovation
- Anchoring systems
- Electrical design
- Industrial & Quality Process
- Environmental Impact

WHERE?

WORLDWIDE

PROCUREMENT & CONSTRUCTION

- On-site training
- Production
- Sourcing
- Project management
- Installation
- Commissioning

WHERE?

EUROPE
JAPAN
USA
BRAZIL

PROJECT DEVELOPMENT

- Feasibility study
- Financial viability
- Tender procurement process
- Planning
- Grid- connection application
- FIT advice & application
- Overall project coordination

WHERE?

EUROPE
JAPAN
USA
BRAZIL

HYDRELIO® DISTRIBUTION WORLDWIDE

- Manufacturing lines in 7 countries, on 4 continents
- Agents and distributors in 15 countries

OPERATION & MAINTENANCE

- Asset management
- Monitoring & Reporting
- Preventive maintenance
- Corrective maintenance
- Curative maintenance

WHERE?

EUROPE
JAPAN
USA
BRAZIL

FINANCING

- Lease agreement
- Third-party financing
- Direct Investment capabilities
- Due diligence services

WHERE?

EUROPE
JAPAN
USA

HYDRELIO® TECHNOLOGY

MANUFACTURING

Efficient and fast blow-molding manufacturing process:

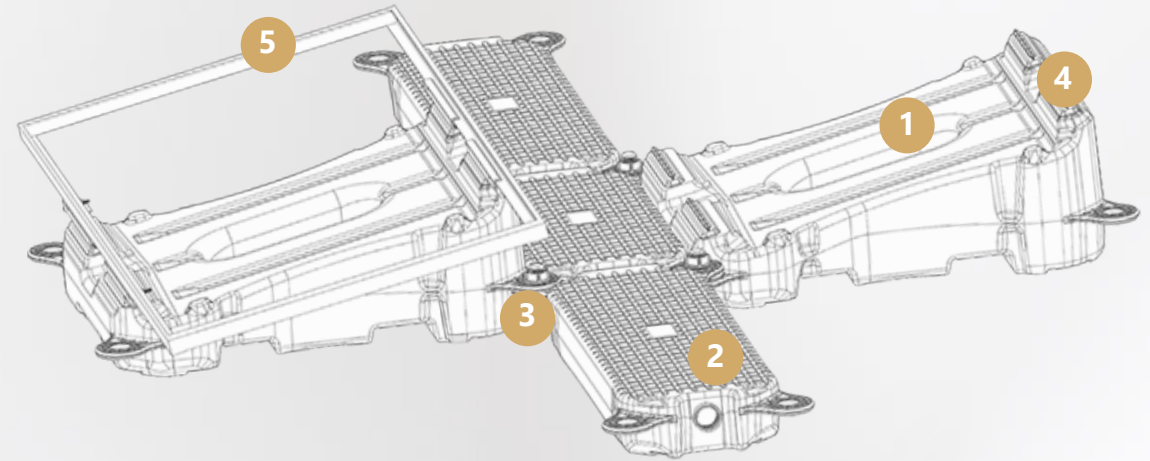
- 2 weeks to manufacture a 1.5 MWp system
- Production lines in 7 countries, 4 continents and one planet.



SHIPPING

Compact sets for easy shipment/storage:

1 MW_p = 25 - standard truck loads or
= 29 - 40' High cube containers



1

MAIN FLOAT SUPPORTING THE PV MODULE

HDPE material
Inclination angle: 12°

2

SECONDARY FLOAT FOR MAINTENANCE/BUOYANCY

HDPE material
Non-slipping surface

3

CONNECTION PIN

Fiberglass + PP material
Certification NFT 58 000

4

RAIL TO ATTACH THE PV MODULE TO THE FLOATS

Aluminium or fiberglass + PP rail
Certificated ISO 3302-1/1996

5

STANDARD FRAMED 60 OR 72 CELLS PV MODULE

60 CELLS

Length : max 1670 mm
Width : 991 ± 3 mm
Cable length : 1000~1200 mm
Connector : MC4 compatibility

72 CELLS

Length : max 1975 mm
Width : 991 ± 2 mm
Cable length : 1000~1200 mm
Connector : MC4 compatibility



BS 6920:2000
WATER DRINKING



A 5-YEAR WARRANTY
(standard)
UP TO 20 YEARS
(optional)

INSTALLATION

Easy and quick mounting on the banks or on a platform: no heavy tools needed, panel fixation by sliding.

INDICATIVE RATIO :

1 kW_p/HOUR/WORKER



Site preparation



Panel fixation



Float assembly



Launching

Hydrelio® floats are made of HDPE through a blow-molding manufacturing process. This highly resistant composition gives the system a 20+ year lifetime.



The Hydrelio® system is designed to be easily and quickly deployed.



Drinking water compliance tested by the English Independent Water Quality Control Center.



Tested by ONERA (the French aerospace laboratory). Hydrelio® technology can withstand winds up to 210 km/h* (130 mph).



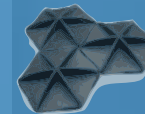
* Projects can be specifically studied and adapted to deliver higher system wind-resistance.

HYDRELIO® BENEFITS



OPTIONAL TECHNOLOGIES

Different systems are available to completely cover the water surface to reduce evaporation and minimize algal growth.



SUNGO®, a patented Solar aerator/oxygenator, for treating polluted water.



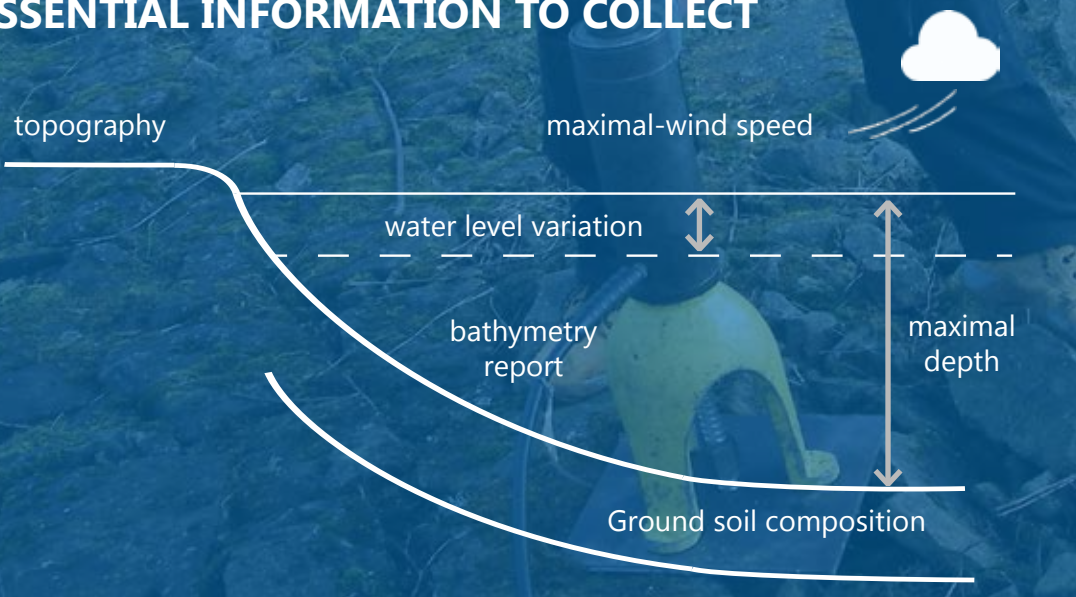
Battery system to provide continuous power, peak shaving.



ANCHORING SOLUTIONS



ESSENTIAL INFORMATION TO COLLECT



DESIGN

In partnership with the French Aerospace Lab, Onera, we tested our system to the most extreme winds scenarios to modelize the maximum loads acting on our structures.

Basing our calculations on this study and our experience, we design all our anchoring system to be :

- resistant to the worst case scenarios ;
- economically optimized ;
- adapted to each site & local regulation constraints.



TAILOR-MADE SOLUTIONS

Every single project is different and adapted to direct environmental characteristics in order to provide a long lasting anchoring solution :



Can be designed to withstand winds up to 210 km/h*.

* Projects can be specifically studied and adapted to deliver higher system wind-resistance.



Resists up to 4,000 daN
1.6 tons per spreader bar

INSTALLATION

We deliver, install and supervise the mooring deployment.



- Bottom anchoring
- Bank anchoring





BERNARD PROUVOST
Founder and Chairman



ALEXIS GAVEAU
CEO

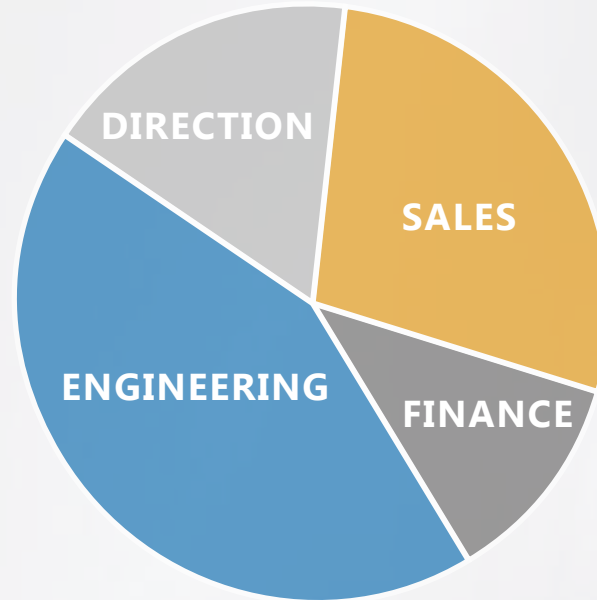


90+ COLLABORATORS
WORLDWIDE

20 COMMERCIAL
& TECHNICAL
PARTNERS

8 LOCAL
OFFICES

11 YEARS
EXPERIENCE



CTI'S HUMAN RESOURCES

CORPORATE FIGURES

At Ciel & Terre®, our mission is to **deliver high quality services** to our clients, by investing in R&D to improve our system and recruiting experts in the solar market. Today, our team counts more than 90 collaborators worldwide, mainly composed of **engineers and business developers**, who will accompany you throughout the development of your projects.

We are proud to develop our activity all over the world, setting up partnerships based on **trust, transparency & our passion** for sharing the best practices and knowledge of our mutual market.



In 2015, we welcomed the company TCC (Tokyo Century Corporation) as a valuable shareholder. The company manages & operates billions of dollars of assets among which solar energy is a key target.





WWW.CIELETTERRE.NET



CONTACT@CIELETTERRE.NET



OFFICES



Founded in France with headquarters in Lille, Ciel & Terre® has been expanding and entering new markets. We provide our solar solutions all over the world through our subsidiaries and partners.

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