

Air Solar

SOLUTIONS

UNE MARQUE DU GROUPE AIRWELL

FRILIOS

The autonomous solar powered cold room

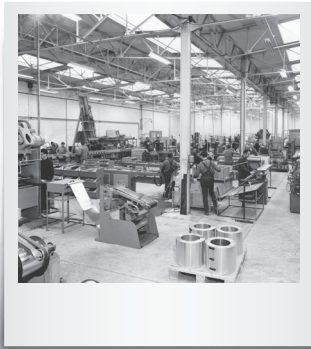


Innovation
**made in France
by Airwell**

Airwell

YOUR FRENCH REFERENCE

for over 75 years



Airwell, a French thermal equipment manufacturer committed to the energy transition

A French referenced brand for professionals

As an expert and creator of climate and thermal solutions, Airwell's mission is to create and cultivate well-being. Airwell is committed to:



Reinventing uses

→ To limit our environmental footprint.



Optimising consumption

→ To consume less and better.



Promoting solar energy

→ To preserve natural resources.

Historical French manufacturer

- 1947 ● **Creation of the Airwell Group**, the French pioneer in heat pumps.
- 1970 ● Airwell becomes **the leading European** heat pump manufacturer. Leader in Europe and Africa.
- 2008 ● Industrial disengagement and restructuring of the Airwell Group.
- 2014 ● Launch of the **Airwell 2.0** strategic project (the transformation from a heat pump manufacturer to a solution provider).
- 2020 ● Launch of our offer for private customers: **Hybrid house**.
- 2021 ● **Airwell becomes Airwell Group** following the acquisition of Airwell Residential by Airwell Distribution. **GRUPE AIRWELL**
- 2022 ● Integration of the **CSR approach** into the strategy and award of the **"Innovative Company"** label by BPI France. Launch of our Renewable Energy offer.
- 2023 ● Airwell Group acquires Amzair Industrie and sets up its **Airwell Industrie** production site in Brittany to enrich the Group's ecosystem in the design and manufacture of **100% French and connected heat pumps**.

Want to invest and become a contributor in the energy transition?

A propitious context:



→ Airwell, the French reference for heat pumps



→ A market driven by new environmental standards



→ A CSR approach at the heart of Airwell



→ A strategy of conquest driven by the new management



→ Airwell, French expert and manufacturer since 1947



→ Innovative energy-efficient solutions

I become a shareholder

All the steps are detailed on our website:

groupe-airwell.com/en/become-a-shareholder/



110
employees



70+
service partners



200+
business partners



80
Airwell operates
in 80 countries



AFTER-SALES AND QUALITY SERVICE

Our interactive voice server (IVR) has been redesigned in order to provide a more efficient and effective customer service. Our responsiveness and professionalism provide a benchmark level of service.

+33 (0)1 76 21 82 95

Monday to Friday 9 am-1230 pm / 2 pm-5 pm

TECHNICAL SUPPORT

sav@airwell.com

ORDER SPARE PARTS

sp@airwell.com

TABLE OF CONTENTS

p.5	Services dedicated
p.7	About the AirSolar Solution Frilios
p.8	Frilios, the autonomous solar powered cold room
p.10	The cold room
p.11	Additional photovoltaic kit for maximum power output
p.12	Applications
p.14	Connectivity and monitoring
p.15	Parteners & supports
p.16	Cooling as a Service (CaaS)

SERVICES DEDICATED

to making your life easier

Do you need technical assistance in determining the right parts, wiring diagrams or even fault Part numbers for you?

Our hotline, based in France, is ready to support you and help solve all your problems.



LOCAL AND REMOTE TECHNICAL SERVICE

- Specialist technicians.
- Direct contact by phone and on-site if necessary.
- Training in all products.
- Commissioning carried out by an Airwell-approved Technical Centre.



CALL CENTRE

- Quick and effective responses from our experts.
- High availability.
- A multilingual centre.
- Continuously trained professionals.
- A customer and service-focused approach first and foremost!
- Attentive assistance until the customer is fully satisfied.

NEW

VIDEO ASSISTANCE

You can consult our experts from the field, by sharing your phone's camera in real time, as well as photos or technical manuals, in addition to the voice channel.



You can find all our partners on our website, via the link below:

www.airwell.com/en/where-to-find-us/





About the **AIRSOLAR SOLUTION FRILIOS**

On a planet where post-harvest losses are high and where the cold chain is essential to better feed and care for people, Airwell delivers a unique solution to ensure the longevity of perishable goods.

At Airwell, we understand the essential role of a robust and durable cold store in preserving the quality of sensitive products.

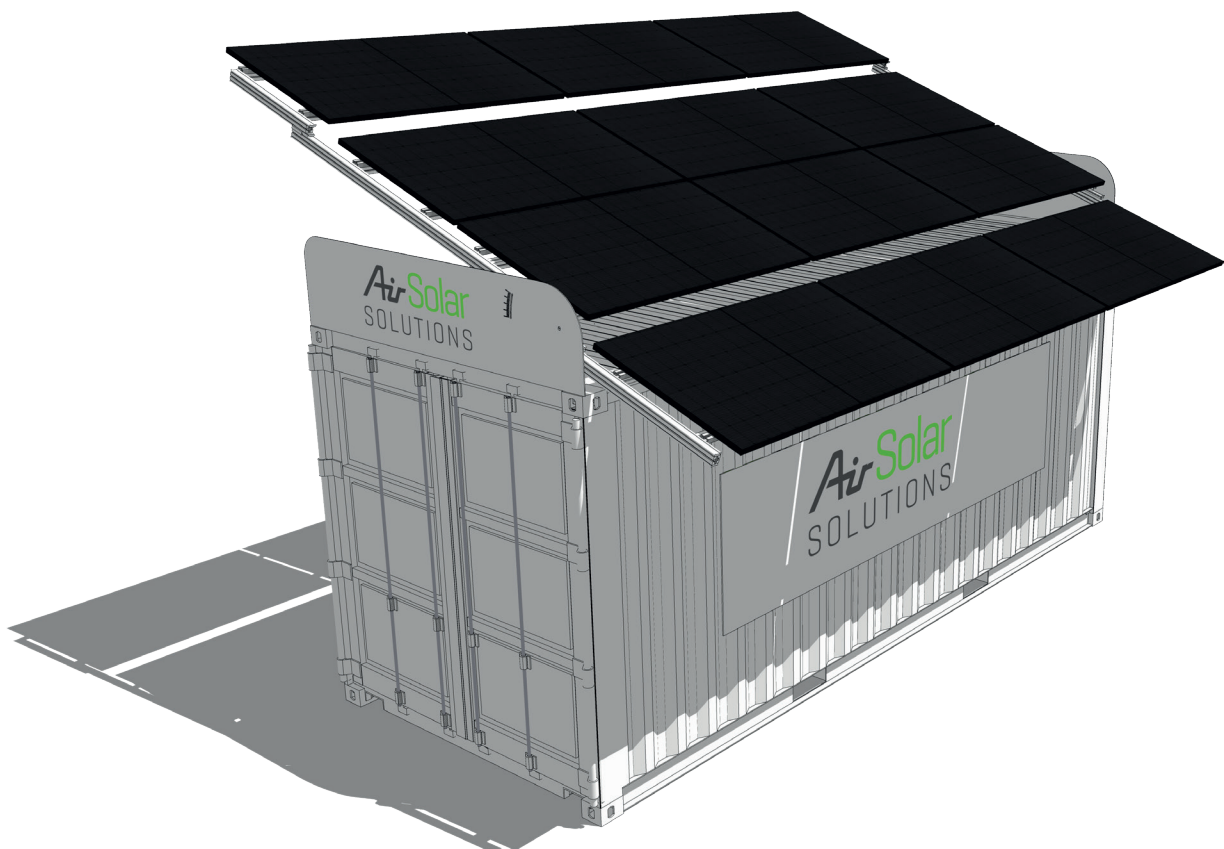
Frilios is an autonomous solar powered cold room solution the size of a container that can be rapidly deployed to meet the need to preserve sensitive foodstuffs and medicine using solar energy. Its energy block enables it to operate independently and maximise self-consumption.

Would you like to reduce your logistics costs with a local cold store? Limit your post-harvest losses or loss of valuable goods? Reduce your

dependence on fossil fuels or the electricity grid? Then Frilios is the right walk-in cold room for you.

Equipped with efficient AirSolar Solutions photovoltaic panels, Frilios has demonstrated its ability to maintain a stable temperature despite extreme outdoor conditions.

Frilios is a sustainable product that can be adapted to local sunlight conditions through a variety of possible installation configurations.



+ PRODUCT

- Photovoltaic panels
- Inclination from 0° to 45° depending on location and season
- Technical room: energy storage and cold production zone
- Insulated 20-foot container: cold maintained between 0°C and 10°C
- 17 m³ of storage

MARITIME TRANSPORT

Solar panels are stored inside for shipping



Easy assembly from the manual

LAND TRANSPORTATION

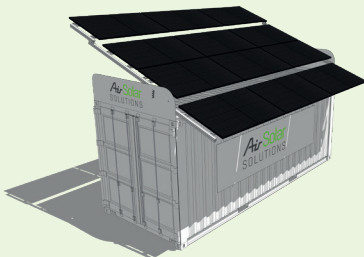
Solar panels are installed on the roof for ground transportation



Easy deployment and start-up

AIRSOLAR CFSA READY FOR USE

A simple mechanical system allows the deployment of solar panels in 10 minutes



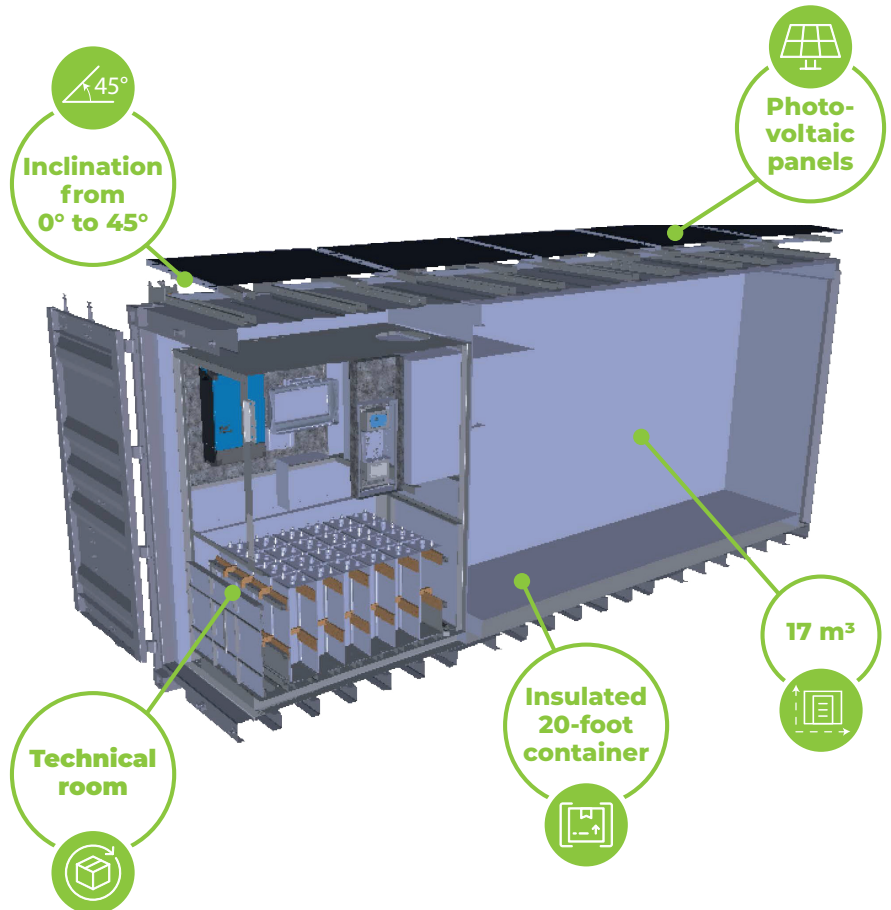
INSTALLATION MANUAL

Click or Flash



FRILIOS

The autonomous solar powered cold room



A ROBUST, TURNKEY SOLUTION

- Built around a container approved for sea transport.
- Can be transported anywhere by the sea, land and air.
- A 'all-in-one' solution delivered in kit.

MODULARITY AND MOBILITY

- Various installation options.
- Solar panel can be adjusted for seasonal tilting between 0 and 45°.
- Simple mechanism for storing and deploying solar panels for transport and extreme conditions.

EASY MAINTENANCE

- Advanced monitoring system.
- Easy access to components.
- Clear documentation and procedures.

PROVEN ENERGY EFFICIENCY AND AUTONOMY

- Up to 48 hours autonomy without sun. Self-sufficient in most situations.
- Devices configurations for maximum energy efficiency.
- Compatible with external power supply (generator or electricity grid).

TECHNICAL DATA

UNIT		CFSA-20FT
Code		
Prix de la CFSA (hors transport et installation)	€	Nous consulter
Manufactured in		France
Container	ft	Dry 20'
Total unloaded weight	kg	5 500
Panel insulation material		Polyisocyanurate and rockwool
Photovoltaic panels inclination	°	Ajustable between 0° et 45°
Transportation options		Flatbed crane truck on road, Container carrier at sea and helicopter in the air
Cold room size	m ³	16
Outside temperature operating range	°C	From -10 to 55
Solar peak power	Wp	7 500 (extra power in option, see ??)
Coldroom temperature setpoint range	°C	0 to 15
Supplied region		Middle East, Africa, Europe, French overseas territories
CFSA dimensions folded with solar panels on both sides (LxWxH)	cm	605x243x259
CFSA dimensions unfolded with solar panels on both sides (LxWxH)	cm	605x643x173

ELECTRICAL INSTALLATION

Peak power per photovoltaic module	Wp	500
Battery type		Lead acid OPzV
Battery capacity	Wh	46 080
Autonomy	h	From 36h to 48h without any irradiation
AC-in Connection		Single-phase AC grid or generator set
AC-out connection		Electrical socket to maximise energy use for additional electricity needs (only if batteries are 80% charges)
System intelligence		Monitoring of energy production and consumption, maintenance alarm
Phase		1
Frequency	Hz	50
Maximum power output	W	8 000
DC Voltage	V	48
Easy cut out system		Yes

CONFORMITY

For PV installation with battery		NF C15-100, UTE C15-712-2/3
For maritime transportation		CSC containers certificate of inspection

COMBINATION



COMPATIBLE WITH

- Compatible with solar kits **Power 1** and **Power 2**
- See p.??

PRODUCT LEAFLET

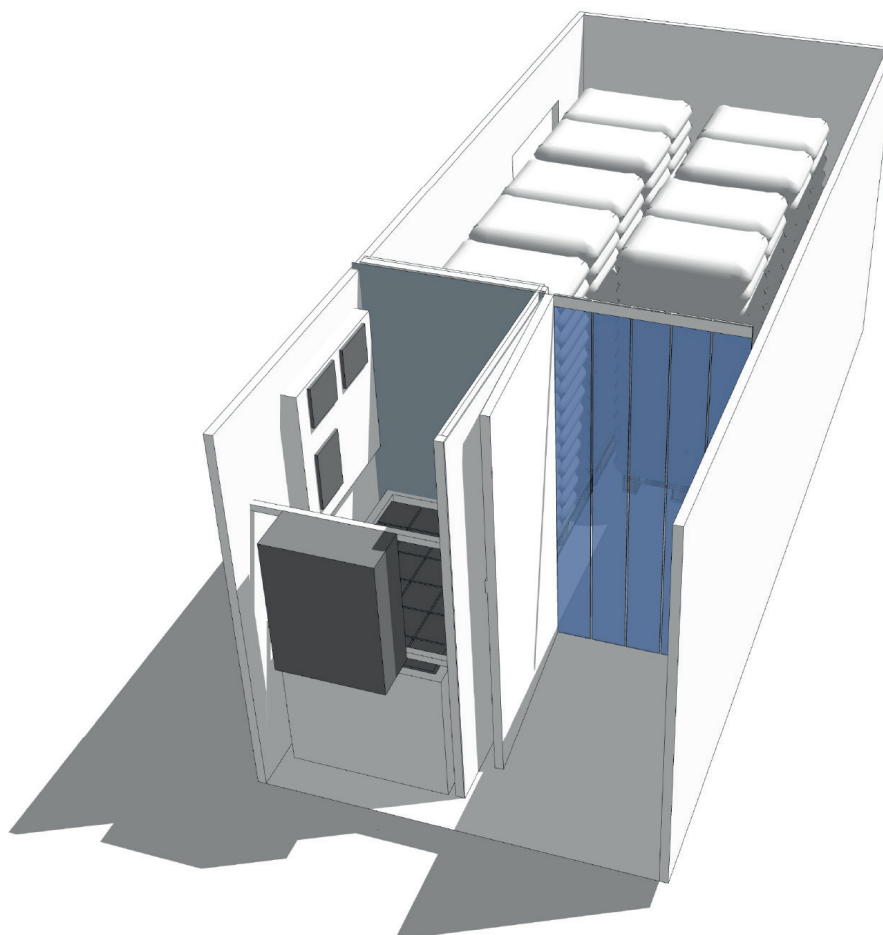
PV 500 Wp AirSolar Solutions:

Click or Flash

The cold room

The cold room features airtight construction with walls insulated using rigid polyisocyanurate (PIR) foam, ensuring superior thermal efficiency. The cold room meets fire safety standards with a B-s1 d0 rating, offering a secure environment for temperature-sensitive storage needs.

Frilios works up to 55°C ambient temperature. You can choose for a refrigeration unit adapted for T1, T2 or T3 climate.



TECHNICAL DATA

COLD ROOM	
Cold room size	16 m ³
Cold room insulation	140 mm thick polyisocyanurate (PIR), Thermal resistance : R = 6,85 (m ² .K/W)
	Fire resistance class
Technical room and entrance insulation	And 60 mm rock wool for the technical room and entrance
	Fire resistance class
Floor panel finish	Wear resistant (AC4) and slip-resistant (R10)
Useful doorway	800 x 2000 mm
Strip curtain	Yes
Conformity for sandwich panels	FM approved, CE
REFRIGERATION UNIT	
Refrigerant	R513a
Outdoor climate compatible options	Class T1, T2 or T3
Defrost	Hot gas auto-defrost
Type of compressor	hermetic Tecumseh
Conformity	IEC60335

Additional photovoltaic kit for maximum power output

To best adapt to local climatic conditions and your energy needs, we suggest to add one of the following solar kits with solar panels on ground. Our technical team will be happy to help you configure your installation.

ADDITIONAL POWER KIT SUPPLY			KIT POWER 1 : 1,5 KWP	KIT POWER 2 : 2,5 KWP
			2ENXXXX	2ENXXXX
			XX€	XX€
MODEL	Code	View	Quantity	
PVMX- 500M-FB	2EN2300 06	Même image que sur le guide solaire	3	5
ConSole+	520075-K	"Même image que sur le guide solaire"	4	5
Console extension rail	460196		4	5
Associate d wiring	2ENXXXX XX		1	1



PRODUCT LEAFLET

CS+ Console:

Click or Flash



Applications

Food&Beverage: Frilios is suitable for a wide range of applications including agriculture, horticulture, pisciculture, breeding, restoration, distribution and other food and beverage needs. It offers precise temperature control tailored to the requirements of each crop, ensuring optimal storage conditions. With a flexible «pay as you store» model, users can rent cooling space on a daily basis, making it adaptable and cost-effective for varying storage needs.



VEGETABLES



FRUITS



FISH



MEAT



DAIRY PRODUCTS



BEVERAGES

Other possible applications

Pharmaceutical: Frilios can be used in pharmaceutical applications, particularly for storing medicines, vaccines, and other sensitive products. It can be deployed in remote areas, providing a reliable solution to preserve the quality of essential medical products.



Military: Capable of maintaining precise temperatures to store both food and medicine as well as equipment, Frilios is ideal for military base camps. Its autonomous functionality allows it to operate effectively across diverse climate conditions, ensuring reliability in various military settings.

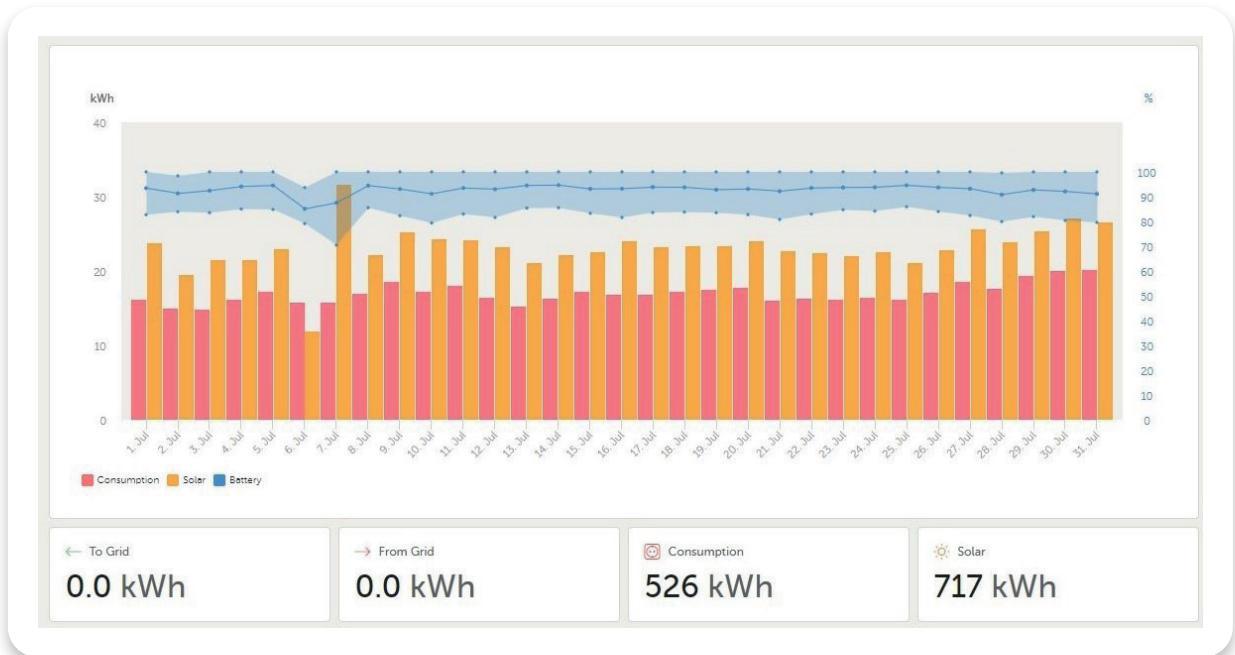
Humanitarian aid: Frilios is highly versatile, capable of rapid deployment for disaster relief, facilitating immediate storage of food and pharmaceuticals during floods, earthquakes, military conflicts, and other humanitarian crises. Its robust reliability ensures consistent performance, while its easy and fast transportability enhances its readiness for urgent deployment.



Connectivity and monitoring

Autonomy: Frilios can maintain the required temperature without the use of external power for approximately 42 hours, ensuring the preservation of stored goods at the required temperature.

Remote monitoring allows real-time oversight and management of the storage room's temperature and system performance from any location, providing timely alerts and data analysis. These features enhance the reliability and efficiency of the cold room, ensuring optimal storage conditions under varying circumstances.



For the design of the cold store, Airwell carefully applied a temperature mapping methodology. It involves systematically measuring and recording the temperature at various points within the storage space to ensure uniform cooling. This process identifies temperature variations and potential hotspots, ensuring that all areas maintain the desired temperature range for optimal storage conditions. Accurate temperature mapping is crucial for preserving the quality and safety of perishable goods stored within the facility.



PARTENERS & SUPPORTS



CEA Liten is a major European research and technology organization. Over the past two decades, they have become a key stakeholder in R&D for energy and the environment. Their research focuses on energy efficiency and the circular economy, addressing solar energy, batteries, hydrogen, and sustainable chemicals.



Made in Auvergne Rhône Alpes, Frilios is supported by its region through creation of partnerships and invitations to agricultural trade fairs in France, Morocco and the Ivory Coast.



Trésor
DIRECTION GÉNÉRALE

Attached to the French Ministry of the Economy, Finance and Digital Sovereignty the General Treasury has awarded Airwell a grant to set up an autonomous solar powered cold room in Iraq and implement its Colling as a Service solution.



As a competitive cluster in the energy sector, Tenerdis is creating relevant partnerships for Airwell to develop the project.

Cooling as a Service (CaaS)

The demand for cooling is rising. While you might consider opting for an inexpensive cooling system, these often come with hidden costs: higher operation expenses, increased electricity consumption, frequent breakdowns, and the need for repairs. In contrast, modern cooling technology is more cost-effective over its lifecycle due to its lower total cost of ownership. Additionally, innovative cooling systems provide higher indoor air quality and improved productivity.

How can you access a high-quality cooling system without straining your budget? It's simple: use cooling as a service ! In this model, the investor remain the owners of the equipment, and you only pay a usage fee based on your cooling needs. This fee includes maintenance, repairs, and running costs, so you only pay for your actual use. It's in the provider's best interest to install the most efficient technology and optimize operations and maintenance.



This approach, identified as the “Pay as You Store» model, fosters productive collaboration between providers, investors, and users of cooling systems. And the best part? You'll be contributing to a greener planet!



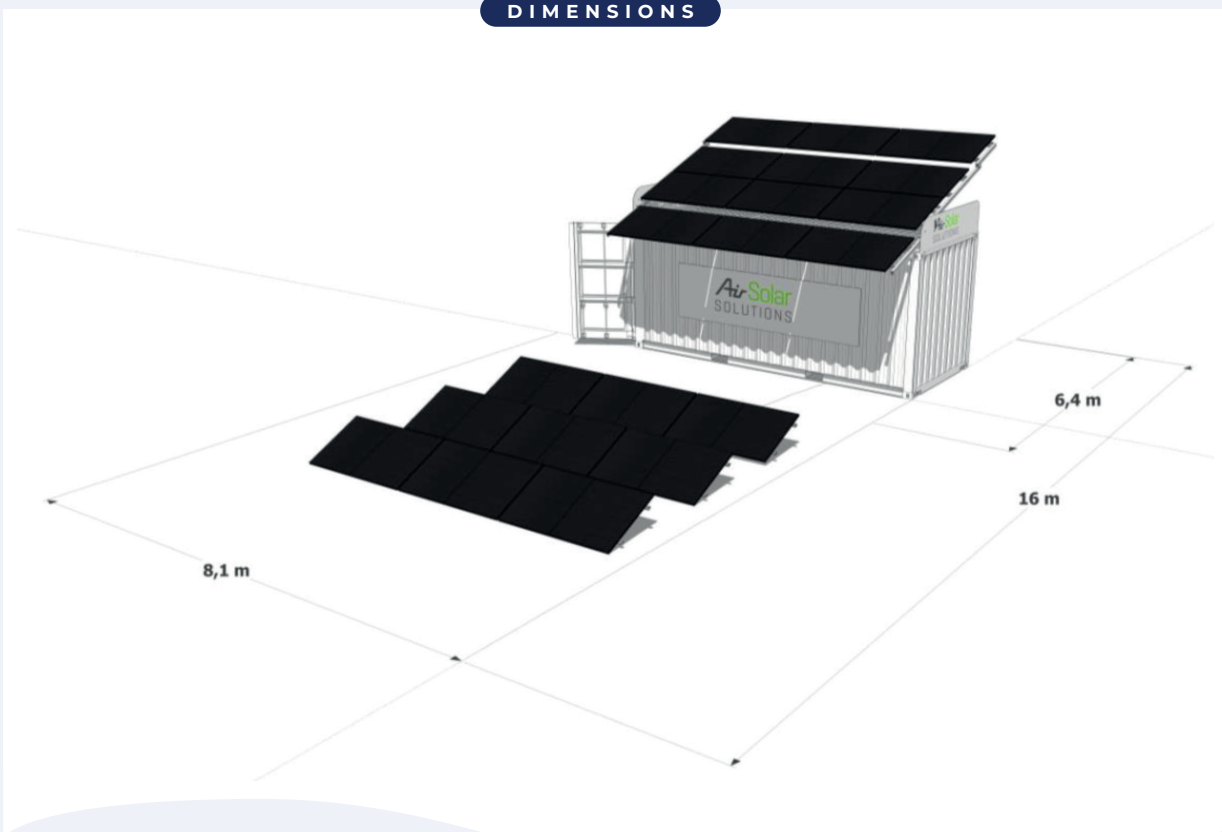
Partner

The **Basel Agency for Sustainable Energy** (BASE) combines expertise in technology, markets, economics, finance, and business development to deliver effective project solutions. BASE designed the application **Coldtivate**, an indispensable tool to settle a CaaS business model.



Coldtivate[™]

DIMENSIONS





YOUR AFTER-SALES, TECHNICAL SUPPORT, ORDER SPARE PARTS CONTACT

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TECHNICAL SUPPORT

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Printed in France

