



ATON
GREEN STORAGE 

Do you want autonomy?...



The sun goes down, but its energy does not.

The photovoltaic system is surely one of the most effective way to self-produce energy. Unfortunately most of the energy cannot be used because, maybe, nobody is at home when it is available. Whereas in the evening the energy request is at its peak but solar energy is no more available. That is, you need to buy energy from the provider at higher cost. **Ra.Store** represents **the** logic **solution** to this problem: to store energy produced during the day and to supply it when it is needed, that is to say at early morning and evening. With **Ra.Store** your domestic network becomes independent from the growing cost of electric energy.



The energy of the sun also at night...

...and you do not notice anything.

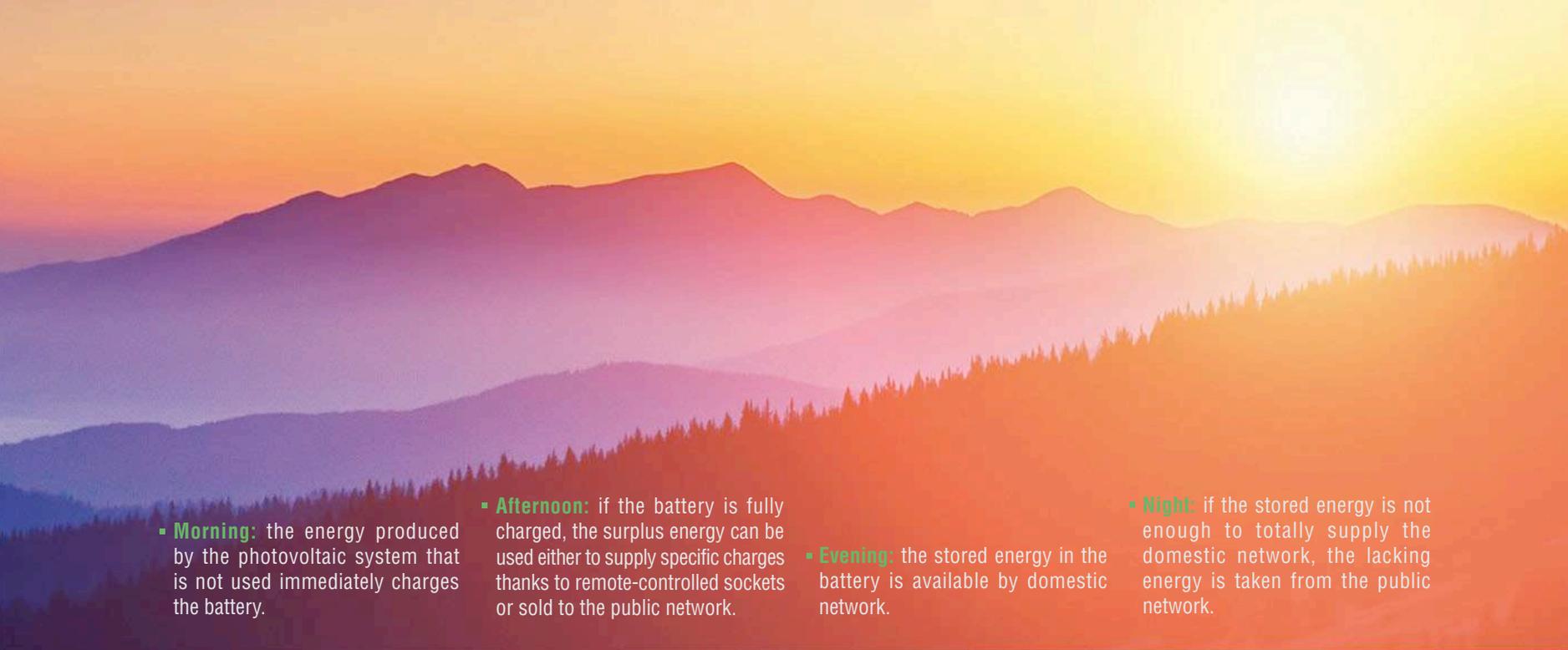
Behind a **simple** and **elegant** design, **Ra.Store** hides a cutting **edge technology**. **Ra.Store** is capable to store energy during the day and then give it back automatically when needed with a very high efficiency thanks to the **lithium batteries** it is equipped with. In this way, solar energy becomes available also at early mornings and evenings, when a family most needs it.

Even beyond, once the battery is fully charged, if a high energy surplus is available, **Ra.Store** can switch on remote-controlled sockets that supply specific electrical household appliances, or sell this surplus of energy to the public network.

Green energy when you most need it.

The vast majority of electrical energy purchased from public network originates from fossil fuels with the consequent introduction of big quantities of carbon dioxide in the environment. With photovoltaic systems this does not happen. Until nowadays, solar energy could only be used in the moment of its production and had to be purchased at evenings and early mornings.

Ra.Store solves this problem by supplying the **solar energy** produced by photovoltaic panels also **when there is no sun**. Even blackouts are not a problem anymore. **Ra.Store**, thanks to a **charge reserve**, comes into operation by guaranteeing continuity to the service.



- **Morning:** the energy produced by the photovoltaic system that is not used immediately charges the battery.

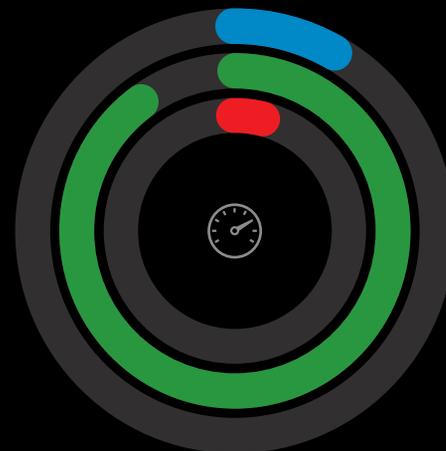
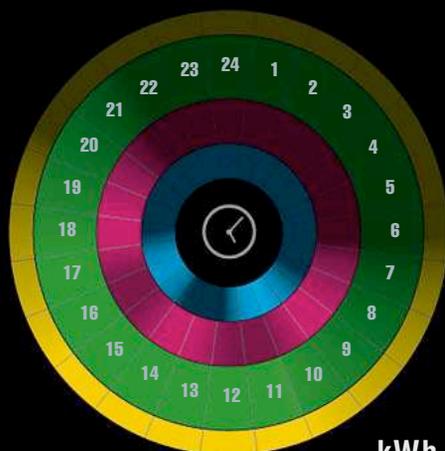
- **Afternoon:** if the battery is fully charged, the surplus energy can be used either to supply specific charges thanks to remote-controlled sockets or sold to the public network.

- **Evening:** the stored energy in the battery is available by domestic network.

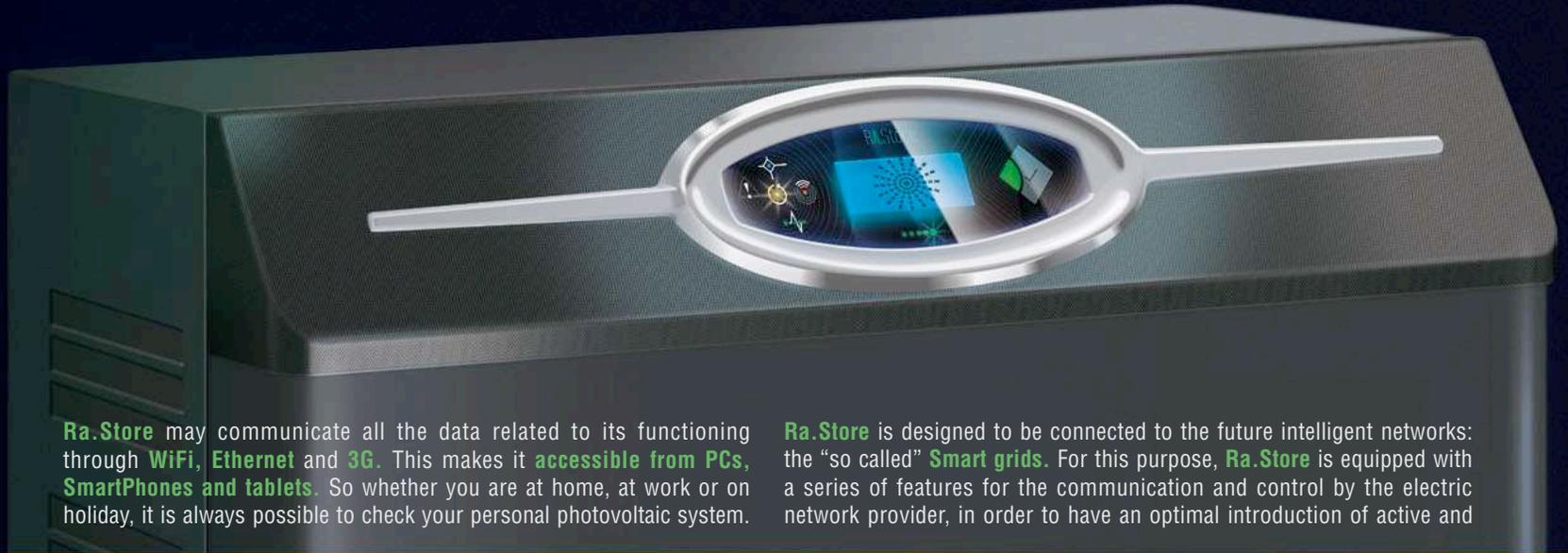
- **Night:** if the stored energy is not enough to totally supply the domestic network, the lacking energy is taken from the public network.



Conceptual image of a typical day (24 hours)



Connected and interactive...



Ra.Store may communicate all the data related to its functioning through **WiFi**, **Ethernet** and **3G**. This makes it **accessible from PCs, SmartPhones and tablets**. So whether you are at home, at work or on holiday, it is always possible to check your personal photovoltaic system.

Ra.Store is designed to be connected to the future intelligent networks: the "so called" **Smart grids**. For this purpose, **Ra.Store** is equipped with a series of features for the communication and control by the electric network provider, in order to have an optimal introduction of active and

Ra.Store can be equipped with **remote-controlled sockets**, which can be activated in case of a high energy surplus. These sockets can be activated also by PCs, SmartPhones and tablets, so that you will have **the full control** of the energy flows of your photovoltaic system even if you are not at home.

reactive power in the network. All this guarantees, in areas with high density of photovoltaic plants, the stability of the grid itself, and moreover it gives to **Ra.Store** the chance of future developments in conjunction with all the innovations that the Smart grids will propose.

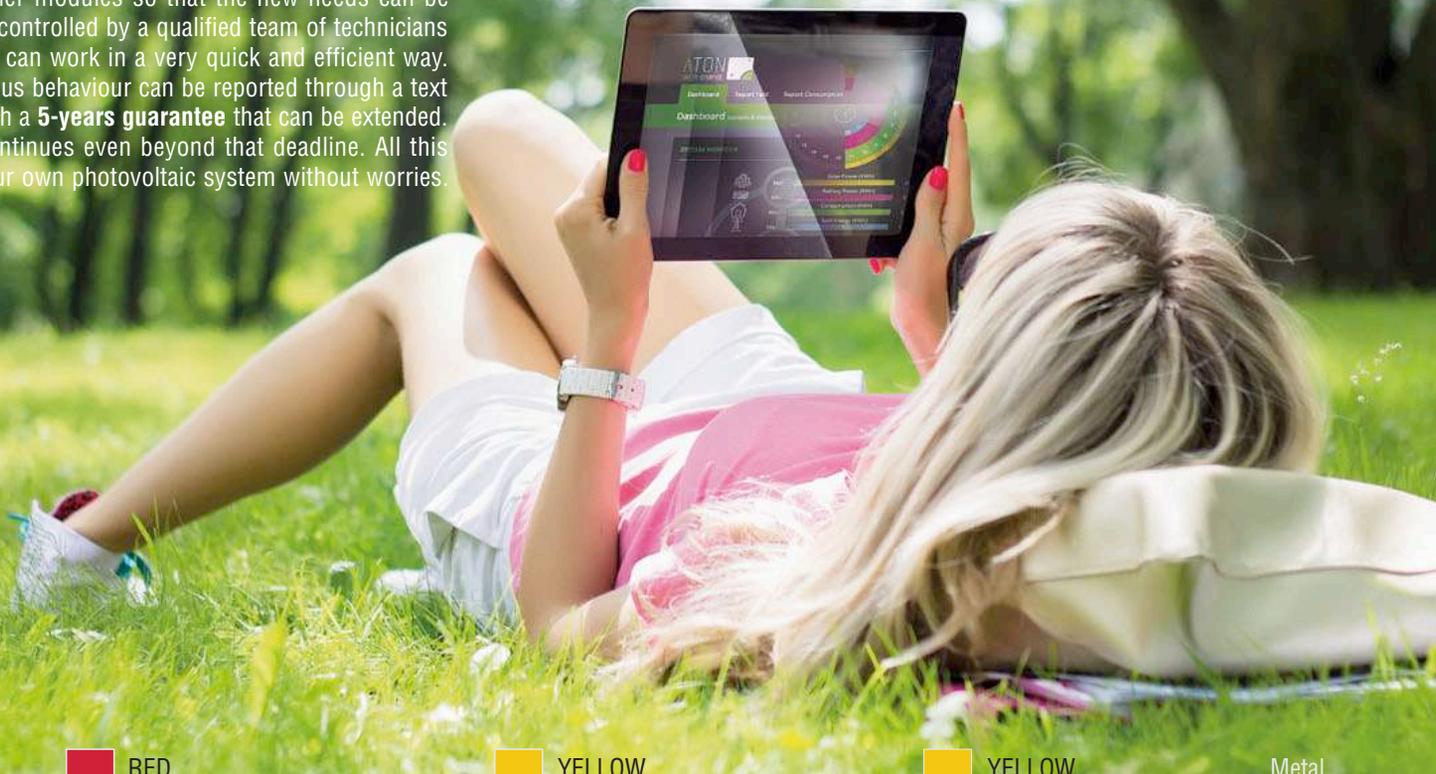
Metal Plastic Silver GREY Carbon Silver GREY Silver Light BLACK Carbon BLACK Silver Light





In complete safety.

The **batteries modularity** allows to configure the storage system of **Ra.Store** by choosing among a big selection. If the consumptions shall increase, it is possible to require further modules so that the new needs can be satisfied. **Ra.Store** is remote controlled by a qualified team of technicians who, in case of any problem, can work in a very quick and efficient way. Moreover, a possible anomalous behaviour can be reported through a text message. **Ra.Store** comes with a **5-years guarantee** that can be extended. Support and maintenance continues even beyond that deadline. All this ensures an optimal use of your own photovoltaic system without worries.



RED
Carbon

RED
Silver Light

YELLOW
Carbon

YELLOW
Silver Light

Metal
Plastic



The day never ends...

Ra.Store supplies the **solar energy** produced by photovoltaic panels also during hours **when there is no sun**. Once the battery has been fully charged, if a high energy surplus is available, **Ra.Store** can switch on remote-controlled sockets that supply specific electrical household appliances.



Technical Data

RA. STORE MODEL	RA 3K	RA 4K	RA 5K
Recommended for domestic energy use	up to 5000 kWh/year	up to 6000 kWh/year	more than 6000 kWh/year
Recommended installed PVs	3/4 kW	4/5 kW	5/6 kW
Number of strings	2	2	2
INPUT D.C. SIDE (PV)			
Max power from PVs	3.3 kW	4 kW	5 kW
Max power from PVs to the battery	2.5 kW	2.5 kW	5 kW
Max input voltage	550 Vdc	550 Vdc	550 Vdc
Max MPP tracking voltage	530 Vdc	530 Vdc	530 Vdc
Min MPP tracking voltage	125 Vdc	125 Vdc	125 Vdc
Max string input current string	12 A	12 A	12 A
Number of independent MPPT regulator	2	2	2
A.C. SIDE (INVERTER)			
Wave form	Sinusoidal single phase	Sinusoidal single phase	Sinusoidal single phase
Max output power	3.0 kW	3.7 kW	4.6 kW
Grid voltage range	180 - 270 Vac	180 - 270 Vac	180 - 270 Vac
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Max output current	14.4 A	16 A	22.1 A
Total harmonic distortion (THD)	< 3%	< 3%	< 3%
Displacement power factor adjustable	0.9 overexcited - 0.9 underexcited	0.9 overexcited - 0.9 underexcited	0.9 overexcited - 0.9 underexcited
Max output power in EPS mode	2.0 kVA	2.0 kVA	4.0 kVA
Max charging power from the grid	2.5 kW	2.5 kW	2.5 kW
EFFICIENCY			
MPPT efficiency	> 99%	> 99%	> 99%
Euro efficiency	97.00%	97.00%	97.00%
Max efficiency	97.60%	97.60%	97.60%
Max battery recharging efficiency	94.00%	94.00%	94.00%
Max battery discharging efficiency	94.00%	94.00%	94.00%
BATTERY			
Type	Li-Fe	Li-Fe	Li-Fe
Nominal voltage	48 Vdc	48 Vdc	48 Vdc
Storable energy(*)	5 kWh	7.5 kWh	7.5 kWh
Usable energy	4 kWh	6 kWh	6 kWh
Extra energy in EPS mode	0.5 kWh	0.75 kWh	0.75 kWh
DoD in Line mode	80%	80%	80%
DoD in EPS mode	90%	90%	90%
Number of working cycles	4,000	4,000	4,000

SAFETY AND PROTECTION DEVICES	RA 3K	RA 4K	RA 5K
IP grade	IP 20	IP 20	IP 20
Overload protection	Yes	Yes	Yes
Overtemperature protection	Yes	Yes	Yes
D.C. IN line protection	Fuse	Fuse	Fuse
A.C. line protection	Magnetothermal breaker	Magnetothermal breaker	Magnetothermal breaker
Battery protection	Fuse	Fuse	Fuse
EPS mode activation time	5 sec	5 sec	5 sec
Temperature range	-10 °C to +45 °C	-10 °C to +45 °C	-10 °C to +45 °C
INTERFACES			
LCD display and capacitive keyboard	Yes	Yes	Yes
WiFi port	Yes	Yes	Yes
Ethernet port	Optional	Optional	Optional
GPRS module	Optional	Optional	Optional
Enocean module for remote plugs control	Optional	Optional	Optional
CERTIFICATIONS			
	IEC 6204-1-1: 2003	IEC 6204-1-1: 2003	IEC 6204-1-1: 2003
	IEC 62109-1: 2010	IEC 62109-1: 2010	IEC 62109-1: 2010
	IEC 62109-2: 2011	IEC 62109-2: 2011	IEC 62109-2: 2011
	DIN VDE V0124-100: 2012-07	DIN VDE V0124-100: 2012-07	DIN VDE V0124-100: 2012-07
	DIN VDE V0126-1-1/A1: 2012-02	DIN VDE V0126-1-1/A1: 2012-02	DIN VDE V0126-1-1/A1: 2012-02
	CEI 0-21 2014-09 + V1	CEI 0-21 2014-09 + V1	CEI 0-21 2014-09 + V1
	ARN4105	ARN4105	ARN4105
	EN50438-NL	EN50438-NL	EN50438-NL
	E8001	E8001	E8001
	G83/2	G83/2	G83/2
	AS4777	AS4777	AS4777
Applied standards	UN3090	UN3090	UN3090
CE marked	Yes	Yes	Yes
SIZE AND WEIGHT			
Size W x H x L (mm)	1045 x1245 x 545	1045 x1245 x 545	1045 x1245 x 545
Wight (Kg)	175	175	205
WARRANTY ^(o)			
On the system, battery included	7 year	7 year	7 year

Legenda:

(*) options for Li-Ion battery: 7.5kWh, 10kWh, 12,5kWh, 15kWh, 17,5kWh, 20kWh

(o) ask for warranty extensions

Ra.Store



GARZI AOT

