



press release  
**press** release

N° 33-08

## **Saft, Conergy and Tenesol launch SOLION, Europe's largest photovoltaic energy storage development project.**

**Paris, August 28, 2008** - Saft, Conergy and Tenesol have announced the launch of SOLION, a Franco-German project dedicated to the development of a new concept in energy conversion and storage for grid connected photovoltaic (PV) systems.

The objective of the SOLION partnership is to develop an integrated energy kit able to be produced on an industrial scale for decentralised on-grid, residential PV systems.

This project will introduce large lithium-ion batteries into PV systems on the largest scale ever tested in Europe. Lithium-ion technology is required in order to meet the need for 20 years' battery life in demanding environmental conditions.

The 75 systems will be deployed in Germany and France. These trials will validate the performance of the system, its economic viability, the added value of energy storage in an on-grid PV system and the benefits for stakeholders.

Storage will enable solar energy to be "time shifted" to periods of peak demand or when there is no sun in order to allow self consumption or grid support. Today, grid-connected PV systems, without energy storage, are directly fed in.

The project will demonstrate the major benefits of storing energy generated from PV to the environment and to all stakeholders.

SOLION has been recognised by the Eureka/Eurogia and Tenerrdis programmes, and is supported by the French Ministry of Economy Finance and Employment (DGE) and the German Ministry of Environment (BMU).

A German utility (E-ON), three German research institutes (ISEA, ISET & ZSW) and one French research institute (INES -CEA) are associated with this project.

**About Saft**

*Saft (Euronext: Saft) is a world specialist in the design and manufacture of high technology batteries for industry. Saft batteries are used in high performance applications such as industrial infrastructure and processes, transportation, space and defense. Saft is the world's leading manufacturer of nickel-cadmium batteries for industrial applications and of primary lithium batteries for a wide range of end markets. The group is also the European leader for specialized advanced technologies for the defence and space industries. With approximately 3,900 employees worldwide, Saft is present in 18 countries. Its 15 manufacturing sites and extensive sales network enable the group to serve its customers worldwide.*

For more information, visit Saft at [www.saftbatteries.com](http://www.saftbatteries.com)

**About Conergy**

*Conergy AG is one of the leading solar enterprises in Europe and with over 70,000 solar systems installed also a global market leader in the field of solar system integration. Listed since 2005 on the Frankfurt Stock Exchange, the group pursues a global growth strategy: it produces, installs and plans solar systems for its customers in more than 20 countries. The Conergy Group is represented by branch offices on four continents.*

For more information, visit Conergy at [www.conergy.com](http://www.conergy.com)

**About Tenesol**

*Tenesol, created in 1983 is one of the first PV system manufacturer and integrator in France. Since 1996 the Company has developed grid connected systems for residential, commercial and industrial segments. Since 2000 Tenesol has set up production units for PV modules. The company, today a joint-venture (50/50) of EDF and Total, is addressing markets worldwide mainly in grid connected applications but also for off grid in developing countries regarding professional applications and rural electrification.*

For more information, visit Tenesol at [www.tenesol.com](http://www.tenesol.com)

**Press Contacts:**

**Jill Ledger**, Saft Corporate Communications and Institutional Relations Director  
Tel.: +33 1 49 93 17 77, e-mail: [jill.ledger@saftbatteries.com](mailto:jill.ledger@saftbatteries.com)

**Elodie Marchand**, Financial Dynamics

Tel.: +33 1 47 03 68 17, e-mail: [elodie.marchand@fd.com](mailto:elodie.marchand@fd.com)

## **BACKGROUND INFORMATION**

### **The role of each partner**

#### **Saft**

Saft is responsible for the storage system of the design and the manufacturing. The storage function (battery) design will be based on Li-ion battery modules which will be connected in series to obtain the energy and voltage required by the application. This concept authorised a high modularity offering a wide energy window without additional development.

Each module will include an electronic board for data acquisition (voltage, temperature, ..) and cell balancing in order to optimize the battery life time and to allow charge/discharge control, state of charge measurement, etc.

This electronic board will be connected to the system management which will pilot the battery. The interfaces will be developed both with Tenesol and Conergy.

Saft will deliver the batteries both to Conergy and to Tenesol.

These 2 PV system integrators will produce the other components and will assembly the SOLION product (battery + inverter + system management).

#### **Conergy and Tenesol**

With its extensive knowledge in the production of inverters, Conergy and Tenesol will specify and develop the inverter and the energy management system which will meet the customers' requirements. The system design shall allow the inverter to either feed the electrical power into the public grid or store it in the battery for later use.

Conergy intends to produce and set up the 25 systems in Germany.

Tenesol will produce and set up the 50 systems in various demonstration sites in France mainland and overseas departments.

Finally, field tests demonstration supervision and data acquisition will be done for system monitoring and future system improvements

#### **E-ON**

E-on will provide access to its network in Germany and is contributing to the development of the system's interface with the network.

#### **Research institutes**

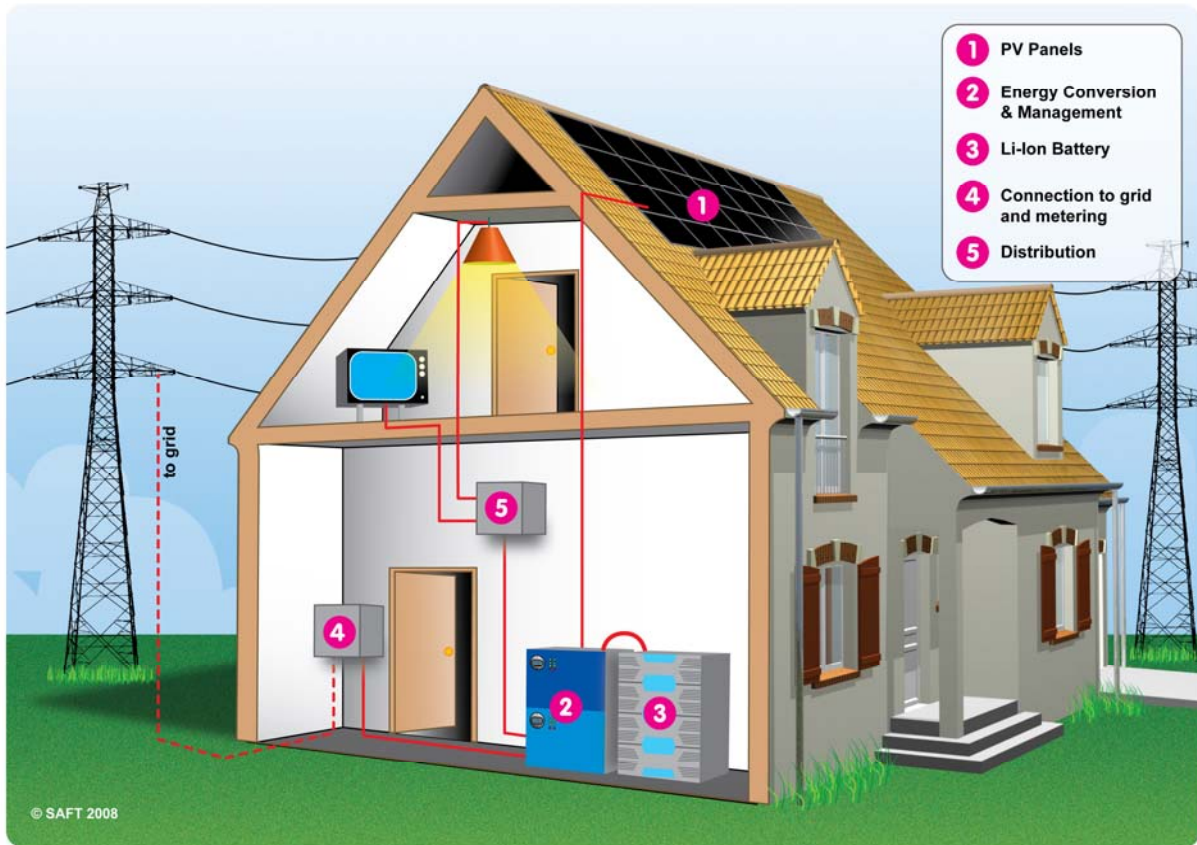
These organisations are responsible for modelling the system and its impact on the network, and for the analysis and utilisation of the test results.

### **Organisations involved in the project**

<b>Partner</b>	<b>Core business</b>
Saft – Project coordinator	Batteries
Conergy	Renewable Energies Products Integrator
Tenesol	PV System Integrator
E.ON	Utility
ISET	Research Institute
ZSW	Research Institute
ISEA	Research Institute
INES-CEA	Research Institute

All partners confirm their strong interest in the development of grid connected PV systems, associated with a storage function and recognize that this concept offers new business and market perspectives.

### The role of energy storage in renewable energy systems



*Example of residential PV system with energy storage*

PV installations which have a permanent connection to the electricity grid are categorised as ‘on-grid’ applications. This is the most popular type of solar PV system for homes and businesses in the developed world. PV can be installed on top of a roof or integrated into the roofs and facades of houses, offices and public buildings. An inverter is used to convert the DC power produced to AC power for running normal electrical equipment.

Private houses are a major growth area for roof systems as well as for Building Integrated PV (BIPV). A typical 5 kWp panel in southern Germany delivers approximately 5,000 kWh/year – sufficient to supply nearly all the annual electricity needs of an energy conscious household.

Connection to the local electricity network allows any excess power produced to be sold at peak hours to the utility. Electricity is then imported from the network outside daylight hours.

The role of energy storage in an on-grid application is to store excess PV energy until it is needed. Effectively, energy storage will ‘time-shift’ PV energy produced during the day, peaking at noon, to make it available on demand. This will both maximise local consumption and enhance the efficiency of the PV system. Surplus energy can also be fed back into the grid, for which the owner of the PV system would be remunerated at a higher tariff.

Energy storage will also increase security of supply while making individual consumers less dependant on the grid. It will also help to boost the development of energy self-sufficient houses and buildings and contribute to the continuous growth of PV as part of the global energy mix.

The main benefit of on-grid energy storage for utilities is that it will reduce the peak load on their grid while at the same time making PV a source of predictable, dispatchable power that they can call on when needed. Reduced grid losses ie the energy lost by transporting power from a centralised generator to the point of use will result in some energy savings. Savings due to reduced consumption in PV powered households are anticipated to be 10 to 20 per cent

### **Rationale for on-grid energy storage**

#### **Household**

The change in emphasis for on-grid PV production has created an increasingly sound rationale for energy storage that maximises local consumption by time-shifting PV power from the peak production to the evening, when it is most needed.

Furthermore, the more of its own-produced power that the household uses, then the more independent it becomes from the grid and the more secure its supply. Energy storage will also enhance the efficiency of PV production and will play a role in improving power quality and power ability.

Any surplus energy can also be injected into the grid for which the household will be paid at a high tariff.

#### **Utility**

The utility will also benefit from its consumers having energy storage since this will reduce peak loads on the grid. It will also enable it to make use of PV as a predictable, dispatchable, form of power. The utility will be able to call on this stored energy at periods of high demand. Yet at periods of peak production and low demand, the utility will not have to accept the excess power, and this will avoid any potential overloads on the grid.

#### **Socio-economic impacts**

Energy storage could offer a number of socio-economic benefits. Mainly, it will help to stimulate the continuous growth of PV as part of the overall energy mix. It will also help to reduce grid losses and encourage reduced consumption in PV households.