



**SAFT**



# Soft solar nickel battery system delivers reliability and cost-efficiency for Pertamina offshore gas platform

Solar system integrator TSS4U selected Saft Sunica+ nickel batteries for their high quality, reliability, high-temperature capability and expert support in Indonesia

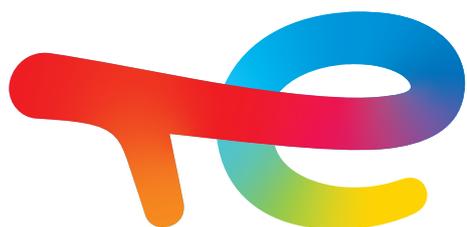
Specialist solar batteries supplied by Saft, a subsidiary of TotalEnergies, are providing power continuity for the GG unmanned gas wellhead

platform. The platform is operated by Pertamina Hulu Energi (PHE) ONWJ, Indonesia's state-owned oil and gas company and produces around 40,000 barrels of oil per day.

Pertamina needed ultimate reliability for the platform, which lies 29 km (18 miles) off the coast of Java. It called on TSS, the solar system integrator, to deliver an autonomous ATEX / IECEx certified power system based on photovoltaic (PV) modules and nickel batteries to provide maximum

reliability and cost-efficiency. The platform started production in December 2014.

GG's electrical loads include safety, security, communication and control systems. To support these, TSS designed a redundant system based on two identical arrays of solar photovoltaic (PV) modules with two sets of Saft Sunica+ batteries with a total capacity of 11,100 Ah at 24 Vdc.



**TotalEnergies**



## ► Ultimate reliability

The system is capable of providing 100% power for up to eight days without sun.

Jan-Willem Linsen, Director Operations of TSS, says: «Customers like Pertamina achieve process continuity and avoid unplanned downtime or costly site visits by specifying systems with the highest reliability. We selected Saft for its known quality, reliability and global capabilities.»



## Seven years of reliable performance has confirmed the wisdom of TSS's choice of battery for the extremely remote offshore location

Martijn Smits, Senior Project Engineer at TSS, oversaw the design, fabrication and delivery of the system, including testing and commissioning at the construction yard in Indonesia. Martijn says: "Working with Saft, we have developed a special charge regime so that nickel batteries in solar systems provide a guaranteed long lifetime in harsh and remote areas. As a result, the GG system has been operating as expected for more than seven years. We are continuously testing to develop systems with longer lifetimes and lower maintenance costs and we are always looking for suppliers who share our views on quality and innovation."

## Proven performance in high temperatures

High-temperature performance and high quality construction were essential selection criteria for the GG batteries as the operating climate averages 30°C and has a corrosive marine atmosphere. Saft's Sunica+ nickel batteries have proven high-temperature reliability, enabling Pertamina to avoid the experience with some types of battery where lifetime and performance can drop off significantly as the temperature rises. In addition, they are based on high quality and corrosion-resistant materials to ensure long and predictable life, in contrast to lead-acid batteries.

Another important factor in TSS's success on the project was the availability of support from PT Adidaya, TSS's Indonesian partner, which provided a high level of expert technical support to enable straightforward installation and commissioning.

## About TSS4U

Founded in 2003, TSS has extensive global experience designing and delivering reliable and high performance solar and solar hybrid energy solutions.

TSS solar energy solutions are designed for reliability, even in the harshest conditions. TSS has deployed solar and solar hybrid off-grid solutions for mission-critical applications including telecom cell towers, oil and gas platforms, water treatment plants and industrial microgrids.

TSS is headquartered in The Netherlands with local offices in Abu Dhabi and Malaysia. TSS also work together with a network of experienced local partners across the Middle East, North Africa and Asia Pacific. World's most trusted off-grid solar and solar hybrid solutions. [www.tss4u.com](http://www.tss4u.com)

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