

# Superior efficiency for Crane Operations thanks to Integrated Hybrid Generator QHS Range.

Atlas Copco

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## APPLICATION

With an increase in construction happening across the world, rental companies and end users alike need a reliable power source to help them get the job done. Cranes are an essential part of construction sites, as moving equipment and building materials are detrimental to completing projects in a timely manner. Government restrictions and CO2 regulations have inevitably pushed the rental market to more energy efficient machines.

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## CHALLENGE

Crane operation in general is characterized by short, but high peaks of energy consumption and a low average load. This usually leads to oversized rental generators, where the generator is not running at optimum efficiency most of the time. This also causes increased service intervals and can cause wet stacking issues. The lack of efficiency of the generator operation also leads to larger fuel costs and higher CO2 emissions.

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## SOLUTION

These problems can be easily avoided with our Integrated Hybrid Generator Range. Compact and powerful, the all-in-one canopy unit combines battery technology with a diesel-powered engine. The batteries can cover the peaks and the power supply, while the engine serves as a backup. When the engine is running, it will always operate at maximum efficiency, eliminating low load and wet stacking issues. The ECOController™ serves as a smart energy management solution first supplying power to the load and allocating the remaining power to charge the batteries. This ensures both engine and batteries run at optimum efficiency at all times.

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## IMPACT

Compared with conventional diesel-only operation, integrated hybrid generators can deliver up to 80% fuel savings, reduce CO2 emissions by up to 80%, and cut engine runtime by more than 95%, lowering operating costs while supporting customer sustainability goals. This decreases both the operational cost and total cost of ownership significantly.



# Hybrid Solution - Crane Application

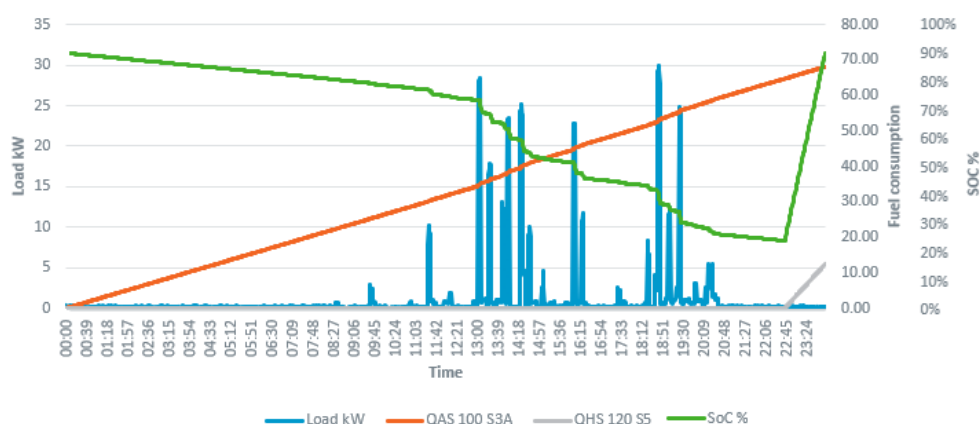
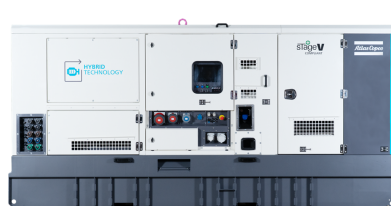
| Area                  | Temperature | Altitude   | Phase | Frequency | Voltage  |
|-----------------------|-------------|------------|-------|-----------|----------|
| European Union & U.K. | 25 °C       | 500 meters | 3Ph   | 50Hz      | 400/230V |

| Main conditions              |                                        |
|------------------------------|----------------------------------------|
| Application                  | Industry / Construction critical loads |
| Maximum load kW              | 30                                     |
| Offset maximum load          | 0%                                     |
| Working hours per day        | 24                                     |
| Daily energy requested (kWh) | 27                                     |
| Working days                 | 365                                    |

## Standalone



## Hybrid



|                              | QAS 100 S3A<br>(Liters) | QHS 120 S5<br>(Liters) | SAVINGS           |           |
|------------------------------|-------------------------|------------------------|-------------------|-----------|
|                              |                         |                        | Liters            | EUR       |
| FUEL full period consumption | 24.864,7                | 4,585.8                | 20,278.8          | 28,390.36 |
| DEF full period consumption  | 0,0                     | 0,0                    | 0,0               | 0,00      |
| OIL full period consumption  | 148,9                   | 7.7                    | 141,1             | 705.5     |
| Maintenance services         | 17                      | 0.9                    |                   | 24,900.00 |
|                              |                         |                        | Total savings EUR | 53,995.86 |
|                              |                         |                        | Total savings %   | 88.4%     |

| Performance results               | 1% Average load | 75% Average load<br>0,9 Cycles/day<br>at max DOD of 76% | SAVINGS |       |
|-----------------------------------|-----------------|---------------------------------------------------------|---------|-------|
| CO <sub>2</sub> emissions (ton)   | 78              | 14                                                      | 63.6    | 81.7% |
| Genset running hour               | 8.760           | 468                                                     | 8,292   | 94.7% |
| Estimated lifetime genset (years) | 1,6             | 29.9                                                    |         |       |