



# A TAILORED APPROACH TO SUPPORTING THE GROWTH AMBITIONS OF A PRIVATELY-OWNED ENERGY SUPPLIER

REFERENCE CASE – PARAS ENERGY, NIGERIA – OPTIMISED MAINTENANCE AGREEMENT

Since deciding in 2009 that its three new power plants would operate with Wärtsilä gas engines rather than gas turbines, the conventional choice at that time in Nigeria, Paras Energy has continued to benefit from that decision. As the company's success gathers momentum, a new Wärtsilä Optimized maintenance agreement has been specifically tailored to support these growth ambitions.

Paras Energy is a 100 percent privately-owned independent Nigerian energy provider connected to the country's national grid. This, however, has not always been the case. Until 2008-9, Paras Group was a steel producer with plans to install its own dedicated power generating plants in order to become self-sufficient for its energy needs. The national grid at the time was already affected by instability, and interruptions to the electricity supply were affecting production.

It was then that discussions with Wärtsilä began. Although gas turbine technology was the standard choice for power generation in Nigeria, Paras became increasingly interested in the advantages offered by Wärtsilä gas-fuelled engines, in particular their flexibility and ability to respond rapidly

to load changes. The steel melting shops use induction furnaces, and the variations in load requirements are significant. Furthermore, the Wärtsilä technology features low water consumption, an important consideration in view of Nigeria's long dry seasons.

Eventually, Paras Energy became convinced that the right choice for their three locations was the Wärtsilä 34SG gas engine. This has proven to be a wise decision. In the years since the power plants were installed, not only has the Paras Group's steel production been able to benefit from having a reliable source of electricity supply, but in 2016 Paras Energy began feeding Nigeria's national grid, the first privately-owned company to do so.



Majority of the Paras Energy electricity generated is fed to the **Nigeria grid**.



Paras energy is a repeat customer of Wärtsilä. The journey together started back in 2008. 12 years later, the partnership was strengthened by a 5-year optimised maintenance agreement

"We have developed a strong spirit of mutual respect and trust with Wärtsilä. This partnership has been a real factor in our success as a power provider to the Nigerian grid. We made the right choice in selecting the Wärtsilä 34SG engines, but the real value comes from the relationship with Wärtsilä, and in understanding and supporting each other."

**Yashwant Kumar**  
Managing Director,

Paras Energy & Natural Resources Ltd.

Wärtsilä 34SG engines in the three plants have a combined output of approximately 132 MW. Based on an average connected capacity of some 6.5 kW for each Nigerian home, this represents the annual consumption equivalent of close to 20,300 domestic households.

The engines' fast starting and stopping capability in response to existing supply and demand fluctuations as well as foreseen supply fluctuations from renewable sources, such as wind and solar, ensures that the plants are well in line with the Nigerian Federal Government's integrated energy mix targets. The [Nigerian Sustainable Energy for All \(SE4ALL\)](#) action agenda in the 30:30:30 vision document outlines a target of generating 30 GW of power by 2030, with 30 percent from renewable energy sources.

### Moving forward in partnership with Wärtsilä

Until early 2021, Paras Energy operated and maintained the plants themselves, but as its role as a national energy supplier has continued to increase, it was decided to take advantage of Wärtsilä's experience in designing customised long-term service agreements to ensure the required high levels of plant availability, reliability, and efficiency. Having worked closely with Wärtsilä for 12 years, this was a natural next step in Paras Energy's strategy for growth as the company seeks to play an even greater role in Nigeria's energy sector.

By opting for a Wärtsilä Optimised maintenance agreement tailored to the specific operating requirements and needs of the customer, Paras Energy can be assured of their performance

reliability. The agreement also provides maintenance cost predictability, which is an important consideration for budgeting purposes as the company grows.

For its long-term service agreements, Wärtsilä utilises data-driven maintenance planning and scheduling procedures. The core of the solution is continuous proactive support and recommendations from specialist advisers in Wärtsilä Expertise Centres, who help customers to optimise maintenance intervals according to actual needs. Their support prevents unexpected downtime and delivers guaranteed service levels along with the important cost predictability. The agreement with Paras Energy effectively marries Wärtsilä's world-class expertise and extensive experience with state-of-the-art digital technology.

### Case summary

The Challenge	Wärtsilä's Solution	Benefit
<ul style="list-style-type: none"> <li>To have a dedicated power supply, independent from the grid, capable of supplying the company's steel production needs, and handling load fluctuations from the steel melting shops' induction furnaces.</li> <li>To continue growth as a power provider while ensuring that all maintenance needs of the company's three power plants are professionally handled.</li> </ul>	<ul style="list-style-type: none"> <li>To supply the plants with Wärtsilä 34SG gas-fuelled engines, featuring high levels of flexibility and reliability.</li> <li>A long-term Optimised maintenance agreement, tailored to meet the specific needs and demands of the customer.</li> </ul>	<ul style="list-style-type: none"> <li>Efficient, reliable, generating capacity that has allowed the customer to become an important supplier of electricity to Nigeria's national grid, as well as meeting its steel production power requirements.</li> <li>Ensured plant availability, performance reliability, and cost predictability.</li> </ul>

A key element within the agreement is the spare part planning process that ensures the ready availability of critical spare parts and, therefore, also the availability of the three plants. The agreement runs for five years. Wärtsilä's strong presence in Nigeria since 2006, with some 90 personnel employed, means that expert personnel are always on hand to support and assist Paras Energy as and when needed.

### Key data

End customer	Paras Energy, Nigeria
Type	Wärtsilä 34SG based power plant
Operating mode	Flexible baseload
Gensets	14 x Wärtsilä 34SG medium-speed gas engines
Total output	132 MW
Fuel	Natural gas
Scope	Engineering equipment delivery (EEQ)
Lifecycle solution	a 5-year optimised maintenance agreement (2021)
Delivery	in operation since 2009

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