

PRESS RELEASE



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Ricardo helps Aggreko develop ultra-efficient utility power engines

- **New upgraded Aggreko G3+ diesel engine sets the benchmark for efficiency in utility power in 1MW class**
- **Provides high speed operation on low cost heavy fuel oil (HFO) more typically used in larger, medium speed engines**
- **Upgrade of existing Aggreko fleet of 4,500 engines in progress, with first orders already announced**

Aggreko is a global leader in generator rental, providing efficient and cost-effective industrial generators and power distribution, including a wide range of specialized generators, transformers and load banks. In 2009 the company approached Ricardo to commence what has become a highly successful engineering partnership.

Aggreko's strategy has been to expand its global presence by making temporary power cost-competitive with permanent generating plant. The key to this is the total cost per kilowatt hour and the ability to operate on widely available supplies of low cost fuel such as marine grade HFO. This was the focus of the company's work with Ricardo.

With the support of engine manufacturer Cummins, Ricardo and Aggreko set themselves the challenge of creating an upgrade path for the existing fleet of 4,500 Cummins KTA50G3 powered Aggreko diesel generator sets. The upgrade needed to be feasible as a part scheduled engine rebuild and needed to be packaged in a standard 20ft container together with fuel handling systems and the existing cabling, transformers and switchgear. Operating on diesel fuel, the new Aggreko G3+ that resulted from this work is believed to be the world's most efficient engine for utility



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power, optimized for this application and producing 14 percent more power at 12 percent lower cost per MW than the standard Cummins G3 engine. The Aggreko G3+ HFO variant is also believed to be currently unique as a low cost high speed engine capable of operation on heavy fuel oil and provides electrical power at substantially lower cost than diesel alternatives.

An extensive engineering programme was completed integrating Ricardo design, engineering and development with Aggreko operations and manufacturing allowing early fleet trial to develop and prove engine and system robustness. As a result, the new Aggreko G3+ HFO provides an extremely robust solution for power customers wishing to avail themselves of the flexibility of containerized, modular power solutions while benefiting from the very attractive cost advantages of HFO operation.

“We are very pleased to have been able to work with Aggreko on this ambitious programme,” commented Ricardo global engine product group director Ian Penny. “Drawing upon our experience of both larger, medium speed HFO marine engines and smaller high speed diesels, we have been able to create what we believe is a unique low cost 1MW engine capable of reliable and robust HFO operation. The results speak for themselves, with our latest fuel-efficient engine technology providing best-in-class cost per megawatt of power generated. We wish Aggreko every success with its new G3+ HFO product and are sure that customers will be attracted by the extremely low cost of power that it provides.”

“The Aggreko G3+ HFO engine is a major step-forward in containerized, modular power solutions,” added Aggreko CEO Rupert Soames. “This is a world-class product in terms both of fuel efficiency and operating cost, and is already proving attractive to Aggreko customers. Ricardo provides an excellent fit with Aggreko’s in-house engineering team and together, we can provide a unique development capability which has proven itself in the Aggreko G3+ HFO engine announced today. Aggreko customers can thus be assured that they have access to the very best modular power systems technology available worldwide, delivering unprecedented levels of robustness and reliability in an extremely flexible and cost-competitive package.”

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NOTES TO EDITORS:

Ricardo plc is a global, world-class, multi-industry consultancy for engineering, technology, project innovation and strategy. With almost a century of delivering value, we employ over 2300 professional engineers, consultants and staff. Our people are committed to providing outstanding value through quality engineering solutions focused on high efficiency, low emission, class-leading product innovation and robust strategic implementation. Our client list includes the world's major transportation original equipment manufacturers, supply chain organizations, energy companies, financial institutions & governments. Guided by our corporate values of respect, integrity, creativity & innovation and passion, we enable our customers to achieve sustainable growth and commercial success. For more information, visit www.ricardo.com.

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