

GMG Inks Battery Development Deal with Rio Tinto

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Queensland clean tech company Graphene Manufacturing Group has signed a deal with global mining giant Rio Tinto with the goal of accelerating the development and application of its graphene aluminium-ion battery technology in the mining and minerals industry.

Brisbane-based Graphene Manufacturing Group ([GMG](#)) said it has signed a binding Joint Development Agreement (JDA) with Rio Tinto to advance its graphene aluminium-ion batteries which the company claims can charge up to 70 times faster and have three times more battery life than lithium-ion alternatives.

GMG said the JDA seeks to support the accelerated development of the clean-tech company's graphene aluminium-ion battery technology for use in heavy mobile equipment and grid energy storage applications in the mining and mineral industry.

Rio Tinto will contribute technical and operational performance criteria and \$6 million (USD 4 million) in exchange for preferential access rights.

GMG Chief Executive Officer Craig Nicol said the development agreement, which builds on an existing collaboration between the two companies, is effective immediately and is expected to last two years with payments spread over the term of the agreement.

"The collaboration with Rio Tinto on the applications of graphene aluminium-ion batteries is a key step for GMG," Nicol said. "Together, with the existing technical and supply chain partnerships already established, this is another important step towards GMG's goal to become a major global supplier of next-generation batteries as we continue to de-risk the commercial scale-up of this technology."

The agreement aims to co-develop GMG's graphene aluminium-ion battery pouch cell into an initial battery module proof of concept.

GMG said its technology, which sees an aluminium-ion battery paired with graphene electrodes, offers high energy densities and higher power densities than the lithium-ion technology that currently dominates the global energy storage market.



GMG's battery technology unites an aluminium-ion battery paired with graphene electrodes.

GMG Chair Guy Outen said the opportunity to work with Rio Tinto, which has previously said it will invest approximately \$7.5 billion to help achieve its decarbonisation targets, including cutting carbon emissions by 50% by 2030, will greatly assist the development of the battery technology.

"We'll now re-prioritise our energies to developing this form of battery which should further support progress towards our aim of a commercial, large-scale, highly competitive battery," he said.

As well as providing finance for the project, Rio Tinto will seek to involve manufacturers of heavy vehicles and machinery to work with GMG and Rio Tinto to align the battery pack development with end-use requirements.

GMG said the project could deliver performance enhancements for Rio Tinto, including faster charging and longer-life batteries for heavy mobile equipment and grid energy storage, as well as supporting Rio Tinto's decarbonisation ambitions.

"For Rio Tinto it's a crucial time to partner with companies like GMG to accelerate battery technology and innovation," Rio Tinto Chief Scientist Nigel Steward said. "We are looking

forward to continuing our collaboration and leveraging our combined expertise and resources to develop a truly green battery that has the potential to improve the way we supply and store energy.”

GMG said on completion of the project it will retain ownership of the intellectual property of the graphene aluminium-ion battery pouch cell and battery pack while Rio Tinto will have the right to procure and use the batteries in its operations.

Read the [original article](#) on pv magazine.