

**31<sup>st</sup> October 2011**

**QUARTERLY ACTIVITIES REPORT FOR THE QUARTER  
ENDED 30<sup>th</sup> September 2011**

The Directors of K2 Energy Limited (ASX: KTE) provide the following report for the Quarter ended 30<sup>th</sup> September 2011.

**MEARS SOLAR**

Testing of the MST enabled solar cells fabricated at TEI solutions in Tsukuba Japan concluded during the quarter.

As announced to the market on 21 September 2011, testing of the TEI MST wafers, whose design configuration differed from the better performing CNS (Harvard) designs, exhibited degraded recombination compared to the crystalline silicon controls. The efficiency of a solar cell is reduced because of the effects of recombination, where charge carriers are not able to move into an external circuit.

Since receipt of the initial results, a thorough analysis of all aspects of the TEI wafers has been undertaken. The analysis has confirmed that recombination was not due to fabrication issues as previously thought.

A revised design is now being scheduled for fabrication. The new design is intended to overcome the recombination issues.

Testing of the new design is due for completion by the end of March 2012.

The MST™ technology involves the production of an altered or “nano-doped” layer of silicon that can be used in the manufacturing of silicon solar PV cells; a process already proven in traditional semiconductor manufacturing. This layer is introduced to increase the efficiency parameter for Photovoltaic (PV) technology and solar power generation in silicon PV cells. By improving the efficiency parameter, the use of MST™ technology in the PV cell development process reduces the amount of silicon required, potentially making PV cells significantly more efficient and much less expensive.

In 2010, K2 Energy Limited, located in Sydney, Australia, acquired the exclusive rights to the MST™ IP for all solar applications from Mears Technologies. K2 has provided the funding necessary for the R&D required to test and develop Mears’ MST™ technology for use by large-scale solar panel manufacturers.

## **MEARS TECHNOLOGIES INC.**

K2 Energy Limited's interest in Mears Technologies Inc. is currently 5% and will increase to at least 7.4% conditional on a capital restructure and raising currently in progress.

Mears Technologies Inc. has developed MST™ CMOS technology for use by semiconductor chip producers. The technology addresses key issues that are being encountered by the semiconductor industry.

MST™ has been demonstrated to reduce gate leakage and increase drive current (performance) in CMOS semiconductors. It also has the benefit of reducing the increasing variability in key parameters, that is now one of the most significant problems facing the industry and which is limiting the yield, power and performance of leading products.

The company's core competency combines materials engineering and quantum mechanics with semiconductor process technology, to optimise the power efficiency and performance of integrated circuits manufactured on deep sub-micron processes. With a licensing model and strong patent position covering new silicon structures, methods and processes, Mears Technologies enhances the fundamental electronic properties of silicon, without requiring new manufacturing equipment or the use of exotic materials.

## **OIL AND GAS**

KTE retains its shareholding in Trey Resources I LLC, a US-based limited liability company. During the quarter there was no expenditure incurred in relation to this investment.