

Sediment hosted lithium - the unconventional hydrocarbon of the new energy economy?

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ABSTRACT

Unconventional hydrocarbons have transformed the US economy in the space of a decade. From an energy importer in 2007 the US has become a net exporter of LNG, and shortly also of oil, with significant implications for US industry and geopolitics.

As key components of the 'new energy economy' lithium chemicals and battery products will be required in substantial quantities by the US economy over the coming decades for electric vehicles, grid support and other consumer battery applications. Several battery factories are currently in the development phase to support the expected demand.

The US currently imports over 90% of its lithium needs, with local production limited to a single brine deposit. However, the US does have the potential to supply its domestic lithium requirements from another source – sediment hosted lithium.

First identified in the 1970's, the most advanced sediment hosted lithium deposits contain enough lithium to meet the needs of the planned battery factories in the US for decades, with several earlier stage projects having the potential to add considerably to this inventory.

Sediment hosted lithium is typically found in fine-grained, tuffaceous rocks in the 'Basin and Range' province of the western US, with the lithium found in discrete minerals (e.g. hectorite) or incorporated within the lattice of various smectite or illite species. The host sediments themselves occur at scales from discontinuous, thin interbeds less than 1m thick, to greater than 100m thick packages spanning tens of square kilometres.

Various recent studies indicate these deposits can be a long life, low cost source of lithium and have the potential to transform the 'new energy economy' in a similar way that unconventional hydrocarbons have transformed the existing energy economy.

Jindalee Resources has identified the potential of this untapped deposit style, and is currently progressing its McDermitt and Clayton North projects as potential future sources of lithium to supply a growing US market.