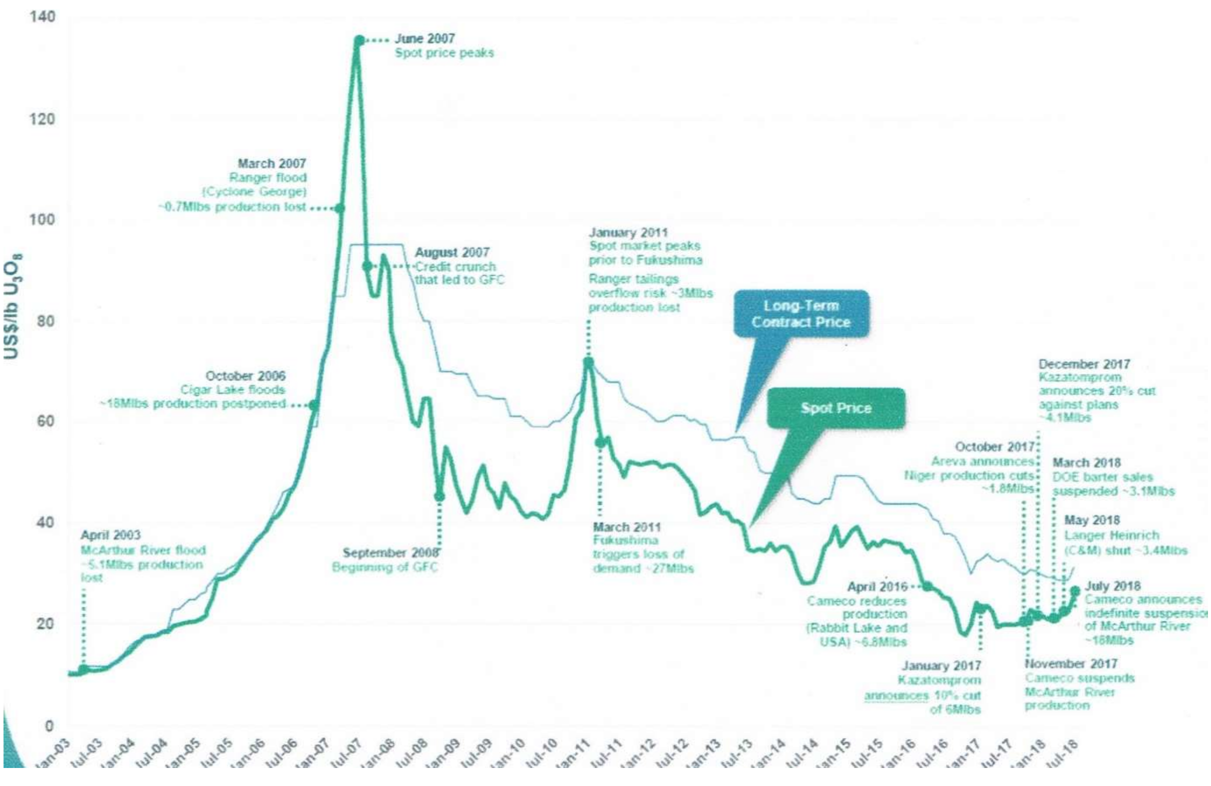
Uranium Market Status

Talk to SA Branch of Australian Nuclear Association 22 November, 2018 at UniSA, by Mr Greg Hall, Alligator Energy.

Greg Hall is a senior mining engineer with over three decades experience. He has been mining manager at Olympic Dam and at Ranger and Jabiluka plus other uranium mines. He was founder and managing director of Toro Energy, Alligator Energy and President of SACOME. Companies he spoke about included Kazatomprom (Kazarkstan), the world's largest producer, Cameco (McArthur River Canada), Paladin and BHP's Olympic Dam. There are three uranium mines in Australia: Ranger in NT, and Olympic Dam and Beverley in SA.

The price of uranium spiked in 2005 at around $135 a pound, but then slumped, not helped by Fukushima and the resulting shut down of reactors or the dismantling of nuclear weapons under the new treaty. The market was over-supplied, resulting in very low prices of the order of $20 a pound and less. There has been a price recovery to around $25 a pound, driven by shut-downs of a number of major mines including McArthur River.



The figure illustrates the uranium spot and contract price from 2003 to 2018. Uranium is normally sold by contract which enables a higher price to be negotiated by guaranteeing supply, or by a cheaper spot price. Japan insists on long term contracts but other countries may opt for the spot price. Long term contracts signed during the boom have acted as a lifeline to high-cost mines. The contract price at present is around $31 a pound compared to $27.50 for the spot price.

Japan has restarted 9 of its 45 reactors that were shut down. The production cost price for yellowcake varies, depending on the country and the ppm in the ore body. Kazarkstan kept going through the price slump despite losing money because production was subsidised by the government. Olympic Dam mines uranium as a by-product of copper and likes to factor in part of the cost of production rather than merely the separation cost.

A price rise to $40 beyond 2021 to around $50 by 2026 may allow new mines to start. If things go well, nuclear power demand is expected to grow significantly in the years ahead as Small Modular Reactors and generation 3 and four reactors come on-line. Utilities normally carry 2-3 year inventories. Uranium consumption is dominated by the US, France, Russia, China and Korea.

<u>Acknowledgment</u> Figure supplied by Greg Hall.