

Russia plans to put a mine on the Moon to help boost energy supply

Russia is going to have to hurry for this is also China's stated objective. Meanwhile NASA is tied up in its underwear.

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Russia has staked out plans to recapture its Soviet-era space-race glory and start mining the Moon for a promising energy resource that scientists say could meet the Earth's power needs for more than a thousand years.

Nikolai Sevastyanov, head of Russia's giant Energia Space Corporation, has unveiled plans to build a permanent base on the Moon within a decade and to start mining the planet for helium 3, a sought-after isotope, by 2020.

The idea would be to use helium 3 to power thermo-nuclear power stations, harnessing its potency to achieve nuclear fusion.

The technology to exploit helium 3 is still under development, but it has been touted by a significant academic school of thought as "the ideal fuel of the future" with several countries expressing interest. The race is now on to be the first to make it work.

Russian scientists have come up with the idea of using "lunar bulldozers" to heat the Moon's surface in order to get at the resource, and Mr Sevastyanov has told an academic conference that Moscow is keen to institute regular cargo flights of helium 3 back to Earth as soon as possible.

His heavily state-controlled firm, one of the most powerful in the Russian space sector, is already drafting plans to turn the base and mining proposals into reality. Russia's new space shuttle Klipper would play a significant role in the project, as would the International Space Station.

"We are planning to build a permanent base on the moon by 2015 and by 2020 we can begin the industrial-scale delivery ... of the rare isotope helium 3," Mr Sevastyanov said.

"The Earth's known hydrocarbon reserves will last mankind 50 to 100 years at the present rate of consumption. There are practically no reserves of helium 3 on Earth. On the Moon, there are between one million and 500 million tons, according to estimates." Much of those reserves are reported to be in the Sea of Tranquillity.

Mr Sevastyanov predicted that nuclear reactors capable of running on helium 3 would soon be developed and said that just one ton of the isotope would generate as much energy as 14 million tons of oil.

"Ten tons of helium 3 would be enough to meet the yearly energy needs of Russia," he added. However, Russia is not the only country interested in the technology. American scientists have expressed interest in helium 3, arguing that one shuttle-load of the isotope would be sufficient to meet US electrical energy needs for a year.

During the Cold War the space race had more to do with prestige but in an era when the world has become acutely aware of the finite nature of its resources, a new 21st-century race is developing with a very different aim: to secure a new source of energy for future

generations. Helium 3's chief advantage is that it is not radioactive, so there would not be a problem disposing of it once it had been used.

But it is not without its sceptics, who argue that it will be too costly and impractical to develop.

The Russian cabinet earmarked £6.1bn last year to restore its cash-starved space agency to its former Soviet glory but whether that is enough to begin realising plans to mine helium 3 remains to be seen.

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