South Korean President Park Geun-hye is due to visit US counterpart Barack Obama early next month and it had been planned that they would sign off a new agreement on nuclear cooperation to take effect after 2014. However, negotiations stalled in recent weeks and officials decided to extend the current agreement for a further two years. This secures the current legal arrangements supporting research programs and the exchange of nuclear goods and services, but means that South Korea is frustrated in planning its long-term strategy for managing used reactor fuel.

Stocks of used fuel are accumulating at South Korean nuclear power plants and the country would like to centralise storage and reprocess the fuel - separating the majority of recyclable fuel like uranium and plutonium from wastes that would be conditioned and packaged ready for disposal. America has long opposed this, avoiding the practice even though its own situation sees reactor fuel stored at power plants all around the country. US policy has been that theoretically weapons-usable plutonium should not be separated (as it is for example during commercial reprocessing in Britain and France). Japan has built a reprocessing plant with US consent that uses a variation on the process during which plutonium isotopes are never separated from other recyclable fuel.

Another issue relates to the front end of the fuel cycle, where South Korea would like to enrich uranium domestically for use in its reactors, rather than contract this to foreign firms. The USA is also unenthusiastic about this process, which can potentially be perverted to make fuel for nuclear weapons Any diversion of nuclear power fuels to military purposes would take place in full view of the International Atomic Energy Agency, which carries out the checks required by
the Nuclear non-Proliferation Treaty.

Nevertheless, agreement with the US is crucial for South Korea because the origins of its nuclear power program lie in Westinghouse units imported in the 1970s. The technology has since been developed domestically, but future use and export depends on the continuation of a suitable South Korea-US bilateral. On the US side, officials are understandably wary of the very serious tensions of the Korean Peninsula, but keen to support an ally while maintaining trade and influence. Officials wrote in 2012 that "each billion dollars of American nuclear exports supports 10,000 jobs, and provides the USA with access and influence over the direction of nuclear programs, ensuring they meet the highest standards for non-proliferation, security, and safety."