

Nuclear fuel cycle

Uranium, as it is mined from the earth's crust, is not directly useable for electricity generation in nuclear power plant. A number of processing steps must be carried out to fabricate uranium fuel that can be used efficiently to generate electricity. The various activities associated with the production of electricity from nuclear reactions are referred to collectively as the nuclear fuel cycle. The nuclear fuel cycle starts with the mining of uranium and ends with the disposal of nuclear waste.

The steps before electricity production - mining and milling, conversion, enrichment, and fuel fabrication- are known as the 'front end' of the cycle. After being used to produce electricity, the uranium becomes 'spent fuel' and the 'back end' of the cycle begins. This may include: storage, reprocessing, recycling, and waste disposal. If spent fuel is not reprocessed, the fuel cycle is referred to as an open fuel cycle (or a once-through fuel cycle). If the spent fuel is reprocessed, it is referred to as a closed fuel cycle.

