Cover story originally published in the September 27, 2004 issue of The Ux Weekly.

September 27, 2004 Volume 18 Issue 39



A weekly publication of UxC

The Supply Elasticity of Uranium (Page 2)

There are other challenges The supply responsiveness Summary -- While we have to expanding uranium production that relate to the comes to tails material. The the supply elasticity of nuclear nature of uranium production and the fact that enrichment of tails is uranium is produced as a byproduct. Examples of these situations include deposit, which still faces a relative to the enrichment challenge to development due to the opposition of a very small number of local recovered from the traditional owners. Another enrichment of tails drops. example is the Olympic Dam expansion, in which case higher uranium prices that demand for uranium will be all but ignored in the also drops. decision whether to expand capacity; that decision instead lies with the outlook rising prices on HEUfor the copper market. related and tails supplies

the production side by plus Russia's repatriation of or minus 15 million pounds these supplies is largely a per year depending on whatfunction of increasing happens to them in the next uranium requirements in five years. Higher uranium Russia and on the part of prices may help in some indirect sense, but neither project will proceed or be based purely on the uranium market. In the case assay of tails. Since HEU of Olympic Dam, future uranium production depends not just on the price of uranium, but the

Inventory supply is not

price elasticity."

is even worse when it supply of uranium from the uranium here, it is clearly negatively related to price, 3.3 estimate cited by the the amount of uranium Of course, this is counteracted to the extent

can be seen with what has So just these two projects, happened with HEU feed taken together, could swing supplies. While it is true that countries to which Russia is exporting reactors, it is also likely the case that this relates to the drop-off in the must be blended with enriched tails, more enrichment capacity must be devoted to enriching tails price of copper as well. This material as the assay of this is what is known as "cross- material drops. Since enrichment capacity is fixed over the short run, this means less capacity can be

not attempted to measure less than one, not the 2.3at least over a certain time University of Chicago study. period. This is because as The problem facing uranium ERA's world-class Jabiluka the uranium price increases supply is that only a portion of supply responds positively price, tails assays drop, and to price. This would not be a problem if production and requirements were in closer balance than they are today, as requirements are not growing that rapidly. However, production must grow strongly to make up for the decreased use of The practical implication of inventories expected in the future, so supply elasticity is very important.

elastic or evenly negatively related to price for other purposes,

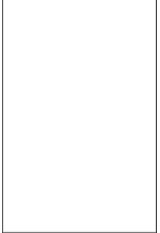
-- When it comes to the inventory components of uranium supply, the picture European enrichers which with respect to supply supply of uranium from nuclear weapons is certainly not price elastic. There are other considerations far more important than price when making decisions about blending down weapons material. And, even if governments decide to make more material from weapons available, there are constraints associated with conversion and blending capacity (this is especially true of the United enrichment available to States), so this type of supply cannot respond quickly to a price stimulus even if there were the desire to do so.

devoted to enriching tails including Russian internal needs and repaying are shipping tails to Russia. elasticity is far different. The Some of the HEU feed that is returned to Russia must be used to compensate for these deficiencies, so supply from this source is going down as prices are going up.

> Of course, over the longer term, enrichment capacity can be increased and thus the supply of uranium from tails can increase to the extent that this capacity is devoted to enriching tails. But, the capacity of enrich tails may not increase by very much. This response is much slower. is because the demand for toll enrichment is also increasing--spurred by lower tails assays and the building of new reactors, the movement to higher capacity factors, and the capacity uprates of existing reactors.

Supply Elasticity

The elasticity of supply measures the response of supply to a given change in price by taking the percentage change in supply and dividing it by the percentage change in price. Ratios of greater than one indicate that supply is elastic; less than one is an indication that it is inelastic. For inelastic supply, changes in demand can have a profound impact on price, as shown in the charts below, while when supply is elastic, changes in demand have much less of an impact on price. When supply is elastic, it reacts quickly to a change in demand; with nelastic supply the



Page 1

Copyright © UxC, All Rights Reserved.