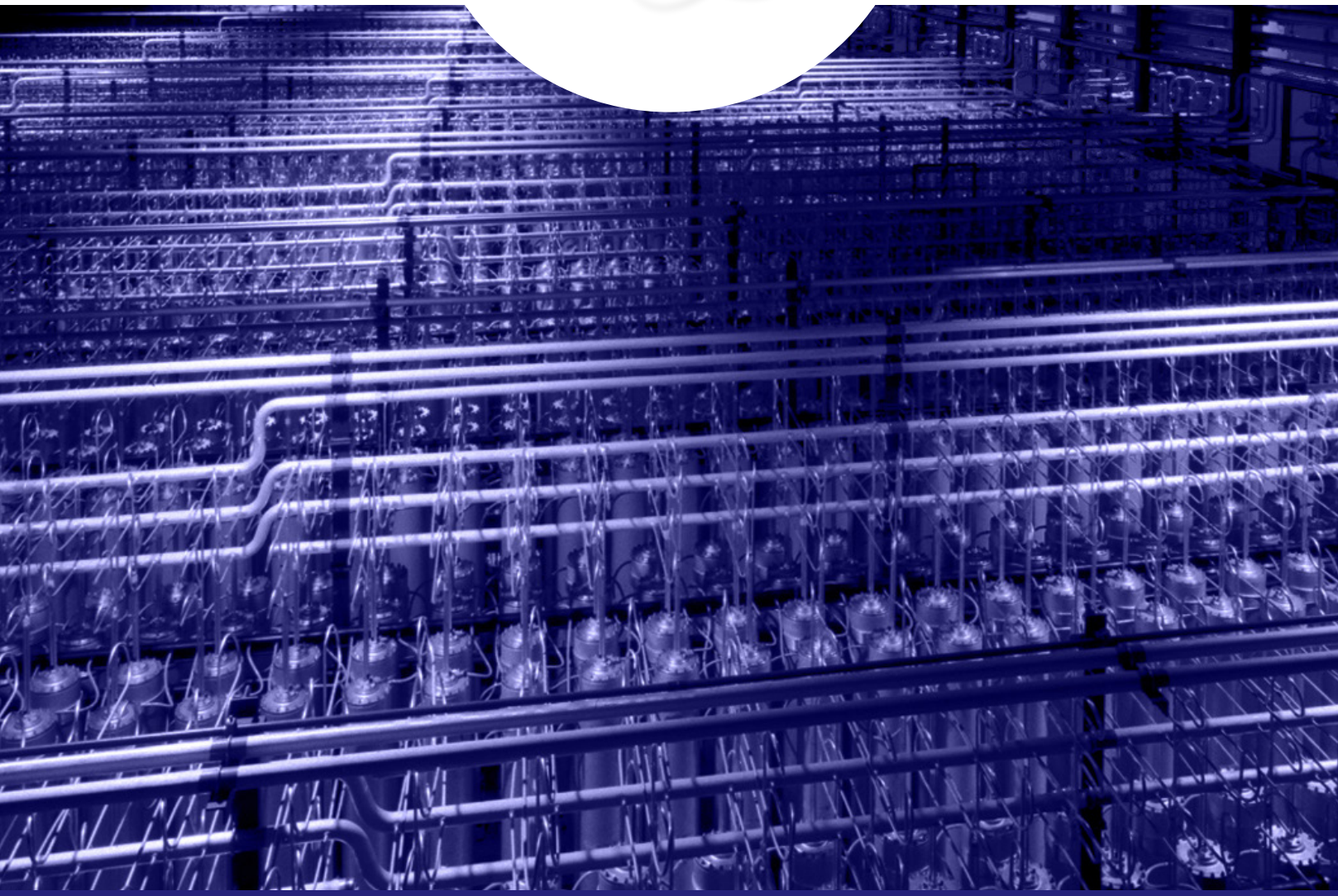

# Quarterly Uranium Market Report

3rd Quarter 2022

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# Uranium Prices Analysis

During the third quarter of 2022, ESA processed 55 transactions, including contracts, amendments and notifications on the frontend activities. Between July and October, European utilities concluded 4 new spot natural uranium supply contract (including purchases, sales, exchanges and loans) and 3 new long term contracts.

**Table 1. ESA Quartely Spot Prices**

| Quarter | ESA Spot[1] EUR/kgU | ESA Spot USD/lb $U_3O_8$ | ESA Spot All Users[2] EUR/kgU | ESA All Users USD/lb $U_3O_8$ |
|---|---|---|---|---|
| 2021 Q3 | - | - | - | - |
| 2021 Q4 | - | - | 86.07[3] | 37.95[4] |
| 2022 Q1 | - | - | - | - |
| 2022 Q2 | - | - | - | - |
| 2022 Q3 | - | - | - | - |

**Table 2. Number of contracts processed by ESA**

| Quarter | Number of spot natural uranium contracts concluded by EU utilities[5] | Number of spot natural uranium contracts concluded by All parties[6] | Total number of contracts processed by ESA |
|---|---|---|---|
| 2021 Q3 | 2 | 2 | 61 |
| 2021 Q4 | 1 | 5 | 61 |
| 2022 Q1 | 0 | 3 | 68 |
| 2022 Q2 | 5 | 7 | 39 |
| 2022 Q3 | 4 | 4 | 55 |

1 ESA Quarterly Spot Uranium Price is a simple average of natural uranium prices. It accounts for one transaction only or multiple transactions executed during the quarter and one of the parties is EU utility. It is calculated, only if, at least three transactions with reported prices were executed.
2 ESA All Users Quarterly Spot Uranium Price is a simple average of natural uranium prices. It accounts for one transaction only or multiple transactions executed during the quarter and one of the parties is EU utility or other user (intermediary, producer)
3 Price calculated for half year period
4 Price calculated for half year period
5 including purchases, sales, exchanges and loans
6 including contracts, amendments and notifications on the front-end activities

# Future needs and gaps in conversion and enrichment services deliveries in light of security of supply policy

Functioning of the EU common nuclear fuel market has been affected by the geopolitical developments which occurred on our continent this year. Russia's military aggression against Ukraine has, inter alia, massively disrupted the global supply system for all sources of energy. It has strongly affected the Community's security of supply of nuclear materials and services, and aggravated energy dependence issues.

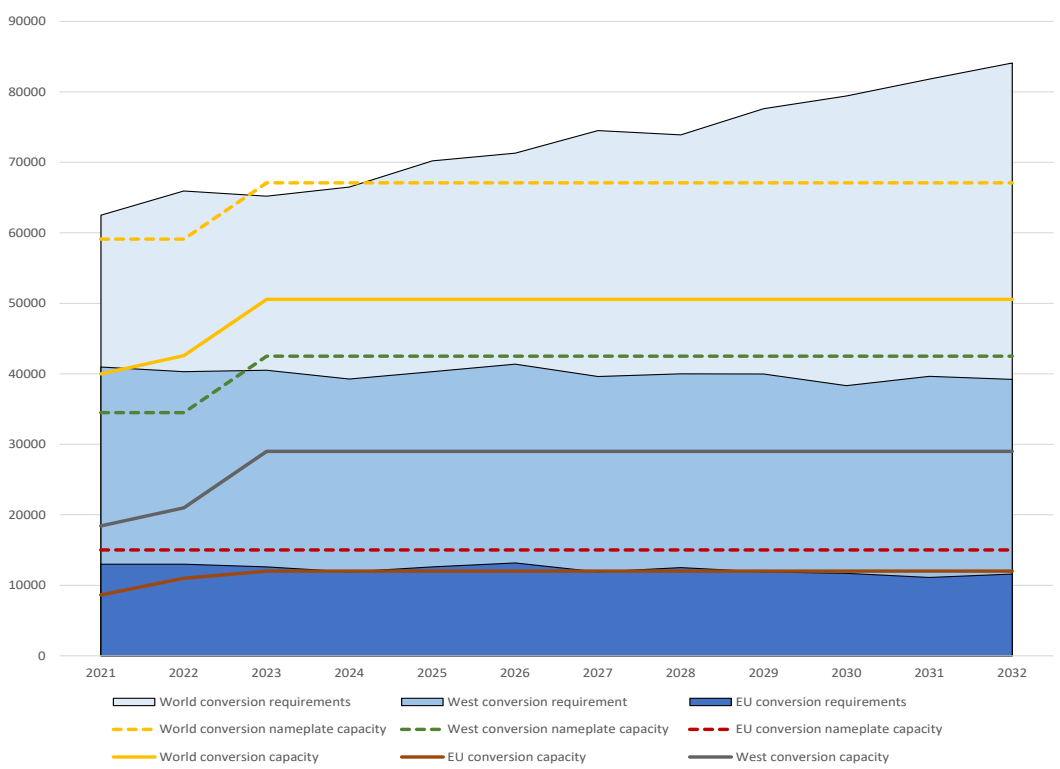
The European Commission Communication REPowerEU Plan[7] states that *"diversification options are important for Member States currently dependent on Russia for nuclear fuel for their reactors serving either power generation or non-power uses. This requires working within the EU and with international partners to secure alternative sources of uranium and boosting the conversion, enrichment and fuel fabrication capacities available in Europe or in EU's global partners."*

As a reaction to Russia's invasion of Ukraine, the EU has had to adopt far-reaching restrictive measures, which targeted legal entities, natural persons and a number of activities, but also affected transport and trade. Although nuclear supplies have not been covered by sanctions, they were affected indirectly e.g., by some issues with transport of nuclear fuel.

To have a first overview of the possible implications of the changed market situation, ESA developed a preliminary analysis of conversion and enrichment capacity against the requirements. It is based on information provided by nuclear industry and reported in 2022 directly to the Agency by the Euratom utilities as part of the annual survey and industry information[8].

**The analysis of global conversion capacity shows lack of sufficient capacity to satisfy all markets already as of 2024.**

However, quantities missing in the EU can be quickly recovered as soon as the Philippe Coste conversion plant in France would ramp up its capacity[9]. Alternatively, it might be complemented by secondary supply sources, which include government-held or commercial inventories of uranium in any form, as was the case after Fukushima.



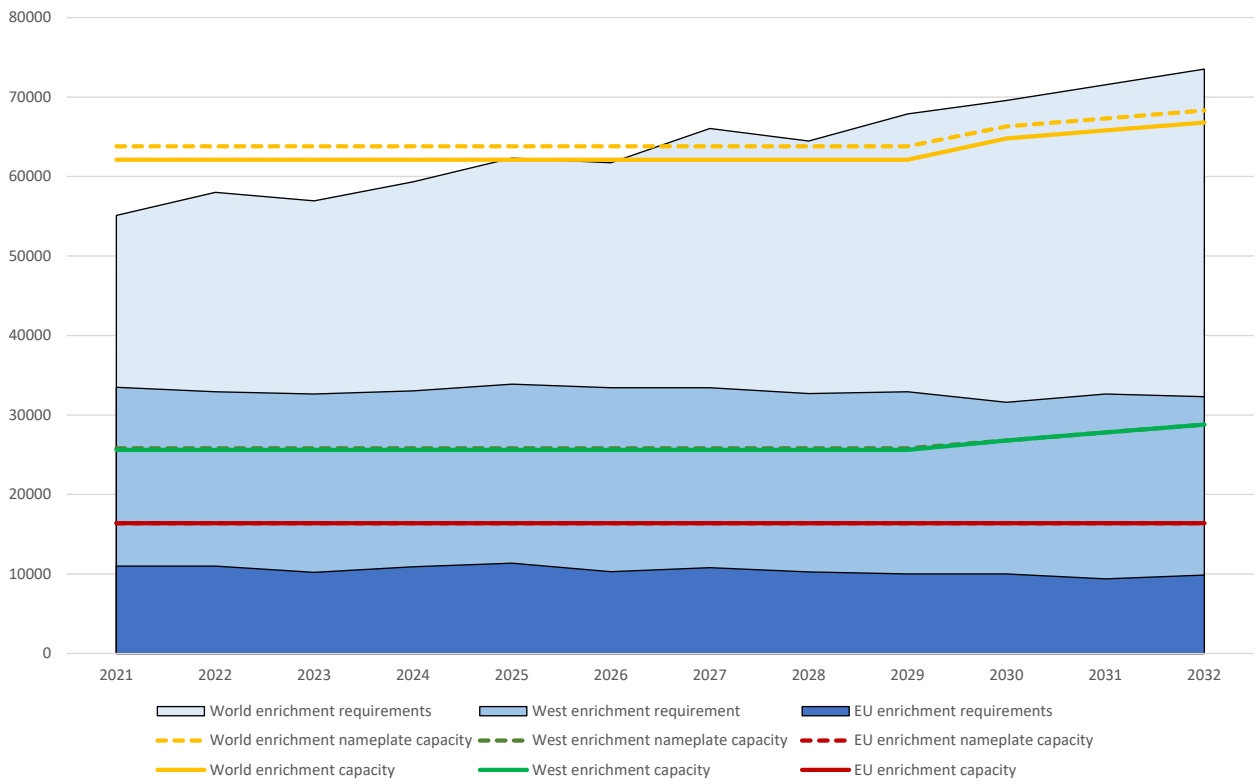

7 REPowerEU Plan: Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of Regions, adopted on 18.5.2022 – COM(2022) 230 final.

8 This analysis was developed on the basis of EU and global uranium demand scenarios. It indicates possible need for natural uranium and related conversion and enrichment services. It does not include enrichment needs for HALEU production and reprocessed uranium. The adopted model is viable when certain conditions are met, especially current path of new builds is maintained and policies of ramping up of conversion plants will continue as currently announced.

9 Philippe Coste has nominal capacity of 15,000 tU.

**As regards enrichment capacity, the future demand is secure for the EU and roughly so for the world.**

The output of enrichment plants in the European Union is sufficient to fully cover its common market's needs. However, these plants supply also to customers outside the block so the EU could be self-sufficient only by limiting exports, an unlikely political decision. The US has a less privileged position, with huge needs and a relatively small domestic capacity. For the free-market economies[10], there is a missing capacity, which could be however compensated by overfeeding and to some extent by the existing inventories.




However, an option of overfeeding centrifuges would raise demand on UF6 produced by conversion plants potentially up to 40% and the additional conversion capacity required be overfeeding is not available without new investments.

10 marked as 'West' in the graph